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Yale Medicine

autumn, 2003

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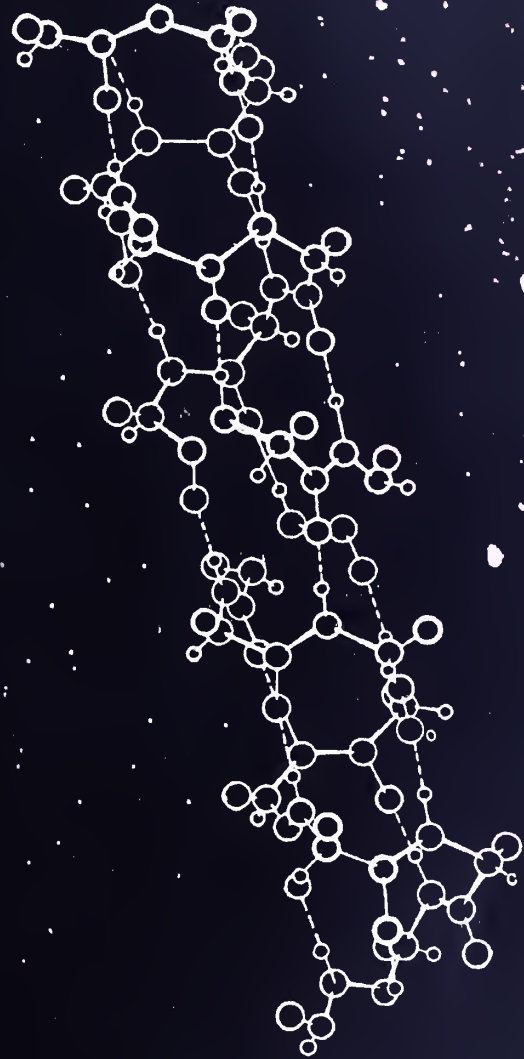
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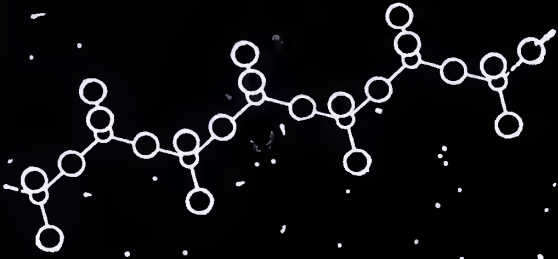
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Cushing/Whitney Medical Library

For...



AUTUMN 2003

yale medicine

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ON THE COVER

Academic researchers in pharmacology have long relied on intuition to advance the process of drug discovery. Even in today's more technology-driven and "rational" environment, there's nothing like an inspired hunch.

Illustration by Gary Clement

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On the Web

info.med.yale.edu/ymm

On our website, readers can submit class notes or a change of address, check the alumni events calendar, arrange for a lifelong Yale e-mail alias through the virtual Yale Station and search our electronic archive.



It's high time to fix the malpractice mess

Your article "Showdown" in the Summer issue of *Yale Medicine* brings out the sorry state of affairs in the medicolegal climate. When I began the practice of ob/gyn after World War II, my malpractice insurance was \$25 a year.

*Albert W. Diddle, M.D. '36
Knoxville, Tenn.*

The lucid comments about the malpractice situation and its aggravations were apt and helpful in understanding the dilemma. However they failed to mention one of the major causes of premium increases, which is the failure of state medical examiners boards to take steps to reduce the number of compensable medical errors.

For some years the Public Citizen Health Research Group (PCHRG) has closely followed malpractice suits decided in favor of the plaintiff. During the period 1990-2000, 5 percent of the doctors were responsible for the payouts in 54 percent of the suits. In other words, over half the cases of successful litigation were the fault of only 5 percent of the practitioners.

Overall, of the 35,000 doctors who had two or more payouts during that period, only 8 percent of them were disciplined by their state medical examiners board. The PCHRG publishes these figures periodically, and they emphasize that doctors who are repeatedly found to be at fault are responsible for the increasing costs of insurance for

the rest of the profession. The conclusion is obvious: state boards should recognize that it is their duty to discipline the repeat offenders and with more than a tap on the wrist.

*Frederick W. Goodrich Jr.,
M.D., HS '49
Medford, Ore.*

In reporting on the current medical malpractice crisis, author Eli Kintisch characterizes it as a battle between doctors and lawyers. The cliché is catchy, but it is also misleading. Thousands of attorneys in this country, myself included, devote their professional careers to defending health care providers and hospitals in medical malpractice cases and advocating for tort reform measures that limit physician liability. This is not a case of doctor versus lawyer; it is both broader and more refined than that. At best, the generalization oversimplifies the nuances of the debate. At worst, it serves to perpetuate the misguided animosity that, sadly, polarizes the professions and leaves patients stranded somewhere in the middle.

*Ken Baum, M.D. '01, J.D. '01
New Haven*

More letters on this topic appear on our website, info.med.yale.edu/yymm.

Knowing when not to retire

As a "mature physician" of 65, I found that I disagree with a significant proportion of Herbert Kaufmann's essay ["Knowing When It's Time to Quit," Summer 2003]. I am at the stage of my medical career where I am working because of my joy in the practice of medicine and the feeling that I have something additional to offer to my patients. This is true of many physicians in their prime, who have continued to expand their base of medical knowledge and perhaps are now more willing to listen. It would be a shame for the medical community and for patients to lose such a valuable resource.

When I lose the desire to continue to learn, lose the joy

of going to my office and talking with my patients, then I will move to another phase of my life, retirement.

*Mark W. Lischner, M.D. '65
Roseville, Calif.*

To my former fellow, Herbert Kaufmann: I read your recent essay and was delighted at your eloquence if pained at your conclusion that doctors should retire. I am grateful as I approach 80 that you left unspecified the age for desuetude. You condoned your own retirement by saying that aging doctors grow out of touch with junior colleagues who prefer their own peer group anyway, that older practitioners no longer understand the science in medical journals and that—in your words—they grow irrelevant as far as their colleagues are concerned.

I failed you as a teacher if you imagine that most of the people who come to see me require that I trace the twists and turns of amino acids. It may be fun to read the latest science, but little of that is required to care for patients in the office or clinic. There are nowhere near enough physicians, and we who are spared can make a contribution by working part time in an office or clinic to let someone else bear the heavier burdens of the hospital. We need elderly doctors in our intensive care units, not taking care of patients and not, one hopes, lying in a bed, but as knowledgeable patient advocates wandering around the unit asking questions about what is being done and why, and to what purpose. The intensive care unit might even be a place for elderly doctors to talk to the families of the patients being taken care of by younger experts.

There is much good also to be said for the viewpoint of the old, who have had experience and now have the leisure for contemplation. It takes staying power, iron pants and stamina—and a willingness, no an eagerness, to accept a changed role.

People may think that you are irrelevant, but as long as you are convinced that you are not, you have something to say to them.

*Howard M. Spiro, M.D.
Professor emeritus of medicine
New Haven*

The letter above is excerpted from a longer essay by Howard Spiro that appears in full on the letters page of our website, info.med.yale.edu/yymm.

Dear Herbert: I am responding to your essay and Howard Spiro's response. You eloquently describe how, as we get older, our relationship with our medical community changes—a discomfort and reality all physicians must experience. At some point in time, I agree, it would be wise to retire. At what point in time this happens will depend on the individual.

Change in life is inevitable and we all respond differently. Your response, seemingly, was to retire; Howard's was to adapt to it by accepting a "changed role"; and mine was to create a new career. I also retired three years ago, and although I loved the medical community that I left behind, I decided to enter a new field and way of life. I have been auditing courses at the Yale School of Forestry and Environmental Studies and am volunteering as a stewardship coordinator for a land trust. Like Howard, I have a new niche, friends and colleagues, and I am enjoying my new life immensely.

I would like to believe retirement is a beautiful phase of life when a physician becomes free from the restrictions of a lifelong medical career. The time that decision is made and the life that is subsequently chosen will depend on one's attitude, desires, ambition and health, not age. The three of us have made our choices.

*Vincent A. DeLuca Jr., M.D.
Clinical professor of medicine
(retired)
Branford, Conn.*

Herbert Kaufmann's article was interesting and useful. I retired at 70 to run a vineyard and win-

ery. My experience is described in a chapter in a book called *Doctors Afield*, published by Yale University Press in 1999.

In my time at the School of Medicine, there were a number of optional courses. Are those still offered? If so, I would suggest an elective on retirement. Young people entering medicine often have a narrow view of the world. Retirement is certainly not what they are thinking about. When I retired from psychiatry and psychoanalysis, I was struck by how many of my colleagues hung on way past the time when they should have quit. They had nothing else to do. Some planning earlier in life would have served them well.

*George W. Naumburg Jr., M.D. '45
North Salem, N.Y.*

Thanks for the news from Cedar Street

Again I am awed by this spectacular publication you have crafted with its singular breadth and depth, sensitivity and historical continuity. *Yale Medicine* is one of many publications I receive but the only one I devour from cover to cover. Congratulations and thanks for an outstanding contribution to generations of Yale physicians.

*Glenn L. Kelly, M.D. '62, HS '66
Englewood, Colo.*

The things that matter

As one can see from these pages, our mailbag has been bursting lately. Some of the letters affirm an idea expressed in *Yale Medicine*, while others offer a wholly different perspective. I hope this means we're covering topics of importance to readers and presenting a diversity of views on questions that are too complex to have simple answers. Just as the university thrives on the exchange of ideas, so does this magazine.

The topics in the Summer issue that drew the greatest response were physician retirement and the malpractice insurance debate. Alumnus Herbert Kaufmann's article on why he decided to retire while still in his prime ("Knowing When It's Time to Quit") was unsolicited but perfect for the *Essay* section. For our feature on the malpractice debate ("Showdown"), we did ask readers for their opinions and received a great number in reply. The letters are still coming.

Next we're turning our focus to bioethics, a growth area in science and medicine if ever there was one—and an area of increasing strength at Yale. For our Spring issue, we'd like to hear from you about the ethical dilemmas you have faced in your professional life. We will then pose the thorniest of these problems to a panel of bioethics experts from the Yale faculty. Please send your story to: Ethics, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612 or by e-mail to ymm@yale.edu. We'll publish a selection of dilemmas, along with responses from our resident experts, in *Yale Medicine* and on our website, info.med.yale.edu/ymm. And since it is next to impossible to find universal agreement on the things that really matter, expect to see more letters to the editor.

Michael Fitzsousa
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Yale Medicine

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SECOND OPINION BY SIDNEY HARRIS



"BUT IF I COME BACK, WON'T IT BE SECONDARY CARE?"

In the dean's office, it takes a brain surgeon

Running the med school is a complex task, which may be why Yale tapped Dennis Spencer as interim dean.

On a Monday afternoon in late June, close to a hundred senior faculty members filled the Historical Library to witness a changing of the guard. Then-Dean David A. Kessler, M.D., was about to announce his departure for the University of California, San Francisco, where he had been named vice chancellor for medical affairs and dean of the school of medicine. Standing next to Yale President Richard C. Levin was a tall, bespectacled man in a dark suit and white beard who has a passion for cultivating water lilies and has been sighted more than once on Cedar Street astride a Harley-Davidson.

"You may be asking yourself, as I did, 'Why Spencer?'" the new interim dean, neurosurgeon Dennis D. Spencer, M.D., HS '77, said a few minutes later, evoking a laugh from the crowd. Looking at Levin, he went on: "He chose a surgeon, and so I thought maybe he wants quick decisions. So I've made two already. First I will decree that the first floor of the Air Rights Garage will be reserved for the exclusive use of motorcycles. Second, I have just decided that the third-year medical students will now be required to do a three-month rotation in neurosurgery."

The room erupted in laughter and thus Spencer took the helm—at least for a time—of the medical school where he began his career in 1972 as

a resident. The moment summed up much about the person who has led neurosurgery since 1987, building the section into a free-standing department in 1997 and serving as its chair: people notice him, they listen and they seem to enjoy the experience. "He's the quintessential neurosurgeon and a wonderful exemplar of the physician-scientist," said Carolyn W. Slayman, PH.D., deputy dean for academic and scientific affairs and Sterling Professor of Genetics.

Spencer himself sees the post as an opportunity to keep the school on a steady course during a time of transition, and to move it ahead in certain critical areas pending the appointment of a permanent successor to Kessler, who came to Yale as dean in 1997.

In July, Spencer said that his initial areas of focus would be faculty recruitment, fund-raising and shepherding

the allocation of laboratory and office space that becomes available as more than 700 investigators move into the Anlyan Center for Medical Research and Education. He said that Kessler's "outstanding recruitments over the last few years" of senior faculty members have equipped the school with "an excellent complement in faculty leadership right now. ... At this stage we're focusing on mid-level positions—some senior, some junior, too, but primarily mid-level positions that have been created in the process of bringing in new department chairs."

Spencer also noted President Levin's announcement on June 23 of a \$50 million matching endowment fund for the medical school. "This promise is very real, and it's going to be the top thing on our agenda," Spencer said.

A graduate of Grinnell College and Washington University School of



JERRY DOMIAN

Among the priorities demanding the attention of the new interim dean, Dennis Spencer, are faculty recruitment, fund-raising and the allocation of space.

Medicine in St. Louis, Spencer came to Yale in 1972 as a resident in the Section of Neurosurgery. He served as chief resident, then joined the faculty as an assistant professor in 1977. Over the next 25 years, working with colleagues including his wife, Susan S. Spencer, M.D., FW '78, a Yale neurologist and past president of the American Epilepsy Society, he developed new approaches to the surgical treatment of epilepsy and new models for understanding the biochemical and physiological mechanisms of the disease.

In a September e-mail message to faculty, Levin announced the formation of a 15-member advisory committee to assist him in the selection of the next dean. "The committee's first task will be to assist me in evaluating the 41 candidates who have been identified by nominations and in my conversations with the department chairs and other leaders of the School," he wrote. "If a wider search is undertaken, I will seek the committee's advice on how to proceed."

In the interview, Spencer said he had not decided "whether to think about [the deanship] as a full-time position" and is focusing his attention on the tasks before him. He has appointed Joseph M. Piepmeier, M.D., HS '82, as the interim chair of the Department of Neurosurgery and cut back his time in the operating room and clinic.

"My role is to keep things moving forward, and if Rick Levin thought that was important and that I was the right person to try to do that, I'm happy to do it, however long it takes," Spencer said.

Levin praised Kessler for "six years of accomplishment and real advances for the school," notably the completion of the Anlyan Center and the recruitment of more than a dozen department chairs and program leaders. "This is a moment of sadness but also excitement as he takes on what is a tremendous new challenge," Levin said.

—Michael Fitzsosa

A security review drags on, devastating a scientist and derailing cutting-edge work

As a scientist, Heng Zhu, PH.D., is used to dead ends, setbacks and roadblocks. But nothing prepared him for the obstacles he would encounter this past year when he tried to renew his expired visa and continue working as a postdoctoral fellow in the Department of Molecular, Cellular, and Developmental Biology.

"It screwed up my life totally," said Zhu. "I wasn't able to work for a year, and I lost my fellowship." Without an income, Zhu also lost his apartment and car, and his credit rating was ruined. Because he was stranded in China for months, he and his fiancée broke up.

Zhu's troubles began in March 2002, when he realized he had let his work visa expire. Returning to his native China to renew it, he wound up languishing in Beijing for a year while the State Department did a security review. He was finally allowed to re-enter the United States in mid-April of this year.

Zhu, 35, became mired in the quicksand of heightened security measures implemented after the September 11 terrorist attacks. His case drew national attention, in part because his delay was longer than most, but also because his work is groundbreaking and well-known.

"He invented a whole new technology that has enormous value for understanding basic biological processes," said Michael Snyder, PH.D., chair of Zhu's department. Snyder said Zhu developed a method to study the function of all 6,300 proteins encoded in the yeast genome. Zhu's work, likely to aid drug discovery efforts, yielded a \$1.5 million grant from the National Institutes of Health.

When Zhu got stranded in China, Snyder and others circulated a petition, wrote to congressional represen-



JOHN CURTIS

"Basically, I lost everything here," scientist Heng Zhu said of his year in diplomatic limbo.

tatives and called the State Department, all to no avail. The State Department doesn't respond to questions about particular cases, said Bureau of Consular Affairs spokesperson Stuart Patt.

At Yale Zhu is not alone. According to Ann Kuhlman, director of the Office of International Students and Scholars, about 20 foreign undergraduates, graduate students, postdocs and faculty members experienced visa delays during the 2002-03 academic year.

Zhu finally renewed his visa and returned to New Haven—but not for long. Late in the summer, as his postdoctoral position at Yale came to an end, he accepted a faculty position at Johns Hopkins.

Although he's back in the United States and his career is back on track, Zhu will never recover the time he lost at Yale. "I can't turn back the clock—that's the bottom line—which is a loss to Yale and the United States as well as to me."

—Jennifer Kaylin

Neuropeptide's presence in high levels suggests soldiers are born, not made

Contrary to the image of hardened drill sergeants molding untrained youths into skilled fighting machines, a Yale psychiatrist suspects that some soldiers may be born that way.

Charles A. Morgan III, M.D., associate professor of psychiatry, studied troops taking a rigorous survival course at Ft. Bragg, N.C., home to the XVIII Airborne Corps, to see whether some handled stress better than others. Working with researchers from the base, he found that the Army Special Forces, also known as Green Berets, consistently outperformed the other soldiers. When he looked at the levels of neuropeptide Y, a brain chemical that is linked to stress, he noticed that the Berets released higher levels during periods of stress and then returned to baseline more quickly once the stress was removed.

"As a group, the Special Forces were releasing so much more, we could identify who was in that unit just by looking at the numbers," Morgan said. "The more neuropeptide Y they were releasing during stress, the fewer symptoms of confusion or mental disconnection during stress were reported." During their training, soldiers are deprived of food and sleep, pursued through rough terrain by other soldiers



Special Forces troops, such as these searching a home in Afghanistan, release higher levels of neuropeptide Y, which helps them deal with stress.

acting as the enemy and, if "captured," subjected to interrogation.

Morgan has published his research in several journals, most recently last year in *Biological Psychiatry*. But as soldiers prepared to go to war in Iraq in the spring, Morgan's studies drew attention from the national press.

He says the question raised by his findings is whether the Special Forces soldiers have always released higher levels of the chemical or whether their training somehow enhanced their ability to do so. "I don't think that's likely. I think those guys are just different," Morgan said, "but we're still testing that hypothesis."

Morgan's findings could help the Army select the most likely candidates for dangerous duty, but there are also civilian applications. "Because we found that neuropeptide Y is low in people with anxiety disorders and depression, this raises the possibility of new ways of treating them. One might expect that pharmacologic agents that act as agonists at the NPY-1 receptor might diminish anxiety," he said.

Morgan is now looking at ways to help soldiers bounce back from stressful situations more quickly and manage stress more effectively so they don't make costly—or deadly—mistakes.

—Jennifer Kaylin



WARSHAW RETURNS FOR SYMPOSIUM

For the second year, Joseph B. Warshaw, M.D., former deputy dean and chair of pediatrics, visited Yale from his post as dean of the University of Vermont College of Medicine. Eight scientists from around the country came to Yale in March to discuss the cardiovascular system at the Joseph B. Warshaw Symposium on Developmental Biology. Clifford W. Bogue, M.D., HS '90, FW '93, chief of the pediatric intensive care unit, welcomed Warshaw, describing him as a "leader in pediatrics throughout his career," with a strong interest in nurturing pediatric scientists.

Keep religion out of stem cell research, Reeve urges medical school audience

Social and religious conservatives have robbed American scientists of their chance to play a leading role in the promising field of stem cell research, actor and writer Christopher Reeve said during a visit to the medical school in April. "We're giving away our pre-eminence in science and medicine," he said. "We're going to lose incredibly valuable time."

"When matters of public policy are being decided, no religion should have a seat at the table—that is what is provided for in the Constitution," Reeve said. Yet religious conservatives, including the Pope, he said, "have an undue influence in the debate."

Because of their plasticity—their ability to differentiate into any cell in the human body—stem cells "have unlimited potential to cure disease," Reeve told the crowd that filled the audi-



JERRY DOMIAN

In a talk sponsored by the Yale Stem Cell Interest Group, actor Christopher Reeve said science, not religion, should drive the debate over stem cell research.

torium of the Anylan Center for Medical Research and Education. Reeve also hopes that stem cell research will lead to a cure for paralysis such as his, the result of a 1995 riding accident.

In a talk sponsored by the Yale Stem Cell Interest Group, Reeve criticized President Bush's order of August 9, 2001, restricting federal funding for embryonic stem cell research to only 64 extant cell lines. (Last May,

National Institutes of Health Director Elias A. Zerhouni, M.D., acknowledged that only 11 of those lines were eligible for federal research funds.) Reeve suggested that the decision made no ethical sense in light of Bush's objection to using embryos for research. "Those lines were derived from leftover embryos from infertility clinics. Did he suddenly develop a new morality effective August 10th?"

Reeve noted that, although typically about a third of embryos are discarded as medical waste, even vocal opponents of using embryos for research have never suggested banning *in vitro* fertilization. "They know very well that you can't go to a couple and say, 'You can't have a child this way.'"

President Bush has followed his ruling on stem cells with a call for a ban on all forms of human cloning, whether therapeutic or reproductive. Reeve made a distinction between reproductive cloning of human beings (which "sounds like Frankenstein's work," and which he opposes) and cloning stem cells from embryos and adult tissues for research. Reeve rejected the implication "that science has no ethics and that it will run rampant if religion and conservative ideologies aren't brought into the picture."

He called stem cell research "the future of science." "There's going to be a seismic shift," Reeve told an audience composed largely of medical and doctoral students, "and you will ride the wave into an era when stem cells will be able to aid millions of people." He urged the audience to "make it happen here," but advised young scientists to leave the United States and pursue the research elsewhere, if necessary. "It's a big world. ... If you really want to heal people, you go where the work is being done."

"Even though I sit here in a wheelchair, frustrated by today's public policy, I'm very hopeful about tomorrow and what will be achieved," Reeve said. "And so, go do it."

—Cathy Shufro

et cetera ...

UNIVERSITY, UNIONS SETTLE CONTRACT

The university and two unions representing 4,000 workers reached an agreement in September to end a three-and-a-half-week strike, the ninth on the campus in 35 years including a week-long job action in March.

The agreement resulted in unprecedented eight-year contracts with Locals 34 and 35 of the Hotel Employees and Restaurant Employees International Union. President Richard C. Levin and the union's national president, 1967 Yale College alumnus John W. Wilhelm, reached the accord on September 18 in a bargaining session mediated by New Haven Mayor John DeStefano Jr.

Members of Local 34, which represents clerical and technical workers, and Local 35, representing service and maintenance employees, had walked off their jobs on August 27 over pay and pension issues. The new contract, which is retroactive to January 2002, increases pension benefits and will boost the pay of workers in Local 34 by 43 percent by 2009. For Local 35 employees, the total increase will be 32 percent. All workers will receive a signing bonus equal to two-thirds of the wage increase since January 2002.

—Jennifer Kaylin

SPELLBOUND BY SPELLING

Don't count on keeping up with the competitors in *Spellbound*, the Oscar-nominated documentary about the 1999 National Spelling Bee. But if you see the movie, you may spot three members of the medical school community.

They include Suzanne P. Lagarde, M.D., HS '77, FW '80, assistant clinical professor of medicine, and David Stagg, PH.D., research scientist in pharmacology, parents of Emily Stagg, one of eight children profiled in the film. Emily's participation introduced Lagarde and Stagg to the spelling bee subculture, in which the *Paideia*, a collection of spelling bee words, is considered the Bible. Emily's strategy was to learn roots from four languages.

Eighth-grader Emily was one of 250 finalists from a field of 9 million competitors. So how did she do? See the film, with its cameo of the 1971 champion, Jonathan P.S. Knisely, M.D., associate professor of therapeutic radiology. His winning word: "shalloon."

—Cathy Shufro



Lisa Suter, a resident in the Clinical Scholars Program, raises a question during a classroom session on medical statistics.

JOHN CURTIS

Thinking nationally, acting locally

A reconfigured Clinical Scholars Program looks to strengthen partnerships with the community.

In 1973 Yale was one of the founding sites for the Robert Wood Johnson Foundation's (RWJF) Clinical Scholars Program, a two-year fellowship with rigorous methodological training, a strong mentoring component and work in disciplines such as clinical epidemiology and health policy. The program teaches research skills, health policy, leadership, media/communication skills and community health. Founded under the direction of the late Alvan R. Feinstein, M.D., HS '54, the program has seen more than 100 physicians complete research projects.

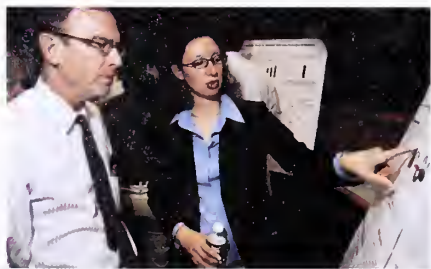
In 1995, when Yale's participation in the national program received a 10-year renewal, there was change in the air at the RWJF. Four sites remained in the program and three new sites were added. "We knew for some time that

there would be a new competition at the end of that funding cycle," said Harlan M. Krumholz, M.D., director of the program at Yale.

Early in 2002, the RWJF announced how the program would change—although about the same number of scholars would receive training, the number of participating institutions would drop from seven to four in 2005. Other programs offered similar training, and the foundation decided to emphasize community-based research by scholars.

Yale applied for a renewed grant in the new program.

The application process came at a difficult time for Yale. Feinstein, who had served as director or co-director until 1997 when he became director emeritus, had recently died. And shortly after the application process, the program's co-director and chair of internal medicine, Ralph I. Horwitz, M.D., FW '77, a former clinical scholar himself, announced he would leave Yale to become dean of the medical school at Case Western Reserve University in Ohio. "The program owes a great debt to Alvan and Ralph," Krumholz said. "Fortunately it had already undergone a transition in leadership at the time of the application. Alvan and Ralph were instrumental in setting up the program for the future and ensuring its future success. The dean also played a critical role in demonstrating Yale's commitment to the program."



JOHN CURTIS

RESIDENTS HOLD THEIR OWN RESEARCH DAY

For a couple of hours on May 29, the Fitkin Amphitheater resembled the Hope Building on Student Research Day—with physicians clustered around posters as younger doctors explained their research. The event was the first Research in Residency Day, which the Department of Internal Medicine intends to make an annual event. Four students presented posters and two others made oral presentations. Topics included cholesterol transport mechanisms, myocardial infarctions among the elderly and risk factors for heart disease in postmenopausal women.

—John Curtis

New center opens with goal of streamlining treatment for women with breast cancer

In April the RWJF announced that Yale would be one of the four sites—along with medical schools at UCLA, the University of Michigan and the University of Pennsylvania—in the program's new configuration. Annie Lea Shuster, the RWJF's national program director, said that the foundation was looking for institutions that had a curriculum designed specifically for clinical scholars and the ability to do research based in the local community. Yale had both.

"This emphasis on participatory community-based research distinguishes our program," said Shuster. "There has to be a lot of planning and work in establishing relationships with the community."

Much of that effort was already under way at Yale. Then-Dean David A. Kessler, M.D., established the Office of Community-Based Research to provide clinical scholars with opportunities to participate in projects with community organizations and Yale faculty. Krumholz hopes that the new office will help unify "a great fragmentation of effort" by coordinating the school's myriad projects in New Haven.

The RWJF is also requiring participating programs to provide a self-contained curriculum specifically designed for the clinical scholars, rather than send scholars elsewhere within the university for course work. Both Krumholz and Shuster noted that Feinstein had been adamant about doing just that. "He always thought that the Clinical Scholars Program should be a real center of gravity, not just an administration office. So from the outset, we have taken on the commitment to develop a program that is most likely to foster the professional growth of each scholar," said Krumholz.

—Colleen Shaddox

Breast cancer is one of those frightening diseases that inspires races, ribbons and celebrity support for those fighting it. Now, a consortium of New Haven health care providers is doing its part by offering a user-friendly place where women needing breast care can come for confidential medical and emotional treatment.

The Yale-New Haven Breast Center, composed of staff from Yale-New Haven Hospital, the Yale Cancer Center and the Yale Medical Group, promises convenient appointments, rapid diagnoses and same-day procedures all under one roof. The center, at 800 Howard Avenue, opened this fall.

"We want to make it an easy and good experience," said Donald R. Lannin, M.D., the center's executive director. "It can sometimes take weeks to get answers; our goal is to coordinate specialties so we can expedite the diagnosis and start providing care quickly."

Lannin said the center was a response to women's frustration with being shunted from one building and one specialist to the next in pursuit of answers and treatment. He said the new center represents the rejuvenation of a program that has long been recognized as a leader in breast cancer research and treatment but which had outgrown its space and equipment.

The new center will consolidate breast care specialties with surgery and diagnostic imaging on the lower level and oncology on the second floor. The center will also provide counseling for patients and educational programs for physicians, patients and the public.

"A woman who is diagnosed with breast cancer has all sorts of worries," he said. "There are a lot of emotional overtones, and we have to be sensitive to that as well."

—Jennifer Kaylin

FENDING OFF DELIRIUM

Taking daily walks and talking about current events can lower the risk of delirium in the elderly, according to a study published April 25 in *Archives of Internal Medicine*. What's more, sticking to a regimen of such activities appears to be as important as taking one's pills on time.

"It has been well-established that compliance with drug treatments is very important for their effectiveness, but the effect of compliance with non-drug treatments has not been studied before this report," said Sharon K. Inouye, M.D., M.P.H. '89, professor of medicine and geriatrics. "It really does lend credence to the fact that the amount of nonpharmacologic therapy patients receive is just as important as drug therapy, where a dose-response relationship is expected."

Patients ages 70 or older who complied with the intervention, which also included word games, fluids for rehydration and improvements in sleep, vision and hearing, showed an 89 percent reduction in delirium risk.

—John Curtis

CARBS? IT'S CALORIES THAT COUNT

Researchers at Yale and Stanford have concluded that cutting out potatoes, pasta and bread doesn't necessarily translate into greater weight loss than high-carbohydrate diets. At least there's little published evidence to support the theory behind the Atkins and other low-carb diets, they reported this spring. "We found that calorie content and how long you're on the diet are the factors that predict weight loss, and not carbohydrate content," said Dawn M. Bravata, M.D., assistant professor of medicine and a co-author of the study. (The lead author was Bravata's twin sister, Dena Bravata, M.D., who's at Stanford.)

The study, published in *JAMA: The Journal of the American Medical Association* in April, examined past research to gauge the effect of cutting back on starch. "The medical literature is lacking studies about the long-term safety and efficacy of low-carbohydrate diets," Dawn Bravata said. "We need these kinds of studies in order to counsel patients who want to lose weight."

—John Curtis



Chimeric “icon” finds another target

A molecule effective against tumors may also be relevant to macular degeneration.

A versatile molecule developed at Yale, already shown to destroy blood vessels in tumors, now shows promise for arresting macular degeneration, a leading cause of vision loss in the United States.

Known as an icon—short for immunoconjugate—the chimeric molecule is made, using recombinant DNA technology, from part of an antibody and a molecule that targets abnormal blood vessels. “We describe it as a synthetic antibody, because it really functions as an antibody, but its targeting mechanism is different,” said Alan Garen, PH.D., professor of molecular biophysics and biochemistry. Garen used as a model an antibody found in camels, because it is more suitable for manipulation by recombinant technology than human antibodies. The targeting portion, fVII, draws the molecule tightly and specifically to the abnormal vessel; then the antibody portion activates an immune attack, destroying the vessel. An important feature of the icon is its flexible design that can generate an all-human molecule for clinical use.

The icon’s targeting mechanism ignores normal blood vessels and zeroes in on tissue factor (TF), a protein produced on the inner wall of abnormal but not of normal vessels. The same search-and-destroy strategy works against tumors by destroying the blood vessels that nourish them, while leaving normal tissue unharmed.

“The pleasing result is that the same mechanism can apply to two very different medical problems: cancer and macular degeneration. What links them are the unique properties of the blood vessels that are involved in both diseases,” said Garen, who collaborated on the work with Research Scientist Zhiwei Hu, PH.D., M.D. Ophthalmologist Henry J. Kaplan, M.D., and associates at the University of Louisville performed the macular-degeneration studies, which were published in the March 4 issue of the *Proceedings of the National Academy of Sciences*.

Macular degeneration is the deterioration of the macula—a tiny spot at the center of the retina—resulting in blurs and blank spots in the field of vision. Abnormal blood vessels are the culprit in the wet form of the disease; they leak fluid onto the macula, damaging the cells. The Yale molecule destroys those leaky vessels without harming normal ones.

So far, the icon has been tested in mouse models of both diseases, and studies are under way at Louisville on a model of macular degeneration in pigs, whose eyes are similar to those of humans. The researchers plan to apply to the U.S. Food and Drug Administration for permission to begin clinical trials of the icon for patients with cancer and macular degeneration.

An icon could be administered in either of two ways, said Garen. “One way would be to produce it externally and administer it by injection,” either into the bloodstream or directly into the affected area. A second method, which the researchers are proposing to use in the cancer trial, involves the insertion of a gene for the molecule into an adenoviral vector that has been rendered harmless. “Then you inject the vector directly into the tumor,” said Garen. “It infects the tumor cells, and this sets up what you might call *in vivo* factories for producing the molecule in the body. With this method, you get continual synthesis, and it seems to be more effective.”

—Nancy Ross-Flanigan

When errant proteins stray, a cellular cowboy rides in to save the day

In the drama of life at the cellular level, proteins can be heroes or villains. When they're wearing their white hats, proteins provide and maintain structure, act as enzymes and hormones and perform vital functions such as transporting oxygen in the blood. But they can also run amok, contributing to cancer, heart disease and inflammatory conditions such as rheumatoid arthritis.

The cellular scenario of this Wild West tale stars Protac, a molecule developed by researchers at Yale and Howard Hughes Medical Institute investigators at the California Institute of Technology. Playing the role of the sheriff galloping in to save the day, Protac rounds up rogue proteins inside cells and orchestrates the proteins' demise. One end of the dumbbell-shaped molecule is customized to bind to the protein of interest; the other end homes in on the cell's natural protein-degrading apparatus. "By bringing the protein into close proximity to the degradation machinery, you can target it for destruction," said Craig M. Crews, PH.D., an associate professor in the Department of Molecular, Cellular, and Developmental Biology with joint appointments in chemistry and pharmacology.

In a presentation at the Experimental Biology 2003 meeting in San Diego in April, Crews and co-workers showed that Protac—for protein-targeting chimera—degrades targeted proteins in intact cells. In a proof-of-concept experiment, they engineered Protac to bind to green fluorescent protein

(GFP), a naturally occurring protein that gives off a bright, green glow under ultraviolet light. When Protac was added to cultured cells containing GFP, it gathered up the glowing protein and promoted its destruction. Within an hour, the cells that contained GFP had lost their fluorescence.

While Protac has potential for treating disease, its more immediate use probably will be in screening large numbers of proteins for better understanding of their functions, much as genetic screens currently are used, said Crews.

"When a genetic screen is used to study some aspect of cell biology, the process involves generating a lot of different mutants that are each defective in some gene that encodes some protein, and then looking for individuals that have a defect in the particular process that you're interested in. The geneticist then determines which gene, and which corresponding protein function, has been altered," said Crews. "But there are several areas of cell biology that are difficult to study using traditional genetics. So what we'd like to do is induce the loss of protein function, not by altering the underlying encoding mechanism—the DNA—but by physically inducing the degradation of particular proteins. One can imagine doing large-scale screens, knocking out every protein individually and looking for loss of particular functions. In this way, we hope to discover new, critical proteins that are required for intracellular processes. So in addition to targeting known proteins, we hope this molecule will aid in the discovery of things we don't even know about."

—Nancy Ross-Flanigan

et cetera ...

NEW AXONS IN MICE

A Yale scientist has encouraged axonal sprouting in mice by removing a protein, Nogo, that blocks the regrowth of nerve fibers in the brain and spinal cord. The research builds on previous findings by Stephen M. Strittmatter, M.D., PH.D., the Vincent Coates Professor of Neurology.

"In the mice with a mutation that prevents Nogo A/B expression, the central nervous system is largely normal but responds to injury in a unique fashion with robust axonal sprouting and long-distance growth," said Strittmatter, lead author of a study published in the April issue of the journal *Neuron*.

The researchers bred mice without the Nogo A and Nogo B proteins. In these mice new axons sprouted after a spinal cord injury, and the mice showed better recovery of locomotor function than control mice.

"Once we can demonstrate that the Nogo protein constitutes an important pathway limiting axon growth, then we can pharmacologically improve functional recovery first in animals and then in humans," Strittmatter said.

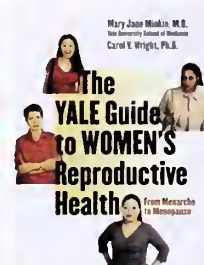
—John Curtis

A DOUBLING OF THE HUMAN GENOME?

A new analysis of the well-studied chromosome 22 suggests that there may be far more than the estimated 30,000 genes in the human genome. "Our study reveals twice as many transcribed bases than have been reported previously," said first author John L. Rinn, a fourth-year graduate student, "potentially indicating there are twice as many genes in the human genome."

Rinn and colleagues in molecular, cellular and developmental biology used advanced microarray technology to map the 34 million bases of gene-dense chromosome 22. Earlier this year in the journal *Genes & Development*, the team reported finding previously undiscovered sequences which were also found in the mouse genome. "This study was a proof of the principle that we can find, en masse, all the regions of a chromosome that are biologically relevant," Rinn said. "In the future we will scale this process to tackle the entire human genome."

—John Curtis



Manual of Dermatologic Therapeutics, 6th ed.

by Kenneth A. Arndt, M.D. '61, HS '62, clinical professor of dermatology, and Kathryn E. Bowers, M.D.

Lippincott Williams & Wilkins
(Philadelphia, Pa.) 2002; 416 pages

This pocket manual is a practical, accessible guide to the diagnosis and treatment of skin disorders. The book outlines the pathophysiology, symptoms, clinical findings, assessment and therapy for each disease and offers detailed guidelines for choosing among therapeutic options.

Principles of Geriatric Medicine and Gerontology, 5th ed.

by Mary E. Tinetti, M.D., professor of medicine (geriatrics) and epidemiology, William R. Hazzard, M.D., John P. Blass, M.D., Jeffrey B. Halter, M.D., and Joseph G. Ouslander, M.D.

McGraw-Hill Professional
(New York) 2003; 1,536 pages

This book continues its tradition of presenting the latest in diagnosis and management of disorders affecting the elderly as it addresses the prevailing principles of gerontology. This orientation, which features experts from the fields of geriatric medicine and gerontology, provides for a uniquely holistic approach to elder care. It features expanded coverage of managing the nursing home patient, diagnosis and treatment

of Alzheimer's disease, movement disorders, managing the multidrug patient, menopause, health care issues in women, health care systems, coronary heart disease and more.

The Visionary Life: Selected Writings of Lee Sannella

by Lee S. Sannella, M.D. '40

Infinity Publishing
(Haverford, Pa.) 2003; 177 pages

Sannella has spent 40 years trying to understand the various states of consciousness in his own body-mind. This book is his attempt to portray the experiences, insights, experiments, conversations and loving exchanges that formed the shape and substance of that inquiry. These are stories about some of the cosmic explorers he has met. He hopes that these tales will enrich humanity by expanding the collective vision of our own human potential.

Listening to Children: Talking With Children About Difficult Issues

by Nancy L. Close, PH.D., assistant professor in the Child Study Center

Allyn & Bacon
(Boston) 2002; 128 pages

The object of this book is to inform and educate teachers, parents and other caregivers about how to interact with children ages 2 to 5 and how to respond appropriately to issues of personal concern. The book includes discussions of common challenges for children, such as dealing with anger, aggression, siblings, birth and death, and addresses their concerns about the adult world and growing up.

First Three Years & Beyond: Brain Development and Social Policy

by Edward F. Zigler, PH.D., Sterling Professor of Psychology and a member of the Child Study Center, Matia Finn-Stevenson, PH.D., associate research scientist in the Child Study Center, and Nancy W. Hall, doctoral candidate at Yale University

Yale University Press
(New Haven) 2002; 272 pages

The authors affirm that sound social policy providing for safe and appropriate early care, education, health care and parental support is critical not only for the optimal development of children but also for strengthening families, communities and the nation as a whole. This book draws on the latest research from the social sciences and studies of the brain to make recommendations for infant and toddler care and development.

Controversies & Conversations in Cutaneous Laser Surgery

edited by Kenneth A. Arndt, M.D. '61, HS '62, clinical professor of dermatology, and Jeffrey S. Dover, M.D., F.R.C.P.C., associate clinical professor of dermatology

AMA Press
(Chicago) 2002; 354 pages

This timely reference will benefit both the beginner and experienced laser and aesthetic surgeon. It examines new laser techniques, and provides expert guidance on using lasers successfully in a wide range of clinical situations.

The Yale Guide to Women's Reproductive Health: From Menarche to Menopause

by Mary Jane Minkin, M.D. '75, HS '79, clinical professor of obstetrics and gynecology, and Carol V. Wright, PH.D.

Yale University Press
(New Haven) 2003; 448 pages

This comprehensive book addresses nearly every aspect of reproductive health in readable, straightforward language. The authors provide the scientific background women need to make vital personal decisions about sexual activity, contraception, family planning and maintaining reproductive health.

Research Design in Clinical Psychology, 4th ed.

by Alan E. Kazdin, PH.D., director of the Child Study Center and professor of psychology

Allyn & Bacon
(Boston) 2002; 637 pages

This textbook describes and explains the methodology and design of research in clinical psychology. It covers experimental design, assessment, sources of artifact and bias, data evaluation and interpretation, and ethical and professional issues. The book identifies and discusses the principles, obstacles, artifacts, biases, strategies and guidelines relevant to each stage of research.

The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to cheryl.violante@yale.edu



DEAN KAMEN

From workbench to bedside: an inventor's tale

Dean Kamen's portfolio of medical inventions ranges from infusion pumps to home dialysis machines to the iBOT, a mobility device for disabled people that is soon to be marketed by Johnson & Johnson. While he may slog through years of trial and error before solving a problem, creating technology is the easy part, Kamen recently told the Associates of the Cushing/Whitney Medical Library. Getting technology to patients is the challenge.

It often means waiting decades for FDA approval, marshaling support from the scientific community and persuading insurance companies to cover new devices. While not proposing specific reforms, Kamen called for a faster, more streamlined process for taking medical devices to market. "Just because it took longer, is it any better?" asked Kamen, president and CEO of DEKA Corporation. "Did it make it any safer? And what is the lost opportunity cost of not using it in between?"

Technology, Kamen added, is often misunderstood. He amazed the Harkness audience with a video of the iBOT in action. The machine allows the user to climb stairs, navigate rough terrain, reach high shelves and look a standing person in the eye. Kamen's fear about the iBOT? That it will be perceived as just a souped-up wheelchair.

"Technology is moving faster," he said, "but our adjustment to it is not. It took people 15 years to stop calling the Model T a horseless carriage."

—Colleen Shaddox



MICHAEL STRATTON

The human genome—more than a list

Among the estimated 30,000 human genes are more than 250 genes that are implicated in oncogenesis. That, according to Michael R. Stratton, PH.D., the Distinguished Lecturer for 2003 at the Cancer Center grand rounds in May, is extraordinary: close to 1 percent of known genes are risk factors for cancer.

Stratton, head of the Cancer Genome Project at The Wellcome Trust Sanger Institute in England, is tracing the history of such mutations and looking for patterns of behavior to try to develop methods of analysis. His team has found, for example, that kinases are heavily represented in cancer genes, while phosphatases are not. "There has to be something biologically configured about phosphatases that does not allow them to become cancer genes. It is this sort of analysis—that is not hypothesis-based, that is purely based on statistical constructs from analysis of the genome sequence—that will give us new biological insights."

That could change the way cancers are classified, or lead to new treatments, Stratton said, before cautioning, "We just don't know whether it is going to end up that way. But I think it is a reasonable aspiration that through these global descriptions of the cancer genome we will begin to move closer to an understanding of the core processes through which cancer develops."

—John Curtis



JEFFREY STURCHIO

From Seattle to Botswana, partnering to fight AIDS

For nearly three years Merck & Co., the Bill & Melinda Gates Foundation and the government of Botswana have worked together to help prevent the spread of HIV and mitigate the impact of the AIDS epidemic. The Merck Company Foundation and the Gates Foundation are each contributing \$50 million; Merck is also donating its two HIV medicines.

Why Botswana? "Botswana has the highest HIV prevalence in the world," said Jeffrey L. Sturchio, PH.D., vice president for external affairs, Europe, Middle East & Africa at Merck. But because it also is one of the wealthiest nations in Africa, basic health care infrastructure was already in place and Botswana's leaders were committed to the fight against HIV/AIDS. The African Comprehensive HIV/AIDS Partnerships has helped build health resource centers at district hospitals and trained nurses and doctors in HIV/AIDS prevention and treatment, Sturchio told an audience at the Center for Interdisciplinary Research on AIDS in April.

"Implementing a comprehensive HIV/AIDS program like this is a complex, dynamic and time-intensive process," Sturchio said. "It has to be done in the context of broader development policies. Mobilizing local capacity and local resources is absolutely critical. Working together it is possible to make a world of difference in the lives of people living with HIV/AIDS."

—John Curtis



JANET WOODCOCK

Using genomics to craft a safer pharmacopeia

Every year some prescriptions go awry, causing the deaths of about 100,000 patients from toxic responses to medications. "We can't predict who will respond to a drug," said Janet Woodcock, M.D., director of the Center for Drug Evaluation and Research at the U.S. Food and Drug Administration (FDA). That could change with the application of genetic knowledge to predict individual responses to medications. It is "more than promise now," Woodcock said. "It's starting to happen."

Woodcock, the keynote speaker at the annual Pharmacogenetics and Medicine Lectures sponsored by Genaissance Pharmaceuticals in April, oversees federal regulation of emerging knowledge about the role genetic variability plays in reactions to medications. Labels for a small number of drugs, she noted, already include information about genetic differences that could affect a patient's response. The FDA has begun to study electronic formats for providing more of such information to physicians.

According to Woodcock, the FDA has requested that companies provide genetic information when available, but has no plans to require pharmaceutical companies to submit genetic response data about their medications. "We need to understand the science," she concluded, "so that we can develop an appropriate policy" which will allow the public to benefit from this knowledge.

—Marc Wortman



JENS BIRKTOFT

In the footsteps of Watson and Crick

At the double helix's half-century, four Yale professors share memories of molecular biology's early days.

By John Curtis



JENS BIRKTOFT



THOMAS STÉITZ

When hundreds of scientists gathered in England in April to celebrate the 50th anniversary of the structure of DNA, among them were four Yale faculty members who trained as postdocs in the late 1960s at the Medical Research Council's (MRC) Laboratory of Molecular Biology. The lab was originally a division of the Cavendish Laboratory in Cambridge, where Francis H.C. Crick, PH.D., and James D. Watson, PH.D., discerned the double helix.

While the four were at the MRC lab—about a decade and a half after Watson, Crick and their collaborators had outlined their model of DNA in the pages of *Nature*—molecular biology was viewed as anything but a growth industry. Everyone in the field knew everyone else, few labs were training molecular biologists and only three journals were interested in articles on the topic. Joan A. Steitz, PH.D., Sterling Professor of Molecular Biophysics and Biochemistry, recalls thinking that her interest in the molecular basis of genetic phenomena had relegated her to an “esoteric intellectual backwater.”

At the time she couldn't imagine all that would transpire over the half-century since Crick and Watson solved the structure. “It has had an impact on every aspect of biomedicine,” said Steitz. “Look at what it has done for the pharmaceutical companies and the whole biotechnology industry that never existed. The impact on forensics is astounding.”

The biological importance of DNA's structure, says her husband, Thomas A. Steitz, PH.D., Sterling Professor of Molecular Biophysics and Biochemistry, lies less in its double helix than in its base pairings. “That immediately said how DNA could be copied and how DNA could be copied into RNA. It laid the foundation for the understanding of the genetic code,” he said. New tools and techniques such as sequencing, cloning and recombinant DNA have been derived from the bases spiraling along the double helix. “It's the first important structure in structural biology.”

The Steitzes started their three-year fellowships in Cambridge in 1967. Peter B. Moore, PH.D., Sterling Professor of Chemistry and professor of molecular biophysics and biochemistry, had arrived earlier that year for an 18-month fellowship. In their last year in Cambridge, the Steitzes overlapped with Sidney Altman, PH.D., Sterling Professor of Molecular, Cellular, and Developmental Biology and professor of chemistry. (In 1989 Altman shared the Nobel Prize in Chemistry with Thomas R. Cech, PH.D., for their work on the catalytic properties of RNA.)

“Of course, the lab itself was such an amazing place to work,” Altman said at the celebration. “The ideas generated whizzed around the lab, many not useful, but when one was, it was recognized as such and shone brilliantly. ... You were expected to work more or less alone with no immediate help from senior people. The assumption was that everybody could do experiments well. The senior people taught by example: everybody was in the lab working.”

The invigorating atmosphere, said Thomas Steitz, extended to the canteen, where seating was limited and postdocs shared tables with Crick or Max F. Perutz, PH.D., a 1962 Nobel laureate, Frederick Sanger, PH.D., who won two Nobel Prizes, or Sydney Brenner, PH.D., a 2002 Nobel laureate. The conversation, Steitz said, was “always science. You wouldn't talk about what you saw at the theater.”

“At the time we were there Sanger was just able to sequence small RNA molecules, which was a significant advance,” Moore said. The scientists, fellows and postdocs there, he said, were encouraged to continue that tradition of discovery and tackle the most challenging problems. “What the MRC was always masterfully good at was making sure that most of its people were working most of the time on things that really counted,” he said. “It was the best 18 months of my scientific career. It was a wonderful place to do science.”

John Curtis is the associate editor of *Yale Medicine*.



ABOVE Among the luminaries at the Medical Research Council's Laboratory of Molecular Biology (LMB) were Fred Sanger, Sydney Brenner and Max Perutz, shown here at a party at the laboratory's canteen in 1980 celebrating Sanger's second Nobel Prize. Brenner received an honorary doctorate from Yale in May.

OPPOSITE CLOCKWISE FROM BOTTOM At Cambridge, intellectual stimulation was cultural as well as scientific for Yale faculty members who trained at the LMB. Tom and Joan Steitz attended a garden party before the annual May Ball held at each college. Joan Steitz is fourth from left in this photograph.

Punting on the River Cam was another attraction of Cambridge. Tom Steitz, with pole on right, and Joan Steitz, seated on right, joined Richard Henderson and his wife, Penny, on the river in 1969. Richard Henderson, now the director of the LMB, was a postdoc at Yale from 1970 to 1973.

Tom Steitz, left, and the late Yale faculty member Paul Sigler attended a scientific meeting in Herschlag, Austria, in 1968.



Building a better drug

While new technologies and industrial-scale approaches to drug discovery are changing the field, academic pharmacology remains a mixture of art and science.

**By Marc Wortman
Illustration by Gary Clement**

“Serendipity” is a word pharmacologists use to describe the way they discovered many effective medications. Even with modern molecular tools, scientists still stumble upon drugs in unexpected ways. “Serendipity” is what happened one afternoon in 1983 in the Yale Co-op bookstore. Leafing through an old chemistry textbook, Krishnamurthy Shyam, PH.D., came across a chemical reaction that he thought might be adaptable to the design of a new series of antitumor agents. He brought his idea back to the laboratory of Alan C. Sartorelli, PH.D., the Alfred Gilman Professor of Pharmacology, where Shyam was a postdoctoral associate and is today an associate research scientist.

Sartorelli urged Shyam to follow his hunch. “If we knew what was going to happen ahead of time,” says Sartorelli, “it would be trivial. I want people to have a chance to invent.” Shyam synthesized a compound that targeted DNA and tried it on five mice transplanted with a leukemia. Two were cured, but three suffered rapid toxic—and fatal—side effects. Shyam continued synthesizing compounds in this family. Three years later Philip G. Penketh, PH.D., now an associate research scientist, joined Sartorelli’s labora-

It is becoming more and more difficult to develop drugs in an academic setting. The technology requires such a huge investment that academic labs can't compete with the Pfizers and Mercks.

—Joseph Schlessinger

tory as a postdoc and began to study how these compounds worked. Based on Penketh's findings, Shyam synthesized versions of the compound called "prodrugs," which reduced host toxicity. One of these drugs was selected for clinical trials.

Today the compound, VNP40101M, is being tested in humans by Vion Pharmaceuticals, a New Haven-based biotechnology company that Sartorelli and outside investors founded in 1993. The data from the Phase I clinical trials appear promising. "If this agent works in refractory [drug-resistant] tumors," says Shyam, "that would be a great breakthrough." Two decades after Shyam's hunch, it will still take a great deal of luck for the drug to gain approval from the Food and Drug Administration (FDA). Animal studies and even early human studies often raise hopes that later, larger trials dash. According to Sartorelli, "The chances of a compound succeeding are very, very slim." Still, Shyam is pleased. "Many scientists," he says, "spend a lifetime without getting a drug into the clinic."

A mix of old and new

Yale pharmacologists have, over the years, achieved remarkable successes by following their hunches. In the 1940s the department produced the first anticancer drug, nitrogen mustard, to treat lymphoma. In the 1950s the first antiviral agent was developed at Yale. The work of Paul Greengard, PH.D., on molecules that regulate metabolism led to his Nobel Prize in 2000.

Now the trend in pharmacological research is to move away from serendipity and happenstance. Science and industry are looking to evidence and statistics, rather than hunches, to lead them to successful drug discovery. Automated, industrial-scale analysis of compounds—so-called high-throughput screening—is the norm.

"It is becoming more and more difficult to develop drugs in an academic setting," says the pharmacology department's new chair, Joseph Schlessinger, PH.D., also the William H. Prusoff Professor of Pharmacology. "The technology requires such a huge investment that academic labs can't compete with the Pfizers and Mercks."

Moreover, there are fewer and fewer of what Schlessinger calls "classical pharmacologists" such as Prusoff, who discovered the first antiviral medication, idoxuridine, and codiscovered the AIDS drug Zerit. Rare is the individual today

who possesses advanced chemistry skills, knowledge of molecular biology and a "nose" for sleuthing out the recipe for a compound that can hit a disease target without harming the patient.

Recognizing this new landscape, Yale has taken several steps that embrace new approaches while coexisting with the old. This fall Yale is celebrating the completion of a four-story extension to Sterling Hall of Medicine's B Wing, as well as two floors of renovated laboratories in the original B Wing. Most of that space is for Department of Pharmacology faculty. (A gift from Bristol-Myers Squibb included \$2 million to help defray part of the construction costs.) In 2001, the department recruited Schlessinger from New York University, along with his wife, Irit Lax, PH.D., an assistant research scientist in pharmacology. Schlessinger, an expert in cell signaling and founder of two biotech companies, was charged with reshaping the department by hiring seven new full-time faculty members to complement the department's 14 full-time members and 16 others with secondary appointments. Discussions have also been under way for establishing a quasi-independent unit, to be known as the Center for Drug Discovery, which would seek to increase Yale's chances of finding industrial markets for its benchside discoveries.

In addition, Yale is seeking partnerships with industry over and above the traditional licensing of patents and formation of biotech firms. The international drug company Pfizer is building a \$35 million center for clinical trials near the medical school. Although the unit will focus on testing Pfizer compounds in humans and will draw heavily on Yale's strengths in magnetic resonance and other imaging techniques, including PET scanning, in research, Yale faculty also will have opportunities to study Pfizer's library of compounds.

Within the Yale campus, pharmacologists can also turn to colleagues in the Department of Chemistry on Science Hill for assistance. The former chair of that department, Andrew D. Hamilton, PH.D., now Yale's deputy provost for science and technology, served on the committee that recruited Schlessinger to Yale. He notes that several laboratories, including his own, collaborate with pharmacologists at the medical school. "Chemistry teaches us about biology," he says, "and biology in turn teaches us about chemistry. We can use this increased knowledge to find novel strategies for disrupting biological targets."

Adopting “guerrilla tactics”

Schlessinger, once a captain in the Israeli army, says that the pharmacology department “should adopt creative guerrilla tactics” as it seeks a role for drug discovery efforts within the academic setting. Rather than having laboratories focus on the costly search for promising compounds, he favors “target discovery,” studies of the intracellular pathways, genes and proteins that influence disease states and lend themselves to modulation by drugs. Those high-value findings can then be licensed to outside entities, when possible, for their use in high-throughput screening of compounds.

Drug discovery at that point becomes what Schlessinger terms “a scientifically trivial step” more appropriately undertaken in an industrial setting. The medical school should instead, he contends, “explore the mysteries of nature, digging and exploring where you know nothing, where you’re in complete darkness.” Unlike pharmaceutical companies, which must be concerned with the size of the market, says Sartorelli, “We don’t care what the size of the market is for our discoveries.”

Industry already values Yale’s strengths in pharmacology and other drug-discovery-related fields. “The department’s knowledge base—especially strong in the areas of neuropharmacology and chemotherapy—and Yale’s reputation as a world leader in imaging technologies played a major part in Pfizer’s decision to locate the clinical research unit in New Haven,” says Diane K. Jorkasky, M.D., vice president of clinical sciences at Pfizer.

Partnerships between Yale and pharmaceutical companies could help diminish the huge risks of taking on new discoveries for development. Bringing new treatments to patients has proven increasingly difficult in recent years, despite the wealth of recent discoveries about genetics and gene targets. Industry figures show that only one in 5,000 compounds registered with the FDA for testing is ever approved. The costs—of manufacturing the drug, establishing study centers, recruiting patients and collecting data—for compounds that fail are astronomical. At its earliest stages, a clinical trial with fewer than 50 patients can cost between \$2 million and \$4 million. Later-stage trials with large numbers of patients can cost many times that. When the price of those failures is figured into the cost of a single success, by some estimates the average drug now costs more than \$900 million to reach patients.

Department of Pharmacology decade by decade

1940s

- Department of Pharmacology founded with William Salter as the first chair.
- Discovery of first anticancer agent, nitrogen mustard, for treatment of lymphoma; demonstration of its effectiveness and the development of drug resistance by Alfred Gilman, Louis Goodman and Gustaf Lindskog.

1950s

- Discovery of first antiviral agent, IUdR, for the treatment of ocular herpes, a major cause of blindness, by William Prusoff.
- Arnold Welch becomes chair and develops first biochemically oriented pharmacology department in the country, steering the field away from a physiological approach.

1960s

- Work by Joseph Bertino on mechanism of action of antifolate chemotherapeutic agents which contributed to use of methotrexate, an anticancer agent still in wide use.
- Floyd Bloom and George Aghajanian pioneer electron-microscopic studies of the monoamine neurons in the central nervous system which underlie anxiety, depression and other psychiatric disorders.
- Nicholas Giarman and Daniel Freedman show that LSD alters the function of serotonin neurons, providing a connection between this neurotransmitter and psychosis.
- Robert Roth and Giarman discover that the central nervous system depressant gamma hydroxybutyrate is a naturally occurring endogenous brain metabolite that influences the function of dopamine neurons.
- Murdoch Ritchie recruited as chair, bringing with him two full professors, Paul Greengard and William Douglas.



TERRY DAGRA DI

Joseph Schlessinger, once a captain in the Israeli army, says that the pharmacology department “should adopt creative guerrilla tactics” as it seeks a role for drug discovery efforts within the academic setting.

Despite the averages, Yale enjoys an enviable record of success. Several breakthrough compounds have been discovered at Yale, and Yale and its pharmaceutical partners have one compound on the market and 10 in clinical trials. Few of the largest pharmaceutical companies can boast a comparable “pipeline” of drugs in development. For instance, Bristol-Meyers Squibb, the firm that markets Zerit and one of the world’s largest pharmaceutical corporations, lists 10 compounds in clinical development.

While making money may not be the goal of Yale scientists, few areas of investigation in the medical school have as much value for outside business entities or as much potential to bring additional revenue to the school. Returns from drug sale royalties have proven a great help to Yale. For several years, Yale received around \$40 million annually in royalties from sales of Zerit. That money helped fund research and facility expansion. Outright sale of all rights to the drug in 1999 to a trust created by Royalty Pharma AG helped to finance construction of the new Anlyan Center for Medical Research and Education at 300 Cedar Street.

Finding targets

In his efforts to reshape the Department of Pharmacology, Schlessinger has begun hiring faculty who will focus less on classical pharmacology and more on molecular biology, he says, “defining targets and analyzing processes which occur in cells.”

Ya Ha, PH.D., an assistant professor who joined the faculty in 2002, typifies the new generation of academic pharmacologists. A crystallographer, he spends much of his time modeling three-dimensional molecular structures. He seeks targets for chemical intervention in the processes that form the plaque in the brains of Alzheimer’s patients that gums up and eventually kills their neurons, causing memory loss and dementia. To model those structures he crystallizes key proteins linked to plaque formation in the brain tissue of Alzheimer’s patients. He then brings these protein crystals to a synchrotron in Brookhaven, N.Y., where he shoots them with intense X-rays. The scattered X-rays are recorded, and computer workstations combine the data into a three-dimensional molecular model of the protein he is studying. He posts the images to the scientific community as part of the Protein Data Bank (www.rcsb.org/pdb), an international repository for protein-structure data.

1970s

- Alan Sartorelli elucidates the concept of bioreductive activation of pro-drugs by oxygen-deficient (hypoxic) tumor cells.
- Sartorelli and Sara Rockwell demonstrate preferential kill of hypoxic tumor cells by mitomycin C, leading to clinical use of drug with ionizing irradiation in treatment of cancers of the head and neck.
- Ritchie provides seminal contributions to the understanding of the mechanism of action of local anesthetics.
- Greengard describes the function of the cyclic nucleotides, molecules regulating metabolism, which ultimately leads to his being awarded a Nobel Prize in Physiology or Medicine.
- Discovery and characterization of dopamine autoreceptors by Aghajanian, Benjamin Bunney and Roth lead to the development of dopamine autoreceptor-selective drugs for the treatment of psychiatric disorders.
- Douglas conducts pioneering work on the essential role of calcium in “stimulus-secretion coupling” in the release of hormones and neuromodulators.

1980s

- Discovery of Zerit (d4T) for the treatment of AIDS by Prusoff and Tai-Shun Lin.
- Aghajanian, Herbert Kleber and Eugene Redmond show clonidine, an antihypertensive drug, is useful in treating opiate withdrawal.
- Discovery of cyclophilin, the receptor for the important immunosuppressive agent cyclosporine, by Robert Handschumacher.
- Studies by Redmond and Roth on MPTP in monkeys lead to a primate model of Parkinson’s disease and the development of neural grafts, gene therapy and stem cells for treatment of this disease.

Our faculty members need to be catalysts whose work pushes the frontiers of science and helps translate science into treatments.

—Carolyn Slayman

Ha uses the data to identify molecular sites to which small compounds could bind tightly. From there, he will try to design a compound that will inhibit the processes that lead to Alzheimer's disease. "The three-dimensional molecular model will help design a molecule that could serve as a possible drug," he says. "That doesn't mean it is a good drug. That has to be tested in a classical pharmacological context." He turns to colleagues for that help in testing the compound on cells and then in animals. "The integrated approach," he says, "is the strength of this department."

One of the people Ha turns to is Yung-Chi Cheng, PH.D., the Henry Bronson Professor of Pharmacology, who collaborates with a broad range of colleagues and has had a hand in a wide range of discoveries. Before coming to Yale from the University of North Carolina in 1989 he identified two compounds now in clinical use, one used for treating cytomegalovirus and another for treating hepatitis B virus. His laboratory has six other compounds in clinical trials, and clinical testing should begin on two others this year.

Despite his extraordinary success rate, Cheng has adapted to the changing nature of pharmacology studies. He now uses data derived from structural biology, proteomics and genomics to help him tease apart biological processes and find the optimal chemical to alter them therapeutically. "For many years we were hypothesis-driven," he says. "Now we are also taking an information-driven approach. You ask your computer to help you out. That's critical for the future of drug discovery."

Cheng has long drawn on input from other scientists and clinicians in the Developmental Therapeutics Program, which he co-directs. Operated by the Yale Cancer Center, this consortium of 30 faculty members in multiple disciplines focuses on the discovery of new compounds for treating cancer and viruses that have strong associations with the development of cancer. While Cheng's own research leads to the discovery of compounds, turning them into drugs requires testing in patients. "The Developmental Therapeutics Program is really translational between the clinical sciences and basic sciences. It works both ways," he says, providing him with insights from the clinical use of drugs into ways to discover better compounds. Program co-director Edward Chu, M.D., professor of medicine (oncology) and pharmacology, directs the Cancer Center at the VA Connecticut Healthcare System in West Haven. "We can develop biomarkers to see if

a molecule is hitting the target you intended," he says. "The only way to do that is by scientists working hand-in-hand with clinicians."

Although Yale can provide evidence of a drug's potential effectiveness, internal efforts at Yale by themselves will never bring a drug into widespread clinical use. "You need a partner," says Chu. He and others in the Developmental Therapeutics Program work closely with private industry to test Yale-discovered and other compounds which have been licensed to pharmaceutical companies.

Even industrial entities must attempt to reduce the risks they face in developing compounds, often choosing not to study compounds that appear to have little promise for success in humans. That is one of the major reasons few compounds ever advance to that stage of development. Discussions have been under way at Yale for several years to help improve the likelihood that university-discovered compounds will reach patients and that molecular targets for drug discovery will prove of value to industry. After arriving at Yale in 1997 from the FDA, where he had been the commissioner, former Dean David A. Kessler, M.D., encouraged the formation of a committee to consider the creation of a Center for Drug Discovery. The center would, according to Carolyn W. Slayman, PH.D., Sterling Professor of Genetics and deputy dean for academic and scientific affairs, "sit at the boundary between the academic and commercial worlds." Such a center would take Yale discoveries and develop them further to create increased value for partners. "If you want to do more than convince industry to make a major investment," she says, "the more information you have that a drug will work, the more likely faculty research will progress right through to the clinic."

Besides increasing the likelihood of discoveries reaching patients, it could provide Yale with a means of tackling discovery projects that the pharmaceutical industry might avoid for business reasons. For instance, drugs for diseases that industry deems unlikely to generate enough revenues or that might compete with their existing drugs could be developed. Cheng says, "There is a big difference between Yale and the pharmaceutical industry. We are not driven by product but for the common good without profit in mind." Faculty and administrators continue to discuss the creation of the Center for Drug Discovery while Schlessinger and colleagues reshape the department. "We need instrumenta-

tion and a facility staffed by chemists and biologists who will carry Yale discoveries to the next step," says Slayman. "Pharmacology is not an inward-bounded world. Our faculty members need to be catalysts whose work pushes the frontiers of science and helps translate science into treatments."

Yale's move away from pure serendipity in the pursuit of therapies should increase the chances of success and help improve patients' lives. It should also push science in ways that industry cannot or will not. "Studies may not help pharmaceutical companies to market their products and may even damage their products' profit," says Cheng. "It would be a mistake to leave industry solely responsible for pharmaceutical science." Pharmacology department Chair Schlessinger agrees: "We have the capacity to take on more risky projects at the forefront of science, to define molecular paradigms and involve technologies that need to be developed. If we find drugs," concludes Schlessinger with a shrug, "that would be fine." **YM**

Marc Wortman is a contributing editor of *Yale Medicine*.

1990s

- Sartorelli's laboratory discovers two anticancer compounds, Triapine and VNP40101M, currently in clinical trials.
- Yung-Chi Cheng discovers one anticancer and five antiviral agents, currently in clinical trials.
- Robert Innis develops transmitter-specific SPECT and PET imaging probes to study integrity of brain dopamine systems in the central nervous systems of humans and monkeys.
- Leonard Kaczmarek's pioneering work on potassium channels reveals how a certain type of potassium channel underlies the fidelity of firing of auditory neurons.
- Bunney shows that dopamine cell depolarization blockade is a useful model for predicting the therapeutic efficacy of antipsychotic drugs.
- Eric Nestler conducts studies of molecular mechanism of drug addiction and dependence, identifying delta FosB as a molecular switch for addiction.
- Ronald Duman's studies on synaptic plasticity and mood disorders provide insight for development of novel therapeutics.
- Roth develops primate model of cortical dopamine deficiency and enduring cognitive dysfunction useful in study of drugs for cognitive disorders.
- James Howe describes fundamental properties of single glutamate-gated ion channels (which underlie most excitatory transmission in the brain).

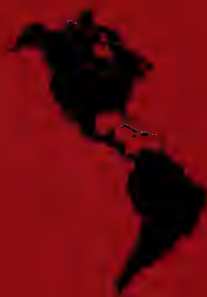
2000s

- Joseph Schlessinger becomes department chair and oversees significant expansion.
- Tamas Horvath, Redmond and Roth demonstrate that coenzyme Q is neuroprotective in the monkey MPTP model of Parkinson's disease.
- Marina Picciotto's work using genetically altered mice helps in understanding the basis of nicotine addiction.

Sources: Robert Roth, Alan Sartorelli and William Sessa

When a global outbreak
becomes local

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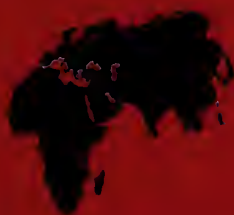


SA

For the shoe-leather work of public health,
Connecticut officials seek help from Yale's
disease detectives.

By Jennifer Kaylin

Illustration by Tomasz Walenta



RS



James L. Hadler, M.D., M.P.H. '82, like public health officials around the country, spent last winter reading with only mild concern about an atypical pneumonia outbreak in south China. But then something happened to catapult the illness from “something that bears watching” to an urgent priority.

A student from the University of Connecticut had flown to Germany in March on an airplane with a doctor from Singapore who had been diagnosed with the potentially lethal new illness called Severe Acute Respiratory Syndrome (SARS). Even more alarming, the student was running a fever but continued to attend classes.

“We were facing the possibility of a SARS outbreak on the largest campus in Connecticut,” says Hadler, chief epidemiologist for the state Department of Public Health and associate clinical professor of epidemiology at Yale. “And we had two prominent basketball teams playing in national tournaments. If those players had been exposed, they could have spread the disease across the country.”

Working with UConn officials, Hadler and his staff immediately went to work identifying everyone who attended classes or had contact with the potentially infected student. Classmates and professors were notified and examined if they developed symptoms of fever or cough. Blood samples from the student went to the Centers for Disease Control and Prevention (CDC) for testing. Miraculously, nobody developed a SARS-like illness. The blood test results for the student on the plane returned negative for the SARS-related coronavirus.

While the outcome could not have been brighter for Connecticut, the incident raised questions in the minds of researchers at the CDC who were working frantically to unravel the SARS mystery. If the student had direct exposure to someone with the illness, why didn't he get infected? And if SARS isn't transmitted through face-to-face contact, then how is it spread? The CDC researchers decided to look more closely at how the infection might or might not spread on an airplane, and because Connecticut was the first state to deal with a large-exposure scare and had several persons who had shared a flight with someone with SARS, they decided that was one place to start.

The monumental task of getting airplane manifests and contacting every Connecticut resident who had been on a

flight with a confirmed SARS sufferer was too much for a state health department already overburdened with other public health emergencies, most notably bioterrorism preparedness, administering smallpox vaccines and dealing with suspected SARS cases—not to mention the more prosaic task of tracking less novel diseases that cause significant mortality and morbidity. So Hadler turned to the Connecticut Emerging Infections Program (EIP) at Yale for help.

The federally funded program is housed in a suite of offices in downtown New Haven and staffed by the Department of Epidemiology and Public Health. A joint program of the state health department and the CDC, it was created in 1995 in response to an Institute of Medicine report that found that the nation was not equipped to deal with infectious disease outbreaks, partly because the infrastructure that had once been in place had been decimated by budget cuts and eroded by complacency.

“There was a degree of hubris involved,” says James I. Meek, M.P.H., associate director of the EIP at Yale. “The attitude was ‘We have antibiotics now, so everything is under control.’ Then, of course, AIDS burst our bubble.” Add to that a resurgence of tuberculosis, antibiotic-resistant bacterial infections, changing habitats, a global food supply and worldwide travel, and Meek says it’s safe to say that “infectious diseases are going to be a continuing threat to us.”

Connecticut’s EIP is one of 10 such programs around the country. They are run by state health departments, but some, like Connecticut’s, have links to academic institutions. The Yale staff works with the state health department to conduct population-based surveillance and research. “We’re basically disease detectives doing shoe-leather epidemiology,” Meek says.

When the Yale researchers were contacted by the state to help with the SARS outbreak, they began working with the CDC. The CDC had by then secured the cooperation of the airlines and reviewed its lab results to identify which flights had confirmed SARS cases. It took two months before they actually started contacting passengers, so Meek says nobody was too alarmed when a health worker phoned to discuss their potential exposure to SARS. “Once we explained to them that if they were going to get sick they’d already be sick, everyone was very cooperative and happy to help.”

EIP epidemiologists contacted 15 Connecticut residents who were on a flight with a confirmed SARS case and interviewed them about their seat location and movements on the plane as well as their post-travel health. They also obtained blood samples to see whether the passengers had developed antibodies to the SARS coronavirus, which would indicate that they’d been exposed and transmission had occurred. Meek says the goal is to learn more about the transmission dynamics of the virus and to gain a better understanding of how much asymptomatic illness may be present.

A global prescription for a global outbreak

If the SARS outbreak has taught us anything, it is how interconnected the world is and how vital is the need for global cooperation on public health issues.

So says Ilona S. Kickbusch, PH.D., head of the division of global health at the School of Public Health. “This isn’t just an issue for developing countries,” she says. A case in point is how, in a matter of weeks, travelers spread the disease from China’s Guangdong province throughout Asia, Europe and North America. “When the SARS outbreak spread to Canada we saw just how close to home it really was.”

Although it falls largely to the World Health Organization (WHO) to provide international public health oversight, prior to the emergence of SARS, Kickbusch says, the agency’s hands were tied economically and statutorily. The WHO budget has been stagnant at \$800 million a year (less than it takes to run the average hospital in the United States) for the past 15 years. (It has another “voluntary budget” of about \$800 million, but that money must be spent on projects identified by the contributing countries.)

What’s worse, if an outbreak occurred, the WHO had to get permission from the host country

to investigate. “For political and economic reasons, some countries weren’t as compliant as one might wish,” she says. Also, countries only had to report named illnesses, not atypical syndromes, so a new illness like SARS could go unreported.

As a result of SARS, though, the World Health Assembly, WHO’s governing body, voted to give the WHO more latitude in responding to global health threats. A resolution adopted by the assembly in May requests that WHO consider information about epidemics from nongovernmental sources and conduct on-the-spot studies within affected countries to ensure that control measures are adequate to prevent international spread of the syndrome. Kickbusch says that’s a good start, but more must be done, including intensified global surveillance and laboratory work, funded in part by public/private initiatives.

Kickbusch would also like to see more well-trained public health professionals working at the ground level, and she says there need to be clearly stated consequences, such as economic sanctions, for those countries that withhold important public health information or fail to act as responsible global citizens.

“It’s a matter of global security in the widest sense,” she says.

—Jennifer Kaylin



JOHN CURTIS

James Meek, left, and Robert Heimer led a team of epidemiologists that tracked down Connecticut residents who had been on a flight with a confirmed SARS case. Their goal is to have a better understanding of the SARS virus and how it is transmitted.

One obstacle to getting meaningful results is the accuracy of people's memory. "Recall is always a problem with epidemiological research, and after two months it's going to be very limited," says Meek. "Still, it was a 14-hour flight, so we found their recall was pretty good."

Robert Heimer, M.S. '80, PH.D. '88, associate professor of epidemiology and pharmacology, is in charge of the program. "It's not glamorous work, but it's necessary work," he says of the EIP, which has an annual budget of roughly \$1.5 million and a staff of 12 to 14 full-time epidemiologists and lab technicians. Three physicians also work part time as clinical consultants and principal investigators for some studies. The researchers all have ongoing projects, such as studies of food- or tick-borne illnesses, but they can be temporarily reassigned if there's an emergency.

In the case of SARS, for example, the airplane study was just one part of their mission. Researchers also had to turn their attention to the Yale campus to attend to another important facet of their jobs: education. With its population of international students and faculty, many of whom travel frequently to Asia, the Yale community was understandably jittery. "There was a good deal of anxiety and misunderstanding in the beginning," says Michael H. Merson, M.D., dean of public health.

Working with university officials, Merson joined with other Yale physicians to hold three briefings around campus and post advisories on a website. "We did our best to keep people informed and to set sound policies," such as recommending that graduation go forward and that guests from China be allowed to attend, he says.

As the program's director, Heimer understands the fear and misunderstandings a new infection can generate. Occasionally a disease comes along with great destructive force, as happened after World War I when an influenza pandemic killed 25 million people worldwide. Heimer said that with SARS the initial fear was that it could be that kind of easily transmittable, upper-respiratory infection. But once that turned out not to be the case, he thinks the focus should have shifted from SARS, which has infected 8,500 people and cost an estimated \$30 billion so far, to other public health threats, such as HIV, which infects 15,000 people a day.

"Once we knew what it was, that it wasn't an influenza thing, and we knew how *not* to get infected, we should have

stopped worrying, and the media and the public should have focused on more pressing issues," Heimer says.

Meek and his colleagues agree. "All anyone at the soccer field wants to talk to me about is what's going on with SARS," says researcher Ruthanne E. Marcus, M.P.H., a lecturer in epidemiology. But the EIP also tracks many other illnesses that pose a far more immediate threat to most Connecticut residents. "Everyone thinks of the biggies, like AIDS, SARS and West Nile, but there are a lot of run-of-the-mill infectious diseases out there," Marcus says. For example, she focuses on food-borne pathogens, such as *E. coli* and *Salmonella*, which are a growing concern because of the number of meals eaten in restaurants and America's growing appetite for imported foods.

Chronic liver disease, tick-borne ailments and unexplained illnesses and death are other health issues EIP researchers monitor. They predict that as the population ages and as Connecticut residents choose to live in wooded environments that bring them into closer contact with ticks, rodents and other potential disease carriers, emerging infections will become an increasingly important health care specialty.

If SARS has served as a distraction, the even larger recent diversion of resources has been to bioterrorism. Far from seeing this as undermining their work to cope with less headline-grabbing health threats, though, epidemiologists see the focus on bioterrorism as a potential boon for the whole field of emerging infections. The recent anthrax scare and the ongoing fear of bioterrorism have contributed to a heightened awareness about infectious diseases in general, they say, and an understanding within the public health community of the importance of a well-supported public health infrastructure to deal with them. It will be another hurdle to get the public to focus on public health and not be sidetracked by the next new thing in emerging infections.

Still, for researchers in the EIP, tracking down the causes and transmission dynamics of elusive illnesses, whether new and emerging or old and resurgent, comes down to creative, grass-roots detective work and a mind open to the unexpected. As Meek says, "When most people hear the pounding of hooves, they look for horses. As epidemiologists, now we also have to look for zebras." **YM**

Jennifer Kaylin is a freelance writer in New Haven.

SARS remains a moving target

The disease that emerged in Asia late last year, SARS, is a moving target, according to Vincent J. Quagliarello, M.D., HS '81. "Every day," he told an audience at this year's medical school reunion, "there is something new reported in *The New York Times* from somewhere around the world."

What is known about SARS, said Quagliarello, professor of medicine and clinical director of the Section of Infectious Diseases, is this: it is a previously unrecognized member of the well-known coronavirus family which causes about a third of the cases of the common cold. It was first reported last November in China and, in very short order, swept across three continents. Infections travel through close person-to-person contact, mostly among family members or health care workers. Symptoms include fever, headache, myalgias, a dry cough and shortness of breath. Although only about 8,500 people worldwide have been infected,

SARS has a mortality rate of 9 percent and it has provoked fears around the world. The resulting economic impacts have been devastating for Asia and Toronto. China and South Korea have lost about \$2 billion in tourism, retail sales and productivity. Hong Kong, Taiwan and Singapore estimate losses at \$1 billion each.

Major league baseball players were advised to avoid crowds in Toronto, where thousands of people were quarantined. All over Asia people donned protective face masks. In Singapore, Quagliarello said, the Catholic Church suspended confessions and granted a general forgiveness.

SARS, he continued, is a sign of globalization. "Within weeks SARS has spread over three continents to cause a devastating impact on our societies," he said, adding that there is a bright side. "At the same time, however, investigators from over 10 countries have collaborated to identify the virus, screen for potential antiviral therapies and initiate vaccine development."

—John Curtis



A matter of taste

By Peter Farley

Photographs by Terry Dagradi



Debunking myths and shattering stereotypes have long been part of **Linda Bartoshuk**'s career path.



It seems fitting that in order to reach the Cedar Street laboratory of Linda M. Bartoshuk, PH.D., a visitor passes through a motley and aromatic gantlet of outdoor food carts offering some of Earth's most piquant cuisines—Thai, Mexican, Szechwan. These vendors owe their livelihood to the never-ending fascination and pleasure humans derive from the sense of taste and, in her own way, so does Bartoshuk.

Bartoshuk is one of the world's foremost authorities on the sense of taste, best known for her discovery in the early 1990s that one in four people is a "supertaster." These individuals "live in a neon taste world," she says, where sweet is far more cloying, and bitter more astringent, than for most of us. But this finding is just a capstone of 40 years' work devoted to unraveling the most enigmatic of the human senses, a body of research honored in April by Bartoshuk's election to the National Academy of Sciences.

Along the way, Bartoshuk has relished the demolition of scientific dogma—she proved that the sweet/bitter/salty "tongue map" found in textbooks is pure hokum, for example—but her career trajectory has been most decisively shaped by a dogged refusal to accept discrimination at the hands of science's male establishment.

As a young girl in the tiny prairie town of Aberdeen, S.D., Bartoshuk devoured science fiction novels and dreamed of becoming an astronomer; she spent long wintry nights in vacant lots learning the constellations, armed only with star maps and a flashlight. In high school, she was the only girl in her physics, chemistry and trigonometry classes.

"To say I was a nerd ... would be an understatement," she says unabashedly, still looking the part with closely cropped hair, utilitarian eyeglasses and monochromatic clothes that seem pointedly unchic. Her guidance counselor cautioned her that a small-town upbringing might make the shift to college life difficult, but Bartoshuk, whose forthright speech retains the Midwestern cadence of her youth, insists that no one in Aberdeen ever discouraged her from pursuing science because she was a girl.

Bartoshuk was well into her astronomy course work at Minnesota's Carleton College when professors told her that her chosen field was hostile to women, and that it would be nearly impossible for her to obtain a position at an observatory. Shock soon gave way to anger, and when she learned that the psychology department would accept her math and science credits, she immediately changed majors.

PREVIOUS PAGES Cedar Street at lunch hour is a sensory delight, with cuisine from Mexico, China, Thailand, India and the Middle East available to all palates. During 40 years of research, Linda Bartoshuk has shattered myths and become one of the world's leading authorities on taste.

She had abruptly abandoned a lifelong ambition, but before long Bartoshuk found an unexpected bridge between astronomy and her newly adopted field.

Beginning in ancient Greece, astronomers have used magnitude scales to compare the perceived brightness of stars; in modern times such scales were used to determine the size of the universe. Bartoshuk was thrilled to discover that magnitude scales also formed the core of psychophysics, the rich and rigorous branch of psychology that deciphers the relationships between the physical properties of sensory stimuli and the subjective sensations they evoke. Psychophysical methods have been the foundation of her research ever since.

Her undergraduate advisor had trained with the distinguished taste researcher Carl Pfaffmann, PH.D., at Brown University, and he helped Bartoshuk secure a place as a graduate student in Pfaffmann's lab. On her arrival, Pfaffmann told her outright that he didn't want women there, and she is convinced that the first experiment he assigned her was expressly designed to fail. In any case, her male lab mates eventually convinced Pfaffmann that he was being unfair, and she went on to become a creative and productive student.

Bartoshuk eventually moved to Yale, and spent 20 prolific but trying years at the Yale-affiliated John B. Pierce Laboratory, an interdisciplinary research institute. In an autobiography published in a collection of reflections of eminent women, she wrote that "sexism started at the top and trickled down" at Pierce in those days. In an incident she calls typical, the lab's then-director stopped a newly pregnant Bartoshuk in the hall to tell her that he would be sorry to see her go. Puzzled, she said that she planned to continue her research unabated. His reply: "Women like you are going to destroy Western civilization."

In 1990, Bartoshuk found a safe haven as a professor in the Department of Surgery's section of otolaryngology, where her lab, pleasantly cluttered with stacks of scientific articles and bedecked with kitschy plastic tongues and chili peppers, remains today.

At just about the time of her move to the School of Medicine, a peculiar circumstance threw Bartoshuk and her mentor Pfaffmann together once more. Pfaffmann was suffering from Ramsey Hunt syndrome, which had damaged the sense of taste on the left side of his tongue. Pfaffmann had told his graduate students that he would

gladly serve as a research subject if an illness ever compromised his sensory function. Now he had his chance, and he called Bartoshuk.

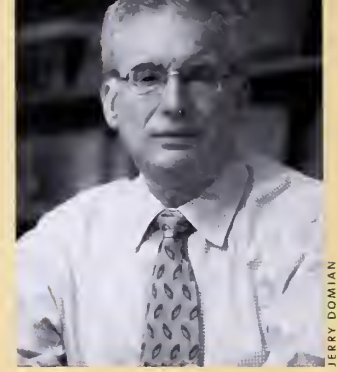
Experiments with Pfaffmann produced valuable new data, but Bartoshuk says that the most enduring outcome of the work is personal: the intimacy of the lab gave her the courage to ask Pfaffmann about his biased behavior during her graduate school years. In reply, he told her that he never thought of her as anything but a gifted student, and she was content to leave it at that. Bartoshuk and Pfaffmann planned to publish a full account of their findings, but he suffered a stroke shortly thereafter and died in 1994. "I haven't had the heart to write it up," she says.

Despite the uphill battles she has fought, Bartoshuk does not seem to harbor resentment about the course of her career. Instead, at 64, she displays the unbridled enthusiasm of a freshly minted graduate student. As Jeremy M. Wolfe, PH.D., a longtime friend who studies the visual system at Harvard Medical School, puts it, "The great thing about talking to Linda is that the most exciting thing in the world is whatever she's working on *right now!*"

When asked whether she ever wonders what her life would have been like if she had worked in some other field, Bartoshuk says that she's had little time to consider it. "Studying taste has been like following a trail of peanuts. As soon as I've picked one up, there's another one waiting." But the curiosity that propelled her out of Aberdeen soon surfaces. "My life looks to me like a series of accidents, which worries me," she says. "What about all the accidents I didn't have?" **YM**

Peter Farley is a freelance science writer based in Boston.

Richard Edelson is heading the Yale Cancer Center as the university and Yale-New Haven Hospital enter a new era of collaboration and growth.



JERRY DOMIAN

New hand on the Cancer Center tiller

Richard Edelson sees growth ahead for one of the country's oldest and proudest cancer research facilities.

When Richard L. Edelson, M.D. '70, came to Yale in 1986 as professor and chair of the Department of Dermatology, the Yale Cancer Center (YCC) was just a dozen years old and had fewer than 185 faculty members in its ranks. Edelson, a physician-scientist who had developed a treatment for a rare form of lymphoma, was one of them. By July 1 of this year, when Edelson took office as its fifth director, the Cancer Center had grown enormously. It now has 342 members from more than a dozen medical school departments and oversees 18 core facilities funded by a \$2.1 million annual grant from the National Cancer Institute (NCI). It helps draw \$118 million in cancer-related research funding to Yale investigators yearly, making it one of the more vigorous cancer research engines in the country.

Edelson, 58, credits that progress to two of his predecessors in the director's office, pharmacology pioneer Alan C. Sartorelli, Ph.D., and former NCI Director Vincent T. DeVita Jr., M.D., HS '66, as well as current YCC Deputy Director José Costa, M.D. "They did the heavy lifting," Edelson said during an interview in mid-July. "Alan built the reputation the center enjoys today as a powerhouse in basic science and cancer pharmacology. And Vince, who is credited with having cured Hodgkin's disease and is essentially the father of combination chemotherapy, has really

laid out the framework for developing the center into a clinical powerhouse."

Therein lies Edelson's main challenge. Despite a worldwide reputation and key contributions to cancer research, Yale historically has not been able to draw the desired volume of cancer patients, especially for all-important clinical trials of new therapies. It was among the first centers designated a Comprehensive Cancer Center by the NCI, but until recently has not had the resources to meet all of its clinical goals. As a result, rumors abounded last year that the center might even lose its NCI comprehensive designation when the most recent five-year grant expired on June 30.

Instead, the NCI agreed to extend funding for a year. The university has agreed to fund the core facilities for two additional years, if necessary, while the center builds up steam and overcomes some of its growing pains.

Edelson said that is already happening. Both the university and Yale-New Haven Hospital have pledged resources, and the director predicted a new era of collaboration, cooperation and growth.

"I'm convinced we have the opportunity to develop field-shaping programs in every important area of cancer care," said Edelson, who will remain chair of dermatology but is stepping down as deputy dean for clinical affairs, a position he has held for the past three years. "We have the people, we have the setting and we have the science."

To solve a nagging space crunch in its patient areas, Edelson negotiated the immediate renovation of 25,000 square feet of clinical space in the Yale

Physicians Building and elsewhere on campus, close to doubling the existing clinical facility. The long-term solution to the space problem, he said, will take the shape of a new Cancer Center building of approximately 170,000 square feet, to be open by 2007. Several possible locations around the medical center are under discussion.

One key to growth, Edelson believes, is rebuilding the Section of Medical Oncology, which is down in ranks but now has a new structure for appointments and promotions and a commitment to hiring new faculty. As part of his recruitment, Edelson gained approval to hire 18 to 24 new faculty members in cancer-related fields, about half of whom will be medical oncologists. "This will be the clinical engine that drives cancer care, and it is one of the best routes for new patients into trials," he said. Edelson is also exploring arrangements with cancer facilities outside Connecticut that would bring Yale discoveries to a wider public while increasing the number of patients available for Yale trials.

"I don't have the slightest doubt that we're going to quickly succeed here. If I did, I wouldn't have taken this job," Edelson said.

—Michael Fitzsosa

New appointments in provost's office place science in the spotlight

New appointments in the office of Yale Provost Susan Hockfield, PH.D., leave science and the medical side of campus well-represented in the upper echelons of the university.

Andrew D. Hamilton, PH.D., the Irénee duPont Professor of Chemistry and professor of molecular biophysics and biochemistry, has been named the deputy provost for science and technology. Bruce F. Carmichael, M.S.N, SC.D., former associate dean for resources and management at the School of Nursing and former executive director for major projects and facilities at the School of Medicine, is the new interim assistant provost for science and technology. Barbara A. Shailor, PH.D., director of the Beinecke Rare Book and Manuscript Library, has been named deputy provost for the arts.

Hamilton's area of focus includes the Faculty of Arts and Sciences departments in the natural sciences.

Carmichael will oversee the natural science and engineering departments. At the School of Medicine his major task was to oversee the initial stages of construction at the new Anlyan Center for Medical Research and Education.

Shailor will help to shape and implement policies for the Schools of Art, Architecture, Drama, Music and Divinity; the Institute of Sacred Music; the Departments of History of Art, Classics and Music; the Yale University Art Gallery; and the Center for British Art.

—John Curtis

A legend in the annals of Yale medicine returns, in person and on canvas

When new interns in the Department of Internal Medicine arrived in July 1964, little did they know that they would be the last group to be trained at Yale by Paul B. Beeson, M.D., then chair of the Department of Internal Medicine. A year and three months into their training, Beeson left for Oxford University. In May, nine of that last cadre of house staff gathered with Beeson, his family and members of the Department of Internal Medicine in the Historical Library for the unveiling of a portrait of the legendary physician. Beeson, who served as department chair from 1952 to 1965, specialized in infectious disease and discovered a class of proteins known as cytokines. In 1996 the medical service at Yale was named "The Beeson Medical Service" in his honor.

"No contemporary figure has had more influence on the way Western-trained doctors practice medicine than Paul Beeson," said John N. Forrest Jr., M.D., HS '67, who heads the Office of Student Research. "Paul Beeson was revered in medicine because he promoted those around him rather than himself, valued patients and the vocation of medicine rather than reputation and never forgot that treating sick people and training young physicians was a precious gift and responsibility."

"In his presence we all felt greatness," said Lewis Landsberg, M.D. '64, HS '70, now dean of the medical school at Northwestern University. "His humbleness stood as a sharp rebuke to the hubris of lesser men."

The portrait was accepted for the Department of Medicine by David Coleman, M.D., the interim chair of the Department of Internal Medicine. "The Beeson tradition and values continue to play a major role in the training of students and house staff," Coleman said. "This portrait will be a constant reminder of that influence." The portrait, painted by Vermont artist Richard Whitney, will hang in Fitkin Amphitheater.

—John Curtis



TERRY DAGRADI

Nine physicians who began their residencies at Yale under the tutelage of Paul Beeson returned to the medical school in May to honor their mentor.





Roland Baron



Alan Dardik



Elizabeth Bradley



Jorge Galán



Sonia Caprio



Thomas Steitz



David Cone

Researchers at the School of Medicine have received 13 grants from The National Alliance for Research on Schizophrenia and Depression (NARSAD) totaling almost \$780,000. NARSAD is a leading donor-supported organization funding worldwide research on brain disorders. The following researchers will each receive a two-year Young Investigator Award of approximately \$60,000: **Patrick B. Allen**, PH.D., assistant professor of psychiatry; **Vladimir Coric**, M.D., assistant clinical professor of psychiatry; **Carrol M. D'Sa**, PH.D., associate research scientist in psychiatry; **Naomi R. Driesen**, PH.D., associate research scientist in diagnostic radiology; **Wen-Jun Gao**, M.D., PH.D., associate research scientist in neurobiology; **Xingguang Luo**, M.D., postdoctoral associate in psychiatry; **Snezana M. Milanovic**, M.D., hospital resident; **Maria Mouratidis**, PSY.D., postdoctoral fellow in psychiatry; **Edward B. Perry**, M.D., assistant professor of psychiatry; **Samuel N. Sathyanesan**, PH.D., associate research scientist in psychiatry; **Gilles D. Tamagnan**, PH.D., assistant professor of psychiatry adjunct; **Christopher P. Turner**, PH.D., associate research scientist in pediatrics (endocrinology); and **Pieter Joost van Wattum**, M.D., PH.D., assistant clinical professor in the Child Study Center.

Roland E. Baron, D.D.S., PH.D., professor of orthopaedics and cell biology, received the Louis V. Avioli Founders Award from the American Society for Bone and Mineral Research at its 24th annual meeting in San Antonio in September 2002. This award is given for "fundamental contributions to bone and mineral basic research." Baron also received a Docteur Honoris Causa from the Université René Descartes in Paris in December 2002.

Elizabeth H. Bradley, M.B.A., PH.D. '97, associate professor in public health, is the first Yale researcher to be awarded the John D. Thompson Prize for Young Investigators by the Association of University Programs in Health Administration (AUPHA). The award, presented in June at the AUPHA national meeting, recognizes investigators for their contributions to research literature in the health services field. Bradley's work focuses on the quality of care provided to the elderly population.

A researcher who studies metabolic changes associated with obesity and type 2 diabetes has received the first fellowship at Yale from the newly established Bayer Endowment for Scholars in Medicine and Management.

Sonia Caprio, M.D., associate professor of pediatric endocrinology and a graduate of the Università di Medicina e Chirurgia in Naples, is interested in the prevention and treatment of type 2 diabetes among young people. "There is a growing and serious epidemic of childhood diabetes, especially among African-Americans and Hispanics," she said.

The \$2 million endowment from Bayer will fund a fellowship to be awarded each year to a faculty member making significant contributions to advances in medicine or health care management. In addition to supporting the work of the Bayer Fellow, the Bayer Endowment will foster interaction between Yale scientists and Bayer employees through lectures and conferences on topics of shared interest.

David C. Cone, M.D., associate professor of surgery (emergency medicine) and public health, was installed in January as secretary/treasurer of the National Association of Emergency Medical Service Physicians (NAEMSP). Cone has served on the NAEMSP board of directors since 1996 and is deputy editor of *Prehospital Emergency Care*, the organization's journal. The NAEMSP provides medical oversight and research leadership for out-of-hospital emergency care systems.

Alan Dardik, M.D., PH.D., assistant professor of surgery (vascular) at Yale and assistant program director of the department of surgery at St. Mary's Hospital, was awarded the Wylie Scholar Award in Academic Vascular Surgery by the Pacific Vascular Research Foundation in San Francisco in 2002. The \$150,000 multiyear award is presented to productive scientists with independent research programs in North America. Dardik studies the effects of the force of flowing blood on cells in the blood vessels.

Jorge E. Galán, PH.D., D.V.M., chair and Lucille P. Markey Professor of Microbial Pathogenesis and professor of cell biology, and **Thomas A. Steitz**, PH.D., Sterling Professor of Molecular Biophysics and Biochemistry, were elected in April as fellows by the American Academy of Microbiology. Galán was honored for his innovative use of microbial molecular genetics and molecular cell biology to further the understanding of how microbial pathogens communicate and interact with their animal hosts, and for his molecular genetic characterization of the *Salmonella* pathogen. Steitz's specialty is the study of the structures of proteins and nucleic acids to determine their biological function. His lab recently determined the atomic structure of a subunit of the ribosome.

Mark J. Gorman, M.D., assistant professor of neurology, was appointed director of the Acute Brain Injury/Stroke Program at Yale-New Haven Hospital in April. Gorman heads a coordinated multidisciplinary stroke team, which is aimed at diagnosing and treating stroke patients as rapidly as possible.

Jeannette R. Ickovics, PH.D., associate professor of epidemiology (chronic disease) and psychology, was elected as a fellow by the American Psychological Association (APA) for 2003. APA fellows are selected for exceptional and outstanding contributions to the research, teaching or practice of psychology. The APA is the largest scientific and professional organization representing psychology in the United States and is the world's largest association for psychologists.

Akiko Iwasaki, PH.D., assistant professor of epidemiology and immunobiology, received the 2003 Wyeth-Lederle Vaccines Young Investigator Award in Vaccine Development in October from the Infectious Diseases Society of America at its annual meeting in San Diego. She also received the Ethel F. Donaghue Women's Health Investigator Program Award in July.

Ilona S. Kickbusch, PH.D., professor of public health (global health) and political science, was invited to be a member of the Hungarian Ministry of Health International Advisory Board in January by the Republic of Hungary's Ministry of Health, Social and Family Affairs. This board was established to help promote health, consolidate and modernize the health care system and reform health care financing, as part of the government's "Decade of Health" initiative.

Luke M. Kitahata, M.D., PH.D., professor emeritus and former chair of anesthesiology, was honored in November 2002 at the 50th anniversary celebration of the establishment of the Department of Anesthesiology at Tokyo University, his alma mater. He was the keynote speaker and received honorary membership in the Japanese Society of Anesthesiologists. The celebration was organized by one of his former Yale trainees, **Kazuo Hanaoka, M.D., FW '77**, who is professor and chair of the Department of Anesthesiology at Tokyo University.

Michael H. Merson, M.D., the Anna M.R. Lauder Professor of Public Health, dean of public health and chair of the Department of Epidemiology and Public Health, was named chair of the Global Health Committee, part of the Association of Schools of Public Health executive committee, effective last January.

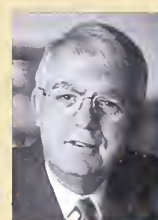
John A. Persing, M.D., professor and chief of plastic surgery, is president-elect of the Association of Academic Chairmen of Plastic Surgery and vice chair of the American Board of Plastic Surgery. Both elections were held in Baltimore in May. Persing was also named president of the American Society of Maxillofacial Surgeons in November 2002 at its annual meeting in Orlando, Fla.

Among those receiving Seton Elm-ly Awards in April for their contributions to relations between the city and the university was **Mary E. Schwab-Stone, M.D.**, the Harris Associate Professor of Child Psychiatry in the Child Study Center and associate professor of psychology. Schwab-Stone helped to develop a clinical consultation service for New Haven's Special Education Department, which evaluates between 35 and 40 children and youths each year, offers the department advice on program and policy issues and trains new generations of child psychiatrists on how to work in and with schools. Since 1992 she has developed and led the Social and Health Assessment Program, which oversees the assessment of mental health symptoms, competencies, Problem behaviors and risk factors in the middle and high school population.

Hongyu Zhao, PH.D., the Ira V. Hiscock Associate Professor of Public Health (Biostatistics) and Genetics, has received a three-year, \$1.2 million grant from the National Science Foundation for a system biology study. Zhao and colleagues in statistics, genomics and proteomics, bioinformatics and computer science will develop an integrated approach to reconstructing biological pathways. Zhao was also awarded a pilot grant by the Yale Center for Genomics and Proteomics, where he and colleagues will research tissue- and cell-specific expression profiling of the rice genome.



Mark Gorman



Michael Merson



Jeannette Ickovics



John Persing



Akiko Iwasaki



Mary Schwab-Stone



Ilona Kickbusch



Hongyu Zhao



Luke Kitahata

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The class of '03



ABOVE This year's Commencement was the soggiest in recent memory. It rained throughout the ceremony, leading graduates to process under the shelter of umbrellas. Jennie Bailey was among the first in the procession.

OPPOSITE Expressions on the faces of graduates and faculty captured the prevailing mood.

Medicine from the heart, as well as the head

Graduates hear a prayer for wisdom and humility, and a reminder to heed not only science, but also the spirit.

Sheltered under a tent to ward off a driving rain, 97 students received their medical degrees on Memorial Day and heard admonitions to retain their humanity, to find meaning in their lives and careers and to take comfort from lives of service.

Making their way through a sheltering gantlet of umbrellas, the Class of 2003 processed to the tent on Harkness Lawn where their families and friends waited. In his opening remarks, then-Dean David A. Kessler, M.D., told students to take pride in their accomplishment. "As you go

beyond these walls," he said, "you will increasingly recognize the degree to which you have been shaped by this place. Today you go forward to shape the future of American medicine. You are proof that this great experiment called the Yale System works and that you have been shaped by an incredible faculty."

Joahd Toure, one of the graduates, offered an invocation of thanks and a call for humility. "Let us pray that success follows us from this place," Toure said. "Let us pray for continued support from mentors, family and friends. Let us pray our education serves us well. Let us pray for knowledge to understand illness. And let us pray we remember that knowledge is not all that is needed to address the concerns of our future patients. Let us also pray for



compassion, wisdom, patience, humility and grace.”

In her Commencement address, Rachel N. Remen, M.D., clinical professor of family and community medicine at the University of California, San Francisco, School of Medicine, continued with a similar theme. Medicine’s emphasis on intellect and science often disregards the instincts of the heart, she said. “It may cause us to believe that the perception of the heart is soft, unprofessional, even dangerous, that the heart will somehow mar our judgment and make us incompetent as medical people,” said Remen, author of *Kitchen Table Wisdom: Stories That Heal* and *My Grandfather’s Blessings: Stories of Strength, Refuge, and Belonging*. “It has taken me years to realize that being a human being is not unprofessional. ... The heart is the strongest place from which to live a life, especially a physician’s life.”

This year’s Bohmfalk Prizes went to Sheldon M. Campbell, M.D., Ph.D., FW '92, assistant professor of laboratory medicine, and Cyrus R. Kapadia, M.D., professor of medicine. Auguste H. Fortin VI, M.D., assistant clinical professor of medicine, received the Arnold P. Gold Foundation Humanism in Medicine Award. The Leah M. Lowenstein Award went to Susan M. Richman, M.D., assistant professor of obstetrics and gynecology. John S. Hughes, M.D., HS '76, associate professor of medicine, received the Francis Gilman Blake Award, and the Betsy Winters House Staff Award went to Stephen M. Kavic, M.D.

—John Curtis



TOP TO BOTTOM

Nikki Pinkerton received her diploma from then-Dean David Kessler in the company of her two daughters.

Karen Kim’s family joined her for a celebratory photo.

John Cowden was among several students who accepted their diplomas with children in tow.



TOP TO BOTTOM

Vivek Murthy gets a congratulatory hug.

Nimi Tuamokumo shared the high spirits of the day with her uncle Jide Labinjo, mother, Yomi Wilcox, and uncle Edward Labinjo.

Essmaeel Abdel-Dayam's mother, Ayda El-Shirbiny, also a physician, came to New Haven for the ceremony.

ABOVE

Commencement speaker Rachel Remen urged graduates not to ignore the instincts of the heart.

It takes “a posse” to protect the world’s health, former CDC director asserts

Jeffrey P. Koplan, M.D., M.P.H., says cowboys get a bad rap. In his youth he lived the cowboy life himself on a “quarter-acre spread in suburban Boston ... A scene that stirred me repeatedly was the formation of a posse, setting off to apprehend the bad guy,” Koplan told the crowd gathered in Battell Chapel for the School of Public Health Commencement on May 26.

The world needs something like a posse to band together to solve public health crises, said Koplan, former director of the Centers for Disease Control and Prevention (CDC). In some circumstances, he acknowledged, “consensus is not possible. ... But there are many more when restraint, dialogue,

sensitivity and listening to others are called for. Not just for diplomatic show but to serve our national interests.

“There is a prevailing mind-set that we can reject a global warming treaty, be a nonsignatory to a land mine ban and seek to dilute a U.N. treaty [on tobacco control] ... with no obvious penalties,” said Koplan, who is now vice president for academic health affairs at Emory University’s Woodruff Health Sciences Center and was elected in June to the Yale Corporation. The advent of severe acute respiratory syndrome, or SARS, makes clear “the value of having trusting and close working relationships with a wide variety of nations.”

Students graduating into the public health community form part of a posse “with a sacred mission to improve the health of people everywhere,” Koplan told the 121 men and women receiving

master’s and doctoral degrees in public health.

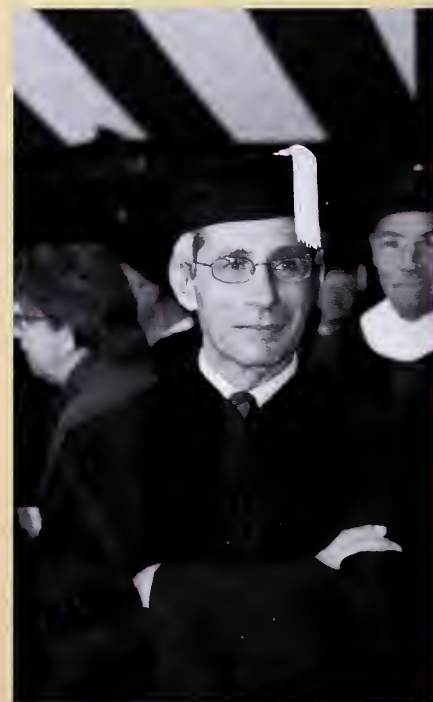
Sahar Rooholamini and Andee Krasner gave the student address together. Krasner told their classmates “to seek justice as the prerequisite of health. It is our view that the greatest advantage of a Yale education is the platform it provides graduates to be able to amplify the voices of those who would otherwise not be heard.”

The students honored Kaveh Khoshnood, M.P.H. ’89, Ph.D. ’95, assistant professor of epidemiology, with the Award for Excellence in Teaching. The Dean’s Prize for an outstanding thesis was awarded to Jennifer Collins and Amelia Shaw. The Henry J. (Sam) Chauncey Jr. Inspiration Award went to Sarah George, and Gina Engler won The Cortlandt Van Rensselaer Creed Award.

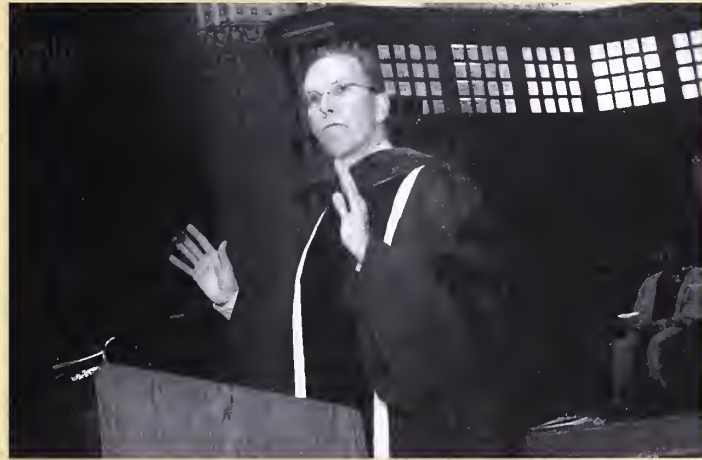
—Cathy Shufro

NIAID director receives honorary degree

At Commencement ceremonies on Old Campus, Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases and chief of the Laboratory of Immunoregulation at the National Institutes of Health, was awarded an honorary doctor of medical sciences degree. Fauci has been at the forefront of efforts to understand and treat HIV infection.



MICHAEL MARSLAND



CLOCKWISE FROM TOP LEFT
The School of Public Health held its Commencement ceremony in Battell Chapel.

Victor Edgerton indulged in a long-standing tradition by decorating his mortarboard with action figures.

Keynote speaker Jeffrey Koplan, former head of the Centers for Disease Control and Prevention, said public health requires the equivalent of an international "posse" to work together to solve crises.

Alice Yeung shared a moment with classmates at the ceremony in Battell Chapel.



Leo Kim discussed his work during the poster session at Student Research Day in May.

For young physician-scientists, a mentor is no longer a single sage but a network

Unlike past generations, physicians now entering the world of academic medicine no longer seek a single mentor, said Edward J. Benz Jr., M.D., FW '80, a former Yale faculty member who is president of the Dana-Farber Cancer Institute. Mentorship for young scientists, said Benz, a prominent hematologist, has undergone a paradigm shift.

Rather than learning from a succession of experienced scientists, as he did, young scientists now benefit from "spontaneously forming networks" of investigators in diverse disciplines, Benz told the audience at Student Research Day in early May.

Posters lining the corridors of the Jane Ellen Hope Building described the research of 63 students completing M.D., M.D./PH.D. and M.P.H. degrees. Projects included a comparison of expected and actual waiting times in emergency departments, a study of a South African program to prevent vertical transmission of HIV, research on the impact of controlled ovarian hyperstimulation on the success rate of *in vitro* fertilization and a study of how the molecular genetics of KRIT1 affect the pathogenesis of cavernous malformations.

Reflecting on Benz's description of changes in the system of mentoring, 7th-year M.D./PH.D. student Stephanie Eisenbarth said she'd had several key mentors, in particular H. Kim Bottomly, PH.D., professor of immunobiology. Graduate school, Eisenbarth said, is structured to provide students with a committee of three to six faculty members. "They, too, have a significant impact on your development as a scientist, and I think this is a positive influence on the process," she said. Her study of the role of endotoxin in asthma pathogenesis was published in *The Journal of Experimental Medicine* last December.

After hearing presentations by five students with award-winning theses, Dennis D. Spencer, M.D., HS '77, the Harvey and Kate Cushing Professor of Neurosurgery, gestured toward the presenters and commented: "We see not students, but future colleagues."

Some of the student theses can be read online at <http://ymtdl.med.yale.edu>.

—Cathy Shufro

TERRY DAGRADI

The war between ideology and science is costing lives, speaker tells AIDS gathering

People are dying because public health policy has fallen victim to “the war of ideology over science,” keynote speaker Geeta Rao Gupta, PH.D., said at the annual AIDS Science Day at the School of Public Health in April. A health policy based on ideology rather than research “is not just wrong,” she said, “it is fatal.”

Gupta, president of the International Center for Research on Women, said social change arising from globalization has pushed societies “backwards to fundamental ideals and primary cultures, to hold on to what is seemingly sacred.” The reversion to fundamentalism typically limits women’s mobility and sexual and reproductive autonomy, she said.

The “most stunning examples” of ideology-based policy have come from the United States, she said, which has, at United Nations conferences, promoted abstinence as the only sure way to prevent sexual transmission of HIV and called for the deletion of “condom use” from a list of strategies to prevent infection. Such “ideological posturing,” said Gupta, “costs lives, tens of millions of lives.”

Policy based on research should include cultural analysis, said Gupta.

For instance, women’s ability to protect themselves from HIV is limited by societal rules governing how women (and men) should behave. If an AIDS vaccine is developed, some societies will regard getting vaccinated as an admission of promiscuity.

“We just presume that once you have the solution, it’s a good solution,” said Gupta, adding: “Biomedical interventions are not gender-neutral.”

During the day of panels and poster sessions, scientists, anthropologists, social workers, faculty and students discussed an array of issues related to HIV/AIDS, including prevention and care in international settings, interventions to stop the spread of the disease and the implications of race, gender and poverty.

—Cathy Shufro



JOHN CURTIS

Geeta Rao Gupta, right, the keynote speaker at AIDS Science Day, said science, not ideology, should guide health policy.

Reunion 2003

Amid the catching up, serious consideration of how war, terrorism and disease affect society and public health.



Harold Bornstein, Andrew McGowan and Robert Donohue, from left, were honored with the Distinguished Alumni Service Award at this year's reunion.

Although the theme of panels at both the medical school and the public health school reunions was the impact of disease and disaster on society, Donald O. Lyman, M.D. '68, turned that topic on its head.

"It is not so much that infectious disease affects society," he said, speaking at the medical school symposium, *Infectious Disease and How It Impacts Society, Public Health and Safety*. "It is that societal patterns influence the diseases we suffer."

Past epidemics of infectious disease stemmed from unusual social patterns such as urban crowding. Long before antibiotics these diseases were successfully addressed by easing congestion and providing basic sanitation. That lesson—addressing societal problems to eliminate disease—is now being applied to lifestyle patterns such as smoking and nutrition.

Most deaths, illnesses and disabilities today stem from two sources, cardiovascular disease and cancer, Lyman said. And they, in turn, are largely the result of three things—smoking, poor nutrition and lack of exercise. In California, where he is chief of preventive medicine for the state's Department of Health Services, Lyman has begun to address those matters. An anti-smoking campaign has reduced adult smoking by a third

and consumption of tobacco products by two-thirds. Over the past decade the incidence of cancer in California has fallen by 10 percent, he said. The state has seen a similar reduction in cardiovascular disease. "Our next step will be nutrition and physical activity," he said.

Also on the panel was Frank J. Bia, M.D., M.P.H., FW '79, professor of medicine and laboratory medicine, who outlined the early history of antimicrobial agents, including the first use of penicillin at Yale during World War II. Vincent J. Quagliarello, M.D., HS '81, professor of medicine and clinical director of the section of infectious diseases, offered an update of the SARS epidemic around the world (See "SARS Remains a Moving Target," p. 29). What is known about the emerging syndrome, he said, keeps changing as more is learned about it. Margaret K. Hostetter, M.D., chair and professor of pediatrics and professor of microbial pathogenesis, discussed diseases common to children adopted from other countries.

After the symposium, then-Dean David A. Kessler, M.D., spoke on the effects of HIV/AIDS on children. Calling the disease the "worst epidemic in world history," Kessler said that by the end of the decade, 45 million people will be infected. Despite that dire figure, Kessler noted that

the world is responding to the crisis with offers of aid. The Bill & Melinda Gates Foundation, he said, has pledged \$15 million for projects to prevent mother-to-child transmission of HIV. An ongoing program at Yale sends first- and second-year medical students to South Africa to work on local HIV prevention projects.

"I think increasingly we are becoming a global medical school at a global university," Kessler said.

At the annual meeting of the Association of Yale Alumni in Medicine (AYAM), three graduates received the Distinguished Alumni Service Award: Harold D. Bornstein Jr., M.D. '53, HS '56; Robert J. Donohue Jr., M.D. '58, HS '59; and Andrew J. McGowan Jr., M.D. '58.

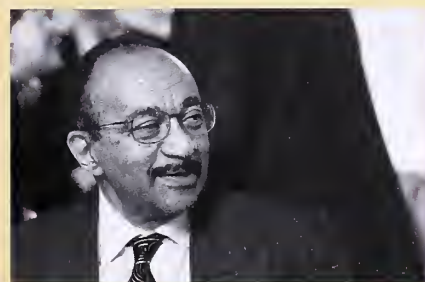
The AYAM's executive committee elected new officers at the reunion. Donald E. Moore, M.D. '81, M.P.H. '81, is the new president. Francis M. Lobo, M.D. '92, was elected vice president. Christine A. Walsh, M.D. '73, is the secretary.

War and public health

In Vietnam the unintended consequences of war persisted after hostilities ended. Bomb craters filled with water and became breeding grounds for mosquitoes. The effects of Agent Orange continue to emerge genera-



JOHN CURTIS (2)



TOP Barry Levy, left, and Victor Sidel discussed the effects of war and terrorism at the reunion of the School of Public Health at the New Haven Lawn Club.

ABOVE Andrew McBride was one of two public health alumni inducted into the Alumni Public Service Honor Roll.



Joseph Zaccagnino

tions later. In early June, despite the declaration of an official end to the second Persian Gulf War, unexploded ordnance continued to kill and maim Iraqis. And the disruption of the Iraqi infrastructure spread disease, as evidenced by cholera outbreaks.

At the public health reunion on June 6 at the New Haven Lawn Club, keynote speakers Barry S. Levy, M.D., M.P.H., and Victor W. Sidel, M.D., co-editors of *War and Public Health* and *Terrorism and Public Health*, cited these and other examples as they described the effects of war and terrorism on public health.

In the United States, the anthrax outbreaks that followed the September 11 attacks highlighted the importance of public health and led to increased funding to handle bioterrorism. But according to Sidel, the overall picture is less than rosy.

"What we have seen over the past year or so," Sidel said, "is the diminution of public health resources. Very few bioterrorism funds can be put to dual use. They do not make up for huge losses that health departments have suffered because of economic downturns and sharp reductions in state and local government budgets."

In the afternoon, the discussion focused on the consequences of war for public health. Gregory Hess, M.P.H. '95, who designed and managed the Peace Through Health program for the World Health Organization, described how relief efforts offer a chance for peace-building. War, said Unni Karunakara, M.P.H. '95, health advisor for Doctors Without Borders, disrupts many aspects of human security, including politics, the

environment, the economy and food supplies. "All of those impact health," he said.

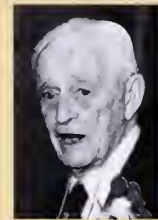
Other speakers included Bruce R. Grogan, M.P.H. '76, principal in The Grogan Group, which advises both the private and public sectors on sustainable development and institutional capacity building, and Richard C. Poole, M.P.H. '78, a Naval Reserve Medical Service Corps commander, who is organizing a conference on bioterrorism and emerging infectious disease in Latin America.

Karunakara and Andrew D. McBride, M.P.H. '77, were inducted into the Alumni Public Service Honor Roll. Karunakara was honored for his international work and McBride, director of public health for Milford, Conn., was honored for his years of service, including a stint as commissioner of health for North Carolina. For his service to the School of Public Health, Eric Mood, M.P.H. '43, became the first recipient of a new award, the EPH Alumni Bulldog Award.

Joseph A. Zaccagnino, M.P.H. '70, president and CEO of Yale-New Haven Hospital, received the 2003 Distinguished Alumni Award.

"Health care is an industry in transition," Zaccagnino said after receiving the award. "It is an industry that leads and lags the rest of the world. We have access to the most advanced medical technology anywhere, but our population is not as healthy as those in many other industrialized nations, and we have 40 million citizens who are not protected by medical insurance."

—John Curtis



Lycurgus Davey

Lycurgus "Bill" Davey receives the Peter Parker Medal

In a ceremony in the Beaumont Room on May 27, Lycurgus M. Davey, M.D. '43, HS '52, was honored with the Peter Parker Medal for his service to medicine, the university and the medical school. "Dr. Davey's dedication to the Yale School of Medicine and his profession continues to this day," said then-Dean David A. Kessler, M.D. During his career Davey has won honors from medical organizations, published articles on neurosurgery and the history of medicine and served as a medical officer in the U.S. Navy during World War II. While president of the Association of Yale Alumni in Medicine, Davey, 85, reached out to graduates beyond the East Coast to bring them into the fold. Davey thanked those assembled by paraphrasing the poet Robert Burns. "It is a gift to see ourselves as others see us," Davey said, adding that "a person is truly a composite of all the influences of a lifetime."

1938**65th reunion**

Ben and **Blanche Lyons** moved this year to a new and very active retirement community in West Redding, Conn., just 10 miles from Westport and Norwalk, where he had his ophthalmology practice. We had to forgo attending the 65th reunion activities because **Blanche** fell and injured her pelvis just before the scheduled meeting. She is recovering at home after spending some time in the hospital. **Lester Wallman**, married to **Elizabeth**, has spent more than 50 years on the faculty of the University of Vermont Medical School as a professor of neurological surgery and remains active as an emeritus professor. The **Wallmans** found it difficult to attend the Yale reunion because of his close relationships at Vermont and was attending some of the festivities of the reunion there. He has three children, a son, also a physician, and two daughters. **John McGillicuddy** is in an assisted-living facility in Framingham, Mass., and for the past 10 years has had extensive neurological problems, including severe loss of sensation in both legs. **Ed Roberge** of Stratford, Conn., also suffers from extensive neurological problems. **Jim Radcliff**, who is almost blind, lives in Fairhaven, Mass., with his wife, **Betty**. With all of us in our 90s, it is difficult to attend.

Ben Lyons

1943 March**60th reunion**

Eight members of the Class of 1943M attended the reunion in June. Our class numbered 48 at graduation. This was a remarkable attendance when one considers classmates who are ill and those who have died.

"**Bill**" **Davey** received the Peter Parker Medal this year for exceptional service to the Yale medical school. (See opposite page.) He is preparing two manuscripts for publication—

A History of the Yale Medical Library and *A History of Neurosurgery*. **Rocko Fasanella**, now fully retired, contributed his unique charm, warmth and good humor during the gathering. He was accompanied by his daughter. **Gerard Fountain** retired from psychiatric consultation and supervision of psychiatric residents at the Dartmouth Medical School. He devotes many hours each day to painting. He comments:

"Some paintings I keep; others I throw away."

Stuart Joslin, having completed several decades of pediatric practice in Stratford, Conn., was increasingly concerned as to why so many children are unhappy. In 1970 he entered a psychiatric residency and a fellowship program at the Yale Child Study Center. Following this training he practiced child psychiatry in Stratford, retiring in 1998. He hopes to write a book about his experiences.

Henry Markley practiced internal medicine in Greenwich, Conn., from 1950 to 1979. He continues to direct the Greenwich Hospital Home Care service, which he founded in 1956. This program added hospice care in 1980. It serves as a model for new home care programs throughout the country.

Sophie Trent-Stevens, after an extraordinary career in tropical medicine in various parts of the world and 20 years of primary practice in Meriden, Conn., enrolled as a graduate student in the art department at Central Connecticut State University, and received her M.A. degree in art and art education in 1982. Her "new career" in the art field has led her to serve as a docent at the New Britain Museum of American Art. She spends much of her time writing poetry and painting. She has published four books of poetry. Many of her paintings have received awards.

Morris Wessel continues as pediatric consultant two days a week at the Clifford W. Beers Child Guidance Clinic. He was one of the founders of the Connecticut Hospice 25 years ago and has an interest in the role primary pediatricians can play in serving children who experience significant losses. He has published several articles on this subject. **Robert Wyatt** retired 10 years ago from a gynecological practice in Greenwich, Conn., and moved to Del Ray Beach, Fla. His son accompanied him to the reunion.

Morris Wessel

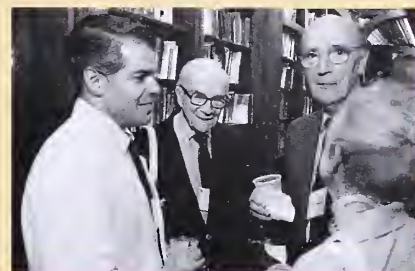
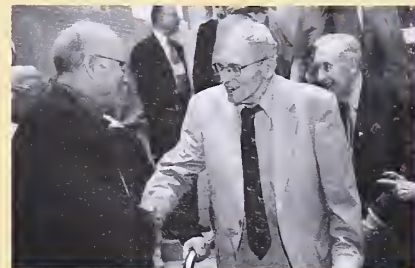
1943 December**60th reunion**

On one of the rare perfect days of June this year we began our 60th reunion celebration. Only **Hunter Comly** and **Tom Bucky** came. **Tom**, with wife **Doris**, and **Hunter**, with **Rita Iannace**, attended the wonderful clam-bake together and sat with members of the Class of '43 March and enjoyed their humor as they spouted poetry. We enjoyed ourselves, but regretted not seeing again our old classmates; there are now only about 20, and it was a lost opportunity. They would have appreciated, as we had, that the old cooperative spirit of Yale Med toward teaching and learning has not changed, despite the enormous growth. The new buildings on the medical campus were bewildering (after 60-plus years) but beautiful and inspiring. The modern medical student is fortunate. We hope you'll all attend the next reunion.

Tom Bucky and Hunter Comly

1948**55th reunion**

Spring seems to have escaped us this year. But we did catch a day of sunshine on Friday, June 6, which made the clam-bake all the more enjoyable. Although turnout for our class was disappointing, our financial secretary, **Ben Rush**, provided information





about some of our absentees. **Ben's** wife, Nora, passed away this year after a long illness. **Ben** continues in his retirement role as professor emeritus of surgery at the New Jersey Medical School, teaching medical students and imparting his medical and surgical experiences to residents as well. He was able to take the Yale alumni trip to Australia. He reports that out of a class of 55, 40 of us are still on this side of the green although the health status of most is unknown. He did report that **Jim Needham** and **Art Terrill** felt that travel was not an option and that others felt the same way.

Our other secretary, **Paul Koehler**, was present with his wife, Marge. **Paul** has two new hips and a knee and has remained sequestered at his home in Newbury, N.H. Our former secretary, **Paul Goldstein**, with spouse Betty, did not have to travel far from Branford, Conn., to be part of the celebration. **Paul** spends his retirement keeping his hand in the delivery of health care. He is a supervising attending in the pediatric primary care clinics at Yale-New Haven and the Hospital of 5t. Raphael. The young, sharp and bright residents help to keep his cerebral circuits stimulated. He finds they can still stand a bit of gray-haired wisdom. **Howard Simon** with wife Chris came to the clambake but couldn't make the dinner on Saturday. **Bob Lempke** and wife Mary were present at our dinner at the Graduate Club, where we were guests of the medical school along with the Class of 1953. **Bob** has found his niche in retirement with painting in oils, acrylics and watercolors. He has been rewarded with shows both locally in West Lafayette, Ind., where he and Mary live, and statewide as well. Mary also celebrated her reunion here with the Yale School of Nursing. Our stalwarts **Allyn Bridge** and wife Charlie came in from Moreno Valley, Calif. Charlie is the class agent for the School of Nursing '48 and celebrates her 55th as

well. She is busy as a volunteer for AARP, helping seniors in tax counseling. **Al** is active in a Learning in Retirement program at the University of California, Riverside. They love California.

News from some of our absentees: **Bud Rowland** and wife Ester were scheduled to be with us, but last-minute personal matters cancelled their plans. **Bud** recently retired as chair of neurology and director of the Neurological Institute at Columbia. In his retirement he published a book celebrating the 50th anniversary of the National Institute of Neurological Disorders and Stroke. **Arden** and Helen **Miller** just sold their home and moved into a villa nearby, where many of the chores of home ownership are delegated to others. **Paul Goldstein** found **David Holman** celebrating his 50th at the Graduate Club; **David** reported that brother **Hal Holman**, M.D. '49, is still full time at Stanford Medical School. **Hal** continues his research in autoimmune disorders and recently was cited by the American Rheumatoid Arthritis Society for his work. He spends most of his time promoting and developing a unique primary care delivery system to the great Palo Alto community.

We had a remarkable class and produced many stars in the medical science and health care fields. There are many great memories of years in New Haven, particularly the first class show we produced with the Class of '49 and the basketball and squash games in facilities now gone. You would be amazed at the renovation and expansion that has taken place. The Boyer Center, the Hope restoration and the new six-story building at 300 Cedar St., the site of the old nursing dorm, are reasons alone to come back for our 60th.

A stronger effort to attend would make for an even more pleasant event. Stay well!

Paul Goldstein

1953

50th reunion

Wow!! Our 50th reunion broke all alumni attendance records, with 27 of our 46 survivors, almost 60 percent, attending. As far as we can tell, this is the largest number and the highest percentage in medical school history. All enjoyed a busy and convivial weekend filled with camaraderie and love.

Fred Young requests reverse alphabetical order so let's say he and Mary Lou are among our most consistent returnees. **Bill** and Martha **Wilson** ferried in from Block Island. **Bill** and Connie **Shepard** were first-timers from California. From the coast of Maine came our devoted **Barbara** and **Irv Rosenberg**—he's in charge of our reunion fund giving. Flying in from Puerto Rico were **Jose** and Leila **Ramirez-Rivera**. **Paul** and Betty **Quie** arrived from Minneapolis. **Rhoda** and **Ed Powsner** arrived from Ann Arbor. **Wick Potter** was accompanied by his New Haven native, Joanne. **Harvey Peck**, still working full time, brought Betty Thompson, recently retired. Janiece and **Bob Nolan** returned for their second 50th, having been here last year. Faithful Hyla and **Bob Melnick** toiled up from Larchmont. Equally faithful in their attendance are Carol and **Fred Lane**. **Dick Knowles**, from Newport, accompanied by his delightful son and daughter, arrived for Saturday's events. From across the country came **Dave** and Barbara **Holman**. Our other gracious first-time couple was Bernice and **Bud Hauser**. **Vince Gott**, who chaired the committee responsible for the class survey, brought both Iveagh and his PilotPoint. Peggy and **Irv Goldberg** returned, but had to leave before the Sunday brunch. Betty and **Tom Gentsch**, now in Seattle, are reunion regulars. **Lou Del Guercio**, just elected to the Executive Committee of the alumni association, was accompanied by his wife, Paula. **Rex Conn** joined us once again. Tooling down from Auburn, N.Y.,

were Emily and **Bill Chaffee**. Jeanne and **Remi Cadoret** made their every-five-year trip from Iowa. **Hal Bornstein** proudly received his Distinguished Alumni Service Award from then-Dean Kessler at the annual meeting of the alumni association. **Claude Bloch** joined us for much of the weekend. We enjoyed Andrea and **Seth Abramson's** company for both Saturday dinner and Sunday brunch.

Our classmates and spouses were especially pleased and proud to welcome back four of our class widows: Anne-Marie Doppman, Doe Dunn, Helen Etzwiler and Nina Whalen. While it was not always easy for them, we're sure they enjoyed themselves, since they indicated they'd be back in five years!!

As the 50th we were guests of the medical school for both the Friday night clambake and Saturday night dinner. We had a class meeting on Saturday afternoon in the sparkling new education and research building at the corner of Cedar and Congress, previously the site of the nurses' dormitory. The weekend closed on a talkative and delicious note as Maureen and I accommodated 44 guests at our home for Sunday brunch.

The good Lord willing, all the classmates who returned plan to come back in five years. We hope some of the non returnees will also plan to join us.

Harold D. Bornstein Jr.

1958

45th reunion

The 45th reunion of the Class of 1958 was an outstanding success with 20 members of the class entering into the festivities. The high point of the weekend came when **Andy McGowan** and **Bob Donohue** each received the Distinguished Alumni Service Award. The awards were given during the alumni association business meeting, which was held in the new Anlyan Center for Medical Research and Education, a major addition to the campus on the site of the

old nurses' dormitory at 300 Cedar Street.

Friday afternoon, early arrivals gathered to talk about what they were doing and going to do. **Pauline Wood**, who had retired from the University of Rhode Island's Health Services, was honored by having a building named the Dr. Pauline B. Wood Health Services. Her medical school compatriot, **Marcia Kraft Goin**, has not retired and has been elected president of the American Psychiatric Association.

Otherwise the rest of the weekend was spent feasting. Friday evening the group attended the medical school clambake. Saturday there was a buffet at Harkness after the awards. A small group opted for clam pizza at Pepe's. Saturday night we dined at the Union League Cafe through the good works of **Michael Kashgarian**.

The dinner was attended by **George K. Aghajanian, John P. Arnot, Gerard N. Burrow, David A. Carlson, John A. Creatura, Robert J. Donohue Jr., Lawrence Dubin, Donald D. Duncan, Marcia Kraft Goin, Stanley Harris, Michael Kashgarian, Theodore W. Lieberman, Andrew J. McGowan Jr., Albert Muggia, Carol F. Phillips, William B. Radcliffe, Paul A. Rudnick, Raymond W. Turner, John Patrick Wood and Pauline B. Wood.**

Jay Kislak and **Jim Greenwald** were scheduled to attend but never appeared. **Ted Miller** sent his regrets. Suffused with good fellowship and warm feelings for the Class of '58, the group disbursed, vowing to return in five years.

Jerry Burrow

1963

40th reunion

Neither the noisy union demonstrators on Friday nor the rainy weather on Saturday could dampen our enthusiasm as we gathered in New Haven on June 6th and 7th to celebrate our 40th anniversary as Yale M.D.s. The sumptuous clambake on Friday provided an ideal venue for aggiornamento, with ample food, drink and conversation. Our class dinner Saturday night at Zinc on Chapel Street provided a more intimate ambiance to continue our reminiscences and share our current lives. Apparent throughout the weekend were the youth and beauty of the wives and significant others in attendance. The salutary effects on their partners were quite obvious.

Of the 16 classmates in attendance, three have retired completely: **Dave (Carol) Fulmer** from internal medicine, **Bob (Marnie) Mueller** from pulmonary medicine and **Chuck Wilson** from radiology. The professors in our midst, actively involved in advancing our profession, included **John (Michelle) Conte** in infectious diseases, **Bill (Jackie) Friedewald** in biostatistics, **Craig (Gail) Llewellyn** in military medicine and **Sheldon (Doren) Pinnell** in dermatology. Also still actively in practice are **Art Ackerman** in anesthesia, **Dudley (Hedva) Danoff** in urology, **Alex (Christine) Gaudio** in retinal surgery, **Bob Grummon** in primary care, **Ben (Janice) Harris** in rheumatology, **George Holsten** in pathology, **John (Judy) Mahoney** and **Jay Pomeranz** in psychiatry. **Hal (Barbara) Kaplan** continues an active mix of gastroenterology and hospital administration.

After dinner we shared memory lane excursions and philosophical insights and enjoyed a drop-in visit from then-Dean David Kessler. We distributed and shared the written responses from many classmates who sent their regrets along with some





insights. **Barbara Rosenthal Almond** continues an active practice in psychoanalysis; **Dave Cross** and **Dave Holden** have both retired from primary care. Professor **Peter Gregory** has gone emeritus, but still does some liver clinic time. **Tom Tillack** is still a full-time professor of pathology, but going part time in July. **Lee Talner** is already on the part-time track in academic radiology. **Jerry Winer** remains active full time as professor of psychiatry.

We remembered with fondness and sadness our deceased classmates: **Miguel Alonzo, Millard Amdur, David Langtree, Peter Livingston, Tom Peters, Marvin Skolnick, Robert Shapiro** and **Gary Van Galder**.

Finally, planning has already begun for our 45th reunion. Everyone in the class has been deputized to get on the phones and help ensure a massive turnout in 2008. We felt badly for all the classmates who missed out on sharing a great weekend. We missed them.

Alex Gaudio and **Hal Kaplan**

1968

35th reunion

We shared our 35th reunion dinner in New Haven at the Quinnipack Club. Then-Dean Kessler joined us for cocktails and spoke optimistically about new activities and build-ings on campus.

The sad news for us was the loss of **C. Bruce Wenger** in November of 2002. We shared a note from his wife and remembered all our classmates who have died since graduation.

Rutledge Currie enjoys the good life as a radiologist in North Adams, Mass. **Alan Finesilver** goes west from his Wisconsin rheumatology practice to fly-fish in Montana as often as he can. **William Flynn**, surgeon in Boston, is as eager and energetic as ever, and ... continues as a baseball "nut." **Grace Jordison-Boxer** enjoys a practice in community medicine in Jackson, Mich., while husband

Larry teaches and practices at the University of Michigan.

Frank Lucente leaves New York City for long weekends at his country house near West Point, N.Y., where he enjoys the rural life and cooks wonderful things. **Don Lyman** continues as a public health official for the state of California and will serve as president of the American Cancer Society (California Division) in 2003-04. **Rod** and **Joan Martinez** invite us all to visit them in San Pedro Sula, Honduras, where—they say—the town has gone modern with strip malls and traffic lights. **Chuck Post** seems to spend more time at sea and less in the air with his gadget-laden sailing craft. **Elizabeth Short** is moving from Washington, D.C., to Pasadena, Calif., where her husband will be CEO of City of Hope hospital.

Donald O. Lyman

1973

30th reunion

Thirty years later, eight members of the Class of '73 met for dinner and reminiscing at the Polo Grille in New Haven. There were the customary reunion activities reported elsewhere, but the eight of us that made it found that three decades make you closer, if grayer—all grayer except for **Chris Kull Walsh**, who everyone agreed hasn't aged, and **Tom Sweeney**, whose red hair has matured well.

Chris, a professor of clinical pediatrics and pediatric cardiologist at Albert Einstein, has completed two terms on the executive board of the AYAM and was elected its new secretary. Her election keeps her on the board and the class representation at two, including yours truly, giving our class the singularly best representation. **Chris** brought her husband, Sean.

Reunion gave me and my wife, Sue, the excuse and the motivation to come in from our new home in Santa Rosa, Calif., where I now work for Kaiser as a full-time plastic surgeon. Coincidentally, **Jim Robertson** is also in Santa Rosa, practicing nephrology. He couldn't make it but sent his regards. I also had e-mails expressing similar wishes from **John McDowell, Tom Romano, George Lister** and my former Houston next-door neighbor, **Bob Galloway**.

Next furthest, **Marvin Miller**, a pediatrician, flew in from Dayton, Ohio.

David Coulter drove down from Boston. **David** is a pediatric neurologist at Children's Hospital Boston and Harvard. Incidentally, **David** was recently elected vice president of the American Association on Mental Retardation, making him, in June 2004, the first M.D. to serve as AAMR president in 20 years.

The others were the faithful local denizens. **Harry Romanowitz** and his wife, Sheila, remain in Stamford, where he now serves as pediatrician-in-chief for Stamford Hospital. **Jim Sullivan** lives in Waterford with his wife, Rita, and practices adult and pediatric neurology with a multi-specialty group in Mystic. **Tom** and **Anne Sweeney** and **Rick** and **Dotty Young** remain in New Haven. **Tom** is in a private vascular surgery practice, the heir to Stern and Toole. **Rick** is chief of pediatrics at St. Raphael's.

The class population, according to most recent records, remains at 87. We noted and respected the passing of four: **Omieri Mitoko, John Frederick Neil, Robert Joseph Polakwicz** and **Charles F. Stroebel**.

The conversation over dinner, as you might expect, brought us up to date with current careers, children and interests. Then-Dean Kessler stopped by to visit. Reminiscing suffered somewhat from failing memories. Some paths have crossed in the last 30 years, and **Chris** seems to have maintained correspondence

with most of the women. We had a room in the restaurant all to ourselves to chat the hours away, until we all realized it was getting past our bed-times—that never happened in medical school.

Harold R. Mancusi-Ungaro Jr.

1978

25th reunion

Twenty-five members of the Class of 1978 gathered in New Haven in early June for their 25th reunion and enjoyed a warm, relaxing evening at the Graduate Club Saturday night for dinner. This report is offered with apologies for omissions, misspellings and misidentifications, but with hope that *everyone* will return for the next reunion to set the record straight. I'm especially sorry for crimes against spouse names. With Bacchus as my witness, and with your forgiveness, here's who was there: **Stan Tillinghast** (cardiology practice in California) and wife Margaret, **Sally Rudicel** (alive and well in Boston), **Kathy Ales** (internal medicine and hospice care in Pennsylvania), **Emily Fine** (ob/gyn in New Haven), **Suzie Hodgson** (pediatrics) and husband John, **Duke Cameron** (cardiac surgery at Johns Hopkins), **Jonathan Weinberg** (psychiatry in Boston), **Robert Kraft** (plastic surgery on Long Island) and wife Ruth, **Harry Staszewski** (heme-onc in Long Island) and wife Sherrie, **Stu** and **Amy Forman** (psychiatry in Hartford), **David Cawthon** (neurology in Seattle), **Ken Lee** (hand surgery in California), **Cindy Kretschmar** (oncology in Boston) and husband John, **Joanne Bodurtha** (genetics in Virginia) and **Tom Smith** (oncology in Virginia), **Eric Einstein** (internal medicine in Norwalk) and wife Claudia, **Art**

Gershkoff (internal medicine in Philadelphia) and wife Grace, **Olag Oglund** (psychiatry in Connecticut), **Bob Gelfand** (endocrinology and drug development near New Haven) and wife Susan Boulware, **Rich Baron** (internal medicine in Philadelphia), **Tom Amatruda** (oncology in Minnesota) and wife Lynn, **Mac Hansing** (directs a new internal medical school in the United Kingdom), **Seth Powsner** (psychiatry at Yale) and wife Elizabeth Yen, **Kay Johnson-Keys** (ob/gyn in South Windsor, Conn.) and her family. **John Wagner** was in for the reunion, but had to leave before the dinner. **Linda Hall** and **Marcia Wade** both sent regrets. Pictures of each class member will be printed on decks of cards at the next reunion and distributed to make identification easier. See you in 2008!

Duke Cameron and
Seth Powsner

1983

20th reunion

To describe the many contributions of our classmates to the fields of clinical practice, academic medicine, teaching of medical students and residents, basic research, clinical research, government service, public health, international health, genomic and pharmaceutical enterprises, state societies and national association leaderships would take far more space than we are allotted. In fact, asking any classmate "what are you doing?" results in an answer that would more than fill our column in *Yale Medicine*. Included here are thus just snippets of news about classmates. Once again we show that our class really is, as we sang in our second-year show theme song, "one singular sensation, Yale Med Class of '83 ..."

Our 20th reunion included opportunities to learn what is new at Yale both academically and architecturally in the medical area. A highlight of the reunion was the visit by then-

Dean David Kessler at our class reunion dinner at Sage's Grill (best known to us by its former name, Chart House, home of "mud pies" and ocean views).

Attendees at our reunion included: **Brent Neuschwander-Tetri**, gastroenterology/hepatology, St. Louis University; **Elena Citkowitz**, cardiac rehabilitation, St. Raphael's, New Haven, and teaching internal medicine, Yale; **Lois Morton**, psychiatry, Connecticut; **Alan Reznick**, orthopaedics, Connecticut, with Liz; **Dwight Stapleton**, cardiology, Guthrie Clinic, Pennsylvania, with Susan and their two kids; **Michael Tom**, otolaryngology, New York, with Linda; **David Norton**, pediatrics, Mary Lane Hospital, Ware, Mass., and teaching and international health work; **Leslie Greengard**, mathematics and computer science, NYU, and founder, software company, Connecticut; **Steve Socket**, immunobiology/allergy, New York.

Other classmates heard from or about recently include: **Peter Blier**, pediatrics, Riverbend Medical, Massachusetts; **Alan Bloom**, ophthalmology, Rochester, N.Y.; **Linda Grais**, founder, structural biology company, California; **Jim Grober**, rheumatology, Northwestern, Illinois; **Tammy Harris**, family practice, Southboro, Mass.; **David Helfgott**, internal medicine/infectious disease, NYC; **Don Johns**, neurology, Beth Israel Deaconess Medical Center, Massachusetts; **Judy Melin**, internal medicine and administration, Lahey Clinic, Massachusetts; **Dan Oren**, psychiatry, Bristol-Myers Squibb, and teaching psychiatry, Yale; **Susan Seward**, internal medicine, Massachusetts General Hospital; **Dan Sosin**, CDC, Atlanta; **Valerie Stone**, internal medicine, Massachusetts General Hospital;

Eric Winer, medical oncology, Dana-Farber Cancer Institute, Massachusetts; **Tina Young Poussaint**, radiology, Children's Hospital, Massachusetts.

We owe special thanks to **David Helfgott** for doing the initial coordination work to get us ready for our reunion. Many thanks to **David Schwartz** for leading the philanthropy efforts for our class. Particular thanks to **David Norton**, **Elena Citkowitz**, **Leslie Greengard** and the alumni association staff who provided information about our reunion events. We are, as always, indebted to Patty DiNatale, Sharon McManus and Diane Morrissey of the Yale Medical School Alumni Affairs Office for their terrific coordination and planning efforts, and to Claire Bessinger of *Yale Medicine* for assuring our events are recorded. Let's all get together in 2008 to hear about each other's accomplishments. See you (all) at the 25th!

Judy Melin

1988

15th reunion

We had an intimate number of returnees for our 15th reunion. Ironically, the Yale medical school campus seems more different than any of our classmates!

Things are looking clearer to **Joi Barrett**, who recently had LASIK surgery. She can now find her children in the swimming pool. This is important in Sacramento, Calif., where **Joi** is an internist. **Joi** takes the farthest-traveled award, hands down. Closest was **Mike DiGiovanna**, who walked over after oncology rounds to get one of the last lobsters Friday. Mike devotes most of his time to breast cancer research.

Martha Brochin brought husband Joe Camilleri and two children. As a pediatrician, she seems to know everyone in the greater New Haven area and had a lot of news from various encounters at Stop and Shop!

Rhonda Karol and **Steve Bowers** joined us for Saturday

dinner. **Rhonda** recently took over her father's Queens dermatology practice. She and hubby Gordon Berger have two children. **Steve** spent five years in the Indian Health Service before returning to New Haven. Apparently an ER job and family aren't challenging enough, so he is beginning the master's in public health program.

A weekend highlight was a tour of the new anatomy lab with Bill Stewart. Shiny stainless-steel boxes with downdrafts hold cadavers, and computer monitors hang from the ceiling. The entire course is available online. The beautiful new Anyan Center (half classroom, half lab space) towers over our old parking lot, and the site of Acky's coffee shop is now the bookstore.

Several classmates sent news via e-mail. **Ken Andreoni** is doing transplant surgery in Chapel Hill, N.C., and has two daughters. He reports that **Joe Dizon** lives in Westchester and is commuting into NYC. **Walt Stadler** does oncology in Chicago, and **Gerri Mogavero** reads X-rays in Indianapolis.

Lisa Conrad Larkin writes from Cincinnati, where she practices internal medicine and has two children. She hears from **Kelle Harbert Moley**, who does reproductive medicine research in St. Louis. Depending on the season, **Mike Mockavack** tells me he is either snow or water skiing, when he isn't doing ophthalmology.

Nicole Davis and **Alex Vukasin** couldn't come, due to their children's soccer and ice hockey schedules. (Who's running our lives, anyway?) They have surgical practices (gynecology and urology, respectively) in Princeton, N.J.

In Alamo, Calif., **Sue Valley** rides horses with her daughter. Julia won a world championship in 2000 in Louisville! At work, **Sue** is the chief of anesthesiology at the VA Northern California Health Care System.

I recently saw **Leslie Weinstein** and met her 2-year-

old son. **Leslie** has a solo ENT practice in San Francisco. I am practicing dermatology in Rhode Island. In the winter, we enjoy skiing. In other seasons, I live on soccer fields with my three children.

I hope all of you will put June 2008 on your calendars and come for the 20th!!

Kathleen Carney-Godley

1993

10th reunion

Most of us agreed that we looked the same and that no one had aged. Most of us had moved beyond or were on the verge of moving beyond the fellowship-training era. Conversation focused on practice associations, billing, mortgages and children. In keeping with Yale tradition, the class continues to demonstrate leadership in areas in and out of medicine. We were all delighted to find the Yale System still intact!! The reunion was attended by 18 alumni and several family members.

Juan Bartolomei is practicing neurosurgery at Yale. He and his wife, Nicole, were both present. A few alums retired to **Juan's** place in Madison, Conn., after the clambake to reminisce about good times. **Adina Chelouche** and husband George Tellides, M.D., a cardiovascular surgeon at Yale, came with children Theodore, Julia and Alexander. **Adina** is practicing obstetrics and gynecology at Yale.

Eileen Deignan arrived with husband Victor Hsu, M.D. (rheumatology, Brigham and Women's Hospital), and son Evan. **Eileen** is in a private dermatology practice in the Boston area. **Dee Dockery**, who made the trip from Dallas, Texas, is practicing radiology at Baylor University Medical Center. **Ann**

Dolinsky lives in New York City, where she is an attending psychiatrist at Columbia University. **Stephanie Falcone**, who brought her daughter, Hana, practices general surgery and specializes in breast surgery in New York. **Christopher Fey** is practicing radiology in Greenwich, Conn., and continues to make even the grumpiest among us laugh. He was all smiles, as was everyone else around him. **Joe Fodero** made the trip from Livingston, N.J., where he practices plastic surgery. **Myles Greenberg**, who traveled from North Carolina, has joined a venture capital investment firm interested in promoting biotechnology. He continues to serve as part-time faculty in emergency medicine at the University of North Carolina. **Gregory Heinen** brought the entire clan all the way from Riverside, Calif. His wife, Judith, and children, Geoffrey, Jonathan and Katrina, were all a pleasure. **Greg** is practicing orthopaedic surgery and specializing in arthroscopic reconstruction. **John Houston** practices pediatric urology in Chicago at the Children's Memorial Hospital, Northwestern Medical School. **Robert Iannone** practices pediatric hematology-oncology in Philadelphia at the University of Pennsylvania. **Michael Kaiser** is an attending neurosurgeon at Columbia Presbyterian in New York. His wife, Michelle, is an attending at Columbia in internal medicine. Children Nicole, Cindy and Christopher were present. **William King** made the trip from Philadelphia. He is currently practicing general pediatrics at Temple University Children's Medical Center. **Stephen Marshalko**, wife Lisa and son Stephen were present. **Stephen** completes his fellowship in interventional cardiology at Yale this June. **York P. Moy** practices urology in Waterbury, Conn. He and wife Veronica and son Nicholas were present. **Stephen Solomon** made the trip from Baltimore. He is an attending radiologist at The Johns



Hopkins Hospital & Health System. Thanks go to **Dave Tendler** who rallied many of you to attend. **Dave** made the trip from Durham, N.C., where he is an attending gastroenterologist/hepatologist at Duke University Medical Center.

The reunion was certainly a joyous celebration and ended after dinner with hugs, handshakes and good wishes. We hope all 1993 grads will plan to be in New Haven in 2008 to celebrate our 15th reunion.

John T.B. Houston

1998

5th reunion

A record-breaking 26 members of the YMS Class of 1998 returned to New Haven for our 5th Reunion.

Childsy (Robinson) Art is a private practice pediatrician in Williamstown, Mass., where she lives with her husband, Jamie, and daughter, Maddie. Although she misses California, she does appreciate her proximity to the Woodchuck Cider brewery.

Not content with a mere M.D., **Senai Asefaw** has been moonlighting as a hospitalist at YNHH while pursuing an M.B.A. at the Yale School of Management.

Tamar Braverman and husband Michael live in Westville with their daughters, Yael and Talia. Tamar is a community internist, and reports annual attendance at the second-year show, although we're not sure why.

Christi Cavaliere drove from Michigan to the reunion with her grandmother, and reported making a U-turn across the median of I-80 to avoid a jackknifed, burning tractor-trailer. **Christi** is finishing the two-year research component of her plastic surgery residency at the University of Michigan and starts back on the wards this summer.

Also a resident in plastic surgery at Michigan, **Catherine Curtin** has embraced the opportunity to be a Robert Wood Johnson Fellow by taking art les-

sons, joining a women's soccer team and studying epidemiology. She and Terry Spauling also enjoy the occasional golf round.

Dan Coghlin has just joined wife Barb in a community pediatrics practice in Rhode Island. Their infant daughter, Molly, states that all of her immunizations are up-to-date.

A second-year dermatology resident at Northwestern, **Naomi Donnelley** enjoys living in Chicago, where she and her golden retriever take regular walks in Lincoln Park. Naomi's dog is named after the Mark Twain character, Huckleberry Finn. He is not, as we had originally thought, named after the Hanna-Barbara character, Huckleberry Hound.

Caroline Dumont and husband Brian Tobin continue to call New Haven "home" and to call their new daughter "Cecille." Caroline is finishing up her psychiatry residency on a part-time basis; though she has two more years of 20-hour weeks, she appreciates the time she gets to spend with Cecille and Brian.

Lori Etter is joining a dermatology practice in Durham, N.C. She and her boyfriend, Jeff Welty, have recently purchased a home to share with their dog, Millie, and their dog-to-be, Otis.

Naomi Botkin has one year left in her cardiology fellowship at UMass. She lives in Worcester, and purports to be able to pronounce it.

Karin Finberg, after spending 47 consecutive years in New Haven, is heading to Boston for a pathology residency at Mass General.

Scott Floyd has finished an internship at St. Raphael's. He, wife Stephanie and son Jack have bought a house in Boston, where Scott will complete a

residency in radiation oncology. Actually, we doubt Jack really contributed much toward the down payment.

Peter Hunt stayed on at UCSF for a fellowship in infectious disease. He has been awarded a five-year grant to study HIV. He reports playing trumpet fortnightly in a band that features Finnish folk tunes as well as jazz standards.

Now a dermatology faculty member at the University of Maryland, **Lynda Kauls** is settling into Baltimore with her husband, Geoff Emerson, an ophthalmology resident at Johns Hopkins.

Despite looking like he hadn't slept in about two years, **Matt Levine** reports being thrilled to be a general surgery resident at Mass General. **Matt** and wife Leslie enjoy living in Charlestown with their dog, Jack.

After finishing a combined residency in medicine and pediatrics, **Rich Lyn-Cook** is staying at Mt. Sinai for a med-peds-epidemiology fellowship. His wife, Monica Lopez, is a surgery resident at Einstein.

Ursula McVeigh has finished her chief resident year in internal medicine at the University of Vermont and will stay on as a hospitalist in Burlington after a one-month solo hike along the Appalachian Trail.

Matt Mealiffe made a heroic effort to make it to the reunion, coming up for Friday night despite having to present a poster at the gene therapy meeting in Washington, D.C., on Saturday afternoon. **Matt** continues his fellowship in medical genetics at the University of Washington, and will be moving down the block to a new lab at the Fred Hutchinson Cancer Research Center this summer.

Heather Nye has completed her combined med-peds residency at Harvard and is heading out to San Francisco to be a hospitalist at UCSF. She is particularly looking forward to being near family after 16 years of East Coast living.

Leo Otake is completing his

internship at YNHH in general surgery on his way to becoming a plastic surgeon.

Greg Raskin's daughter Daphne won several awards at the reunion, including Least Likely To Smear Herself With Food. **Greg**, who works at a biotech investment fund in NYC, thinks that Daphne got most of her charm from her mother, Jackie Weiss.

A.J. Rubineau (nee Babineau) is a family practice resident at Brown. She and partner Brian Rubineau (ne Rubin) have two children, Eli and Daisy.

Lisa Gale Suter is completing a rheumatology fellowship at Yale before starting a two-year Robert Wood Johnson fellowship. She and husband Lindsay have an 18-month-old son, Fenn, and a 10-foot waterfall, complete with sluice gate.

Having finished her pediatrics residency at the University of Washington, **Meena Thayu** has been a hospitalist at the University of Pennsylvania for the past year. She eagerly anticipates starting a pediatric GI fellowship at CHOP.

Steven Williams is a plastic surgery resident at YNHH. We would like to apologize for having teased him so much during medical school for his cell phone—if only because we pretty much all have one now. Just another reminder that it's a fine line between punch line and prophet.

Ashley Wivel is a chief resident in emergency medicine at the University of Indiana. She and husband Ryan Kime, also an ER resident, have become *huge* NASCAR fans.

Greg Raskin

A new MASH for a new millennium

Hymns, novels and phone calls home sustain a Yale alum on the ground in Baghdad.

By Cathy Shufro

Intensive training for handling wounds prepared Air Force Major **John C. Lundell**, M.D. '94, for the casualties he might encounter as a battlefield anesthesiologist. But in the weeks after Lundell arrived at his post in a tent hospital at the Baghdad airport in early July, his caseload resembled family practice more than trauma medicine. At Camp Sather Lundell treated several patients who were dehydrated and some who had blood in their urine, sutured cuts inflicted by can tops and pocket knives and took care of an airman having a heart attack.

All that changed with the bombing in August of the United Nations office in Baghdad. Since then, his wife **Andrea L. Lundell**, M.D. '94, reports from their home in Texas, he has treated both soldiers and civilians, Americans and Iraqis, some with severed limbs or serious burns resulting from the ongoing violence in Iraq. And it turns out that at Brooke Army Medical Center in San Antonio, where she is chief of cardiothoracic imaging, she has treated patients her husband stabilized in Baghdad. "A lot of the bad cases end up coming here for further work," she said.

In e-mail messages to *Yale Medicine* in July, Lundell reported that when he was not working shifts, he kept busy playing bridge with tent mates, washing his clothes and reading novels, the Book of Mormon and the hymns he'd loaded onto his Palm Pilot before leaving his home base in Texas. When he couldn't sleep, his cycle disturbed by the rotating shifts, Lundell sometimes hung out at the hospital, chatting with those on duty or with other restless airmen who had drifted up to the hospital tent. Twice a week, Lundell could count on phoning his wife and children, 5-year-old Madeline and 3-year-old John W.

Lundell said he felt safe where he worked, well inside the base for 1,500 Air Force personnel. He went to Iraq as part of what he calls "a lean, mean wound-fighting machine," a five-person mobile field surgical team that also includes a general surgeon, an orthopaedic surgeon, an emergency medicine physician and a critical care nurse. With equipment they carry in 70-pound backpacks, the

team can assemble a portable OR in less than two hours. Their supplies can see them through 10 life- or limb-saving operations. The team can also collect fresh blood from any service member whose blood type, printed on dog tags, matches the patient's.

A week before his departure Lundell explained that his team is trained to treat patients during "the golden hour of trauma," when the team has the best chance of saving a life by controlling bleeding—which causes about half of combat deaths. "The old system of dragging them off the battlefield and shipping them off to an Army hospital took much more time. ... We can pack a spleen or amputate a leg," he said. Now the team can stabilize patients before sending them on to a larger hospital.

Team members do face limitations. For instance, they can't use all their fluids on a single patient, even if a life depends on it. "In a level one trauma center, where we have basically unlimited resources, there's a better chance of saving someone that is severely injured, but in the field there would be nothing left for the nine other patients we're supposed to treat," says Lundell. "Sometimes you have to make tough decisions and decide who is going to be treated expectantly, meaning comfort measures—mostly analgesia, morphine."

The possibility of letting a patient die "is something we've had to think about. ... That would be rough, because we're trained to not let people die. We're trained to save lives."

Lundell's role in the mobile field surgical team brought him what he jokingly calls "my 15 seconds of fame." In May, he appeared in "Blood on the Battlefield," a *National Geographic Explorer* documentary on battlefield medicine. Lundell's 15 seconds (actually more like 30) showed his team practicing setting up an OR and then operating on "victims" hemorrhaging fake blood. Lundell and his team members actually learned most of what they know of trauma care by treating real-life victims at Wilford Hall Medical Center on Lackland Air Force Base in San Antonio, where they were stationed before going to Iraq. Lundell said taking care of people injured in drunken-driving accidents kept them "up to speed in dealing with people who are bleeding to death." In Baghdad, the team is working as a "building block" for a hospital staff of about 25. They work in a 20- by 70-foot air-conditioned vinyl tent with a wooden floor.

Lundell supported the U.S. invasion of Iraq, likening it to surgery. "You really would rather not operate on people. An operation is a controlled injury, controlled trauma. But if you have to operate, you want a finely honed instrument. The military is the knife. You have to cause injuries, but hopefully it's for the greater good. ... Certainly I regret some of our troops having to pay the ultimate price to free the Iraqi people, but I do support the president." He says that his wife agrees, then adds: "I don't know how our support would change if something were to happen to me. It's not something we have much control over. We do our best to do what we signed up to do."

Doing what they signed up to do has made life for the couple unpredictable since September 11. Both were in the Air Force and were periodically "at risk" for deployment, potentially at the same time—in which case the children would have stayed with relatives. The pressure eased in July 2002, when Andrea completed her three-year Air Force obligation and began a civilian job at Brooke Army Medical Center. Both husband and wife, who met as first-years at a volleyball game on Harkness lawn, took part in the Armed

Forces Health Professions Scholarship Program. The government paid their medical school costs and provided a salary for John's fellowship year in cardiothoracic anesthesia. In return, the Lundells spent a year in service for each year of support they received: she for three, he for five.

Andrea Lundell says she is coping with her husband's absence, expected to last four months, by keeping the big picture in mind: "I try to remember that there are many other men and women over there who are making sacrifices, too, and there have been many others who have in the past. ... I keep a positive attitude." She feels supported by colleagues at Brooke Army Medical Center. "A lot of people over there know what it's like to have somebody go."

When John Lundell completes his Air Force service in June, he expects to go into private practice to maximize time with his family. "I like doing and I like teaching. If I can find a place where I can teach some and do, then I'll be happy."

Lundell is grounded by his faith as a Mormon, which is "part of the fiber of my being. It helps me feel prepared for whatever may come."

Cathy Shufro is a contributing editor of *Yale Medicine*.



In July, John Lundell, a 1994 graduate of the medical school and a major in the Air Force, arrived in Baghdad, where he is an anesthesiologist in a mobile surgical team that can assemble a battlefield operating room in less than two hours.

Medicine and society have changed—but not conditions for residents

When **Ruth Potee**'s father started his medical residency at Boston City Hospital in 1949, the system was pretty simple: young medical school graduates received room, board and a lab coat in return for patient care and the training that went along with it. At the time, only residents at Bellevue Hospital in New York City received a stipend.

That changed when Gale Potee and his colleagues formed the first house staff association in the country and won stipends from the city of Boston. "It started a movement where residents were recognized as not just students, but doctors who deserve some compensation," says Ruth Potee, M.D. '99. But change is slow. Half a century later, when Potee was deciding where to train, she could safely expect a paycheck, but she also wanted an institution where the house staff had a say in how the hospital runs. "I didn't want to be at a place where I was a voiceless peon in the system," she says. She joined Boston Medical Center, where in 1972 the house staff association became a union with bargaining rights, and became an active member of the organization her father had helped found.

In 2002, in the final year of her residency in family medicine, Potee became national president of the union, the Committee of Interns and Residents (CIR). (Union rules allow members to remain on the executive committee for two years after completing a residency.) Now the largest house staff union in the country, CIR still represents only about 12 percent of the nation's 100,000 residents. "It's hard to organize residents," Potee says. "They have no time to organize themselves. They are so tired and broken and depressed, they can't imagine things ever getting better."

But Potee firmly believes residents need to be organized, especially since medicine and

medical students have changed so much since the system was devised. For much of the 20th century, residents were usually young, male and single. Today's resident is far more likely to be older, female, married and a parent. Potee was a member of the first majority female medical school class in Yale history, entering medical school at age 26 after working in politics in Texas and New York. She married and had her first child while at Yale, and gave birth to her second child during residency. (Half of women in medicine give birth during medical school, residency or fellowship, says Potee, who wrote her thesis on medicine and motherhood.)

Through her position at CIR, Potee works to make residency better for today's graduates. Founded in New York City's public hospitals in 1957, CIR won a collective bargaining agreement and established a benefit plan for house staff early on, and in 1975 negotiated a contract provision limiting call to one night in three. In a landmark 1999 case brought by CIR, the National Labor Relations Board ruled that residents are employees, not students. CIR helped shape New York state's Bell Regulations on duty hour limits for house staff, a model for the new duty hours guidelines from the Accreditation Council for Graduate Medical Education, which went into effect in July.

The union also fights for minimum staffing levels for ancillary hospital personnel, so hospitals can't cut nurses or technicians and expect residents to fill in. Those kind of cuts are bad for residents and for patients, Potee says. "The hospital can't balance its budget on the backs of residents," she says. But with budget deficits in most states, hospitals' finances aren't likely to improve any time soon. "I worry that residents are the group that tends to fill in the cracks, and the cracks are ever widening."

—Karen Schmidt

From Brooklyn to the vineyards: how a surgeon became a country doctor

Alexander Zuckerbraun, PH.D., M.D. '55, often finds fresh fruits and vegetables in the back of his pickup truck—in late May two sacks of oranges, a week later a flat of Bing cherries. These anonymous gifts come from this "country doctor's" patients who are farm workers. Although at age 79 Zuckerbraun calls himself a country doctor, he is really a hybrid: a family practitioner who spent 20 years as a surgeon, a California ranch owner with a Brooklyn accent.

Zuckerbraun took a while getting to medical school. After studying chemistry at the University of Michigan, he was drafted in 1943 and spent three years working on the atomic bomb project at Columbia University, Oak Ridge, Tenn., and Los Alamos, N.M. When he applied to study medicine 14 schools rejected him. He's not sure why he was turned down; perhaps it was because his stellar chemistry grades contrasted with some dismal grades in other subjects. (He recalls a D in history.) Nonetheless, he says, "I was going to do medicine whatever it took." Figuring a PH.D. in chemistry would be good preparation for medicine, he earned his doctorate at the University of Minnesota and applied again. He got into Yale.

Zuckerbraun and his new wife, medical technician Ruth Hitchcock, moved into veterans' housing—a two-family Quonset hut near the Peabody Museum. Zuckerbraun laughs when he recalls inviting an admired professor, pathologist Averill A. Liebow, M.D., and his wife over for drinks. "They acted like they were very much at home. This was almost like a shack."

More daunting than living in a near-shack, however, was the transition from chemistry to medicine. He didn't like anatomy at first, and he suspects he would have failed the first few quizzes at some other medical



TOP TO BOTTOM

Ruth Potee, with her husband, Stephen Martin, also a physician, and their children, Ella and Ben.

Alexander Zuckerbraun continues to see patients and raises grapes on his vineyard in California.

Laurence Tanner heads New Britain General Hospital, where he keeps seeking ways to ease the financial crunch.

school. "I wouldn't have made it without the Yale System. Any other medical school would have thrown me out." After graduation and surgery residency, Zuckerbraun and his wife settled in Santa Maria, a small town near the central coast of California where they raised seven children.

In the late 1970s Zuckerbraun made another radical lifestyle change. "I decided to be a country doctor, to work out of my office. No appointments. You just come in when you're sick. I won't see you in two weeks; I'll see you when you're sick."

He still thinks like a surgeon, always considering both a surgical and a medical remedy for a problem. From his patients, most of them field workers, he has learned to speak fluent Spanish.

Along with his prescriptions comes preaching. "I don't preach religion. That's personal. I preach education." He asks a young man, "Would you like to keep doing what you're doing for the next 30 years? Bent over picking strawberries?"

Not that Zuckerbraun is averse to picking fruit himself. He and his wife own a 317-acre ranch east of town, where nearly an acre of wine grapes should be ripe for winemaking in a year or two. Zuckerbraun has no plans to retire. "I wanted to be a medical doctor since I was five years old. What am I supposed to do, quit now?"

He hopes to be practicing medicine in 2005, he says, and to join his classmates in celebrating their 50th reunion.

—Cathy Shufro

On the front lines of the battle to provide affordable care

New Britain General Hospital was the eighth-largest employer in town two decades ago. Now it's number one. That may sound like good news, but it's not, says hospital President and CEO

Laurence A. Tanner, M.P.H. '72.

His hospital now ranks as top employer because the city's seven largest manufacturers all left town, went under or reduced their work force. Tanner has long experience with how that kind of economic pressure affects health care: since studying hospital administration under John Thompson at Yale in the early 1970s, he has served three decades as a hospital administrator, working for 15 years at two other Connecticut hospitals before joining New Britain General as its president in 1987. Now Tanner foresees "chaos" as local economic pressures combine with cuts in government funding and the end of the "Robin Hood theory of health care."

The struggle to survive financially overshadows all other concerns for Tanner as he runs the Central Connecticut Health Alliance, which employs 3,000 people and comprises three hospitals, two nursing homes, two assisted-living facilities and a mental health center with several locations. Two-thirds of New Britain General's income comes from "inadequate and drastically shrinking" state and federal funds. Last spring, Connecticut was paying only 50 cents per dollar of costs for Medicaid, while the federal government paid 90 to 94 cents per dollar for Medicare. Insurance companies no longer bridge those gaps through higher fees paid by insured patients. "Industry has said they can't afford it," says Tanner. The problem is compounded by the expectation of patients that they will have access to the latest diagnostic technologies and therapies, regardless of cost.

New Britain General has controlled costs by restricting prescription formularies, postponing building repairs and joining with other hospitals to buy supplies. The hospital has also diverted funds from education and prevention into the operating budget. "We think we're doing a disservice from a public health perspective, but we have a financial imperative," says Tanner. "I have the day-to-day dilemma of how to provide care for the person in the hospital today." Tanner worries that recent medical advances and those on the horizon will be denied to patients who can't pay. For instance, a cardiac defibrillator like Vice President Dick Cheney's costs \$30,000 to buy and implant. Medicare reimburses less than \$20,000. So who gets to have one?

Tanner's strategy for improving financing long term is to talk to policy-makers. He occasionally visits the Connecticut Legislature and has twice addressed the federal House Ways and Means Committee. His goal is to help lawmakers understand the impact of cuts in funding, of new regulations and of the nursing shortage—"informing the decision makers on the consequences of acting or failing to act."

In fact, the nation's decision-maker-in-chief visited New Britain General on June 12. President George W. Bush chose Tanner's hospital as the venue for a speech on Medicare reform and prescription benefits. The president addressed 250 people in the hospital cafeteria en route to Maine to celebrate his father's birthday. Although Tanner did not get to button-hole Bush to convey his own policy proposals, he found the visit satisfying. "It tied public policy to a real hospital."

The region's bad economy has touched Tanner personally: his wife, Janice Ann Piazza, recently lost her job as a manufacturer's website developer. "She was outsourced and downsized," he says wryly.

When he feels overwhelmed, Tanner visits the neonatal ICU. There he likes to watch the premature babies "and see them thrive." Visiting the newborns provides an antidote to the "daunting process" of running a hospital with shrinking resources. "It's a frustrating process and in some cases a depressing process," says Tanner. "In some ways it's also an invigorating process. When you have a small victory, it's a victory. You know that what you're doing is benefiting people. There's somebody out there who's getting a service that they wouldn't otherwise get."

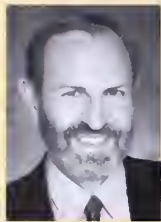
—Cathy Shufro

Familiar Faces

Do you have a colleague who is making a difference in medicine or public health or has followed an unusual path since leaving Yale? We'd like to hear about alumni of the School of Medicine, School of Public Health, Physician Associate Program and the medical school's doctoral, fellowship and residency programs. Drop us a line at ymm@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.



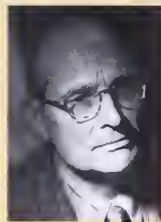
Franklin Epstein



Kenneth Arndt



Robert Maudsley



Michael Apuzzo



Paul Wang



Kelsey Wirth and Samuel Myers

1940s

Franklin H. Epstein, M.D. '47, HS '49, professor of internal medicine (nephrology) at Harvard Medical School and Beth Israel Deaconess Medical Center, received the David M. Hume Memorial Award from the National Kidney Foundation in April at the annual meeting in Dallas. The honor is presented to a distinguished scientist-clinician who exemplifies the high ideals of scholarship and humanism.

William E. Kenney, M.D. '41, HS '45, an orthopaedic surgeon, writes to say that he retired 11 years ago after a severe coronary attack. Kenney began his career as a coroner's physician in St. Louis, and later served as president of the medical staff at Truesdale Hospital in Fall River, Mass. He established a treatment program for children at The Cerebral Palsy Rehabilitation Center and Services in Fall River, where he was also medical director.

1950s

As a result of a bequest, arranged by his children, from the estate of **Kent Ellis, M.D.** '50, the Historical Library at the School of Medicine has named the reference room in his honor. At a dedication ceremony held in January a plaque was installed on the door, and bookplates will soon adorn the books which were purchased with the bequest.

1960s

Robert A. Achtel, M.D., HS '69, FW '71, clinical professor of pediatrics (cardiology) at Stanford University School of Medicine, has joined the Northwest Pediatric Cardiology outreach program for Stanford University Medical Center, based in Sacramento, Calif.

Kenneth A. Arndt, M.D. '61, HS '62, clinical professor of dermatology at Yale and in private practice at SkinCare Physicians of Chestnut Hill, Mass., received the Leon Goldman Memorial Lectureship Award from the American Society for Laser Medicine and Surgery in April at its annual meeting in Anaheim, Calif. The award honors a physician who has demonstrated excellence in clinical laser research and services to patients. Arndt was a founding member and former president of the society.

Robert N. Frank, M.D. '66, professor of ophthalmology, anatomy and cell biology at Wayne State University School of Medicine in Detroit, was elected editor-in-chief of the journal *Investigative Ophthalmology & Visual Science* (IOVS). His five-year term started January 1. IOVS is the major publication of the 10,500-member Association for Research in

Vision and Ophthalmology. Frank also writes to say that his youngest child, Ariel Frank, is beginning her first year at the School of Medicine this fall.

Robert L. Marier, M.D. '69, former dean of the Louisiana State University (LSU) School of Medicine, was named acting dean of the new School of Public Health at LSU Health Sciences Center. Marier stepped down as dean of the medical school last October to oversee planning of the new school of public health.

After 27 months, **Robert F. Maudsley, M.D.**, HS '69, has stepped down as dean of Health Sciences at Aga Khan University in Karachi, Pakistan, and returned to Nova Scotia, Canada. He writes that he is now retired for the third time and plans to volunteer at a local hospital and Dalhousie Medical School.

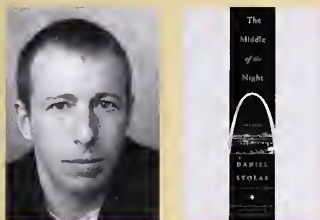
1970s

Michael L.J. Apuzzo, M.D., FW '67, HS '73, the Edwin M. Todd/Trent H. Wells Jr. Professor of Neurological Surgery, Radiation Oncology, Biology and Physics at the Keck School of Medicine at the University of Southern California, Los Angeles, received the Gagna A. and Charles Van Heck Prize from the National Funds for Scientific Research in Belgium for his contributions to the management of previously untreatable diseases, such as neurodegenerative diseases and brain tumors. King Albert II of Belgium presented the award in September at ceremonies at the Royal Academy of Medicine in Brussels.

Joseph A. Zaccagnino, M.P.H. '70, president and CEO of Yale-New Haven Hospital and the Yale New Haven Health System, was awarded an honorary doctorate of humane letters from Quinnipiac University for his civic and humanitarian contributions and his superior leadership skills. In addition, he gave the commencement address to graduate students in nursing, physical therapy, health sciences business, communications and education. Zaccagnino was also sworn in as chair of the National Committee for Quality Health Care at its 25th anniversary meeting in March in Washington. He will lead the board of trustees of the nonprofit organization, which is dedicated to enhancing the quality of health care in the United States.

1980s

After a 27-year career, **Mark L. Dembert, M.D.**, M.P.H. '83, retired from the Navy Medical Corps with the rank of captain in November 2002. Dembert writes to say that he has combined preventive/occupational medicine, disaster medicine and psychiatry to work for the Virginia Department of Health. He is the Eastern Region Medical Consultant for Emergency Preparedness and Response (chemical-biological terrorism), which is based in Norfolk and covers a population of 1.5 million and an area of several thousand square miles.



Dan Stolar



Nicole Cundiff and Scott Durbin

Heather J. Folsom, MED '81, M.D., a psychiatrist who began her medical studies at Yale with the Class of 1981, has written a book titled *Philosophie Thinly Clothed, and Other Stories*, which draws on her experience and fascination with the hidden world of unconscious meanings and motives. Her book, published this year by Cadmus Editions, is a collection of 42 short stories, allegories and moral tales.

Paul P. Wang, M.D. '86, associate director of clinical development at Pfizer Global Research and Development in New London, Conn., will complete a four-year term in December as a founding member of the subboard of Developmental and Behavioral Pediatrics for the American Board of Pediatrics. This subspecialty, established in 1999, focuses on problems such as mental retardation, autism, cerebral palsy, ADHD, enuresis, school refusal and behavior management.

1990s

Stephen Allegretto, M.P.H. '97, lecturer in public health at Yale and administrative director of finance at Yale-New Haven Hospital, has been promoted to vice president of financial planning at the Yale New Haven Health System. His responsibilities will include financial planning and analysis and decision support for the three-hospital system, which includes Yale-New Haven, Bridgeport and Greenwich hospitals.

Jennifer S. Meltzer, M.P.H. '97, pediatrics department administrator at the Beth Israel Medical Center in New York, was married in October 2002 to Vineet Goswami, an account executive for office equipment at Konica Office Products in New York.

Samuel S. Myers, M.D. '92, an internist in a private medical research and guidance practice and a clinical instructor at the School of Medicine at the University of California, San Francisco, was married in October 2002 to Kelsey D. Wirth, founder, board member and former president of Align Technology in Santa Clara, Calif.

Scot Phelps, J.D., M.P.H. '95, was appointed assistant commissioner of emergency management at the New York City Department of Health and Mental Hygiene in 2002 and has been teaching a course on disaster management at the New York Medical College. He writes that as head of the new emergency management bureau he is getting the opportunity to combine his experiences as a paramedic, emergency manager and administrator to better prepare New York City against terrorism.

Dan Stolar, MED '93, who began medical studies at Yale with the Class of 1993, writes to say that after completing four and a half months of third-year clerkships, he took a leave of absence from the School of Medicine to pursue creative writing and eventually withdrew as a student in good standing. This spring his first book, *The Middle of the Night*, was published by Picador

USA, a division of St. Martin's Press. "Though I did not graduate from Yale School of Medicine, I am very grateful to the many medical school faculty and students who offered their support while I struggled with this difficult decision. It is no exaggeration to say that this book might never have been written without their help."

2000s

Angeli Achrekar, M.P.H. '01, received the 2003 Carl W. Tyler Jr. Award for Excellence in Public Health Practice at the annual CDC Partnering Meeting in Atlanta on February 12, 2003. Achrekar is an Association of Schools of Public Health fellow with the CDC's National Center for Chronic Disease Prevention and Health Promotion, Division of Adolescent and School Health.

Nicole S. Cundiff, M.P.H. '00, product manager in marketing for Sanofi-Synthelabo in New York, and **Scott C. Durbin**, M.P.H. '99, executive director of finance and corporate development for Alteon, a small public biotech company in Ramsey, N.J., were married in July in New York.

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Brandon Brei, of Orange, Conn., a predoctoral student in the School of Epidemiology and Public Health, drowned on March 22 off the coast of San Juan, Puerto Rico, while trying to save a fellow student caught in an undertow. He was 26. Brei studied the ecology of vector-borne spirochetes. His research provided valuable information about strategies for controls.

Edward S. Brown, M.D. '43, of Sagamore Hills Township, Ohio, died on April 30 at the age of 85. Brown was the director of emergency services at St. Luke's Hospital in Cleveland for more than 20 years and director of the hospital's health services. He was a captain in the Army Medical Corps during World War II, receiving a decoration from the Philippine government.

Felix M. Brown, M.D. '93, a pathologist and associate director of surgical pathology at Brigham and Women's Hospital, died of cancer on May 27 at his home in Dedham, Mass., at the age of 36. In his honor, the Department of Pathology at Harvard has created an annual award to be presented to pathologists-in-training whose qualities of humanity, generosity and dedication complement their talent as physicians.

Nicholas J. Daukas, M.D., former assistant professor of ophthalmology at Yale, died on February 25 at the age of 80. Daukas, of Middletown, Conn., and Watch Hill, R.I., was an All-American football player in college and an All-Pro tackle for the minor-league Brooklyn Dodgers football team while in medical school.

Robert M. Donaldson Jr., M.D., the David Paige Smith Professor Emeritus of Medicine and former deputy dean and acting dean of the School of Medicine, died on July 9 at the age of 75 at his Cape Cod home. Donaldson joined the Yale faculty in 1973 and later served as vice chair and acting chair of the Department of Internal Medicine. From 1991 to 1992 he served as acting dean. A specialist in gastroenterology and a prolific contributor to the medical literature, Donaldson edited the journals *Gastroenterology* and *Current Opinion in Gastroenterology* and served on the editorial board of *The New England Journal of Medicine*.

Donnell D. Etwiler, M.D. '53, HS '54, died of cancer on April 6 at the age of 76. Etwiler founded the International Diabetes Center in St. Louis Park, Minn., in 1967. He established 60 diabetes care programs around the world, including 30 in Russia, for which he won the Russian Peace Prize in 1994. For 25 years he served as medical director of Camp Needlepoint, a summer camp for children with diabetes in Hudson, Wis.

Evelyn T. (Stotz) Farnsworth, M.N. '38, M.P.H. '55, of Wellesley, Mass., died on February 12 at the age of 100. Farnsworth served as an ensign in the U.S. Navy Nurse Corps in World War II. During her career she was an assistant administrator at the Boston Dispensary and Rehabilitation Institute.

James E.D. Gardam, M.D. '45, former vice president of medical services and governmental health programs at Prudential Insurance Co. of America, died on May 30 in Millville N.J., at the age of 81. While at Prudential, Gardam received a citation from the Secretary of Health and Human Services for his efforts to accelerate the federal reimbursement for new medical tests, services and procedures. After his retirement he founded the Argyle Medical Associates, consultants to health insurers.

Patricia Goldman-Rakic, Ph.D., professor of neurobiology, neurology, psychiatry and psychology, died on July 31 at the age of 66 from injuries after being struck by a car. Goldman-Rakic, who joined the faculty in 1979, pioneered the study of memory function. She was the first researcher to explore the frontal lobe, formerly considered inaccessible to scientific analysis, and to discover and describe its order and structure, which is responsible for the highest level of cognitive functions. She also studied amphetamine abuse in adolescents and young adults and how it diminishes the mind's performance.

S. Jerome Greenfield, M.D. '39, died on May 6 in the Boca Raton (Fla.) Community Hospital at the age of 88. Greenfield, a retired ophthalmologist from Millburn, N.J., served as a physician in the Army Air Corps in England and Iceland during World War II, attaining the rank of major.

William A. Gryboski, M.D. '56, HS '62, of Tequesta, Fla., died of lung cancer on January 18 at his vacation home in Greensboro, Ga., at the age of 73. Gryboski, formerly of New Britain, Conn., served as a chief surgical officer in the Navy aboard the aircraft carrier U.S.S. Essex and as chief of surgery at the U.S. Naval Submarine Base in New London, Conn. During his 26 years as a senior attending surgeon at New Britain General Hospital he introduced several new procedures, including the insertion of cardiac pacemakers.

Jerold A. Haber, M.D. '71, of Atlanta, died on April 30 at the age of 57. Haber, an orthopaedic surgeon, pioneered outpatient IDET (intradiscal electrothermal annuloplasty) and APLD (automated percutaneous lumbar discectomy) "Band-Aid" back surgery. Haber, an accomplished photographer and potter, has permanent photographic exhibits at Northside Hospital and the radiation oncology department at St. Joseph's Hospital Cancer Center, both in Atlanta.

Frederic L. Holmes, PH.D., the Avalon Professor of the History of Medicine at Yale, died on March 27 at the age of 71 after a long illness. As chair of the Section of the History of Medicine from 1977 to 2002, Holmes was a leading force in building Yale's program in the history of science and medicine, both as a scholarly field and as a link between the humanities, natural sciences and medicine.

Peter B. Hukill, M.D. '53, died on May 18 at his home in Winchester, Conn., at the age of 76. He was the former director of laboratories at Charlotte Hungerford Hospital and director of the Connecticut Dermatopathology Laboratory. Hukill was also on the faculty at Yale as an associate clinical professor of pathology from 1979 until his death.

Margaret F. Knapp, M.P.H. '49, a retired commissioned officer of the U.S. Public Health Service, died on March 20 at the age of 95. While working at the National Cancer Institute in Bethesda, Md., Knapp wrote the first nursing manual on cancer treatment, which was distributed to state health departments. She was also chief of the Division of Nursing Services at the Indian Health Service in Washington.

Ira R. Levine, M.D., an associate clinical professor of psychiatry at Yale and an attending psychiatrist on the Dual Diagnosis Unit of Yale-New Haven Psychiatric Hospital, died after a brief illness on January 31. He was 65. At the VA Connecticut Healthcare System in West Haven, Levine was director of ambulatory services and chief of the day hospital and mental hygiene clinic.

Robert A. Mino, M.D. '42, of Evansville, Ind., died at home on February 8 at the age of 86. Mino was on the surgery staff at St. Mary's Medical Center and Deaconess and Welborn Baptist hospitals in Evansville. He was a member of the American Medical Writers Association and the Mississippi Valley Medical Writers Society, and he published numerous scientific articles in medical and surgical journals.

Russell R. Monroe, M.D. '44, of San Francisco, died on April 4 of pneumonia at the age of 82. Monroe, a former chair of psychiatry at the University of Maryland School of Medicine, explored the relationship between madness and genius, as well as the electrical storms deep in the brain that trigger violence. Monroe studied offenders at the Patuxent Institution in Maryland and wrote several books on episodic behavioral and brain disorders.

Elpenor R. Ohle, M.D., HS '44, died on May 25 in Green Bank, W. Va., at the age of 88. Ohle started a medical practice in Celo, N.C., after a tour of duty with the U.S. Public Health Service in 1944. He was an old-fashioned family physician for nearly 40 years, until he retired to pursue gardening and landscaping. In 1997 Ohle was honored by the National Weather Service for 50 years of continuous recording of weather in the South Toe Valley in North Carolina.

Harold C. Patterson, M.D., HS '48, of North Wilkesboro, N.C., died on February 12 at the Villages of Wilkes Skilled Care at the age of 91. Patterson was a clinical instructor in ophthalmology at Yale and had a private practice in Danbury, Conn.

Claire E. (Burton) Reinhardt, PH.D. '42, of West Hartford, Conn., died on January 30 at the age of 87. Reinhardt spent her career as a public health professional with the Connecticut departments of Public Health and Education until her retirement in 1981.

Arnold Schoolman, PH.D. '54, M.D. '57, of Prairie Village, Kan., died on April 14 at the age of 75. Schoolman was professor of surgery (neurology) at the University of Kansas School of Medicine and had a private neurological surgery practice until his retirement in 1998.

David B. Skinner, M.D. '59, former president and CEO of the New York Weill Cornell Medical Center, died of a cerebral hemorrhage on January 24 at the age of 67. Skinner presided over the merger of New York and Presbyterian hospitals and directed the building of the New York-Presbyterian Healthcare System. He oversaw the construction of the Maurice R. and Corinne P. Greenberg Pavilion, an 850,000-square-foot structure that extends over Franklin D. Roosevelt Drive. Skinner continued performing esophageal surgery throughout his administrative career.

Kenneth J.W. Taylor, PH.D., M.D., professor of diagnostic radiology and obstetrics and gynecology at Yale, died on February 15 at the age of 63. Taylor explored the use of diagnostic "grayscale" ultrasound in cancer patients at the Royal Marsden Hospital in Australia and received grant support from the American Cancer Society and the National Institutes of Health for his work on detection of tumor vascularity by Doppler ultrasound. He authored and edited numerous books on diagnostic ultrasound including the *Atlas of Ultrasonography* and *Clinical Applications of Doppler Ultrasound*.

Jack L. Westcott, M.D., clinical professor of diagnostic radiology at Yale, died on January 31 at the age of 71. Westcott, former chair of radiology at the Hospital of St. Raphael, past president of the Society of Thoracic Radiology and a radiologist at Hartford Hospital, was the creator of the Westcott biopsy needle, which is used in hospitals today.

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Providing care in a changed world

Exotic travel is nothing new for David Hilmers, M.S., M.D., M.P.H. Hilmers has already landed in dozens of countries as a Marine pilot and orbited the Earth 400 times on the space shuttles *Atlantis* and *Discovery*. But for Hilmers, an assistant professor of pediatrics and medicine at Baylor College of Medicine, the chance to go to Bolivia as a Yale/Johnson & Johnson Physician Scholar in International Health is appealing. The former astronaut looks forward to learning about tropical diseases like leishmaniasis during two months working in a Bolivian hospital.

Sponsoring established physicians like Hilmers is new for Yale's International Health Program, which has been sending residents overseas since 1981 [*"A World of Difference,"* Autumn 2001]. With continuing support from Johnson & Johnson, the program is expanding. This year a \$500,000 grant will fund trips for 14 career doctors, 53 Yale residents and 15 residents from other medical centers. Participants will spend six to eight weeks in 17 foreign countries and at two Indian Health Service clinics in the United States. Despite terrorism, the war in Iraq and SARS, co-director Michele Barry, M.D., HS '77, said interest in working abroad remains strong. "We got hundreds of applications for these 82 spots."

Increasing hostility to Americans has raised safety concerns. "The aura which kept an American off-limits to some threats has diminished," said co-director Frank J. Bia, M.D., FW '79. But anti-Americanism may, paradoxically, motivate some physicians to go overseas, Barry said. "When there's so much anti-Americanism, physicians applying to our program seem to be committed to working in underserved areas overseas in an effort to mitigate this sentiment—to prove that Americans do care past their own self-interests and borders."

That global perspective became clear to Hilmers from 300 miles above Earth. It motivated him to begin medical school at age 42, after 12 years with NASA. "During the dark times of your orbiting ... you see the backdrop of the stars, and you see the earth as this tiny little rock," recalled Hilmers, now 53. "You get a different perspective—that we have to take care of each other, and to survive, everyone has to survive together."

—Cathy Shufro

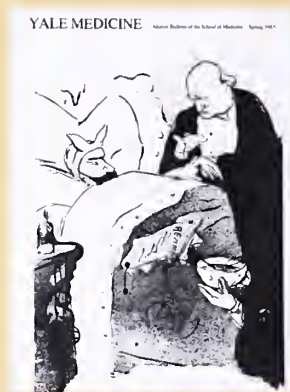


WINTER 1969

"The Departments of Medicine and Pediatrics have combined forces to organize a Division of Genetics embracing all ages from the fetus to old age. This section ... includes pediatricians and internists whose interests comprise the detection of abnormal chromosomal patterns, screening for inherited defects, and the biochemical and physiological investigation of the nature of these defects.

"A number of important research projects are now under way, including evaluation of the chromosome pattern of all babies born in the Yale-New Haven Hospital during the past year; investigation of the nature of the transport defects in renal glycosuria and in the amino acid ureas; a study in the isolated cells of tissue culture from patients of the nature of the biochemical defect in diseases involving the intermediary metabolism of amino acids and purines.

"Both in its spread of interest and in the range of age of the patients it serves, this group is virtually unique in American academic medical institutions."



SPRING 1983

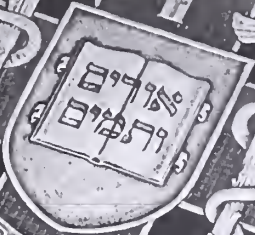
"Two recent School of Medicine building projects have received awards. The New Haven Preservation Trust presented a Merit Award to the School for its sensitive rehabilitation and creative reuse of the historic Jane Ellen Hope Building. The oldest building on the school's campus, the red brick and rough stone building was built in 1902 as a clinic building. ...

"First prize for excellence in consulting engineering in the category of mechanical and electrical design was awarded the school by the New York Association of Consulting Engineers for fostering excellence in engineering of its new chilled water thermal storage system. ...

"The facility was built to increase the capacity of the Sterling Power Plant in order to provide air conditioning for the Yale-New Haven Medical Center."



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Yale Medicine

winter 2004

Hippocratic growths,
and other Yale flora

14

An insider's view of
academic medicine

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Fighting the good
food fight

22



Closing the gender gap

26

Once an exclusively male bastion, surgery is beginning to resemble the rest of academic medicine as more women join its faculty ranks.



ON THE COVER

Barbara Kinder was one of the first two women to complete Yale's general surgery training in the late 1970s. The operating rooms have changed remarkably since then, with a steadily increasing number of women entering the field. At Yale, 17 percent of the surgery department's M.D. faculty is female, compared to a national average of 11 percent.

BACKGROUND

Endocrine surgeon Julie Ann Sosa scrubs in before starting a case.

BACK COVER

Ronnie Rosenthal, who specializes in geriatrics, is chief of surgery at the VA Connecticut Healthcare System's West Haven campus. For profiles of Rosenthal and other women surgeons at Yale, see pages 26 to 32 and our website, info.med.yale.edu/yymm.

Photographs by Terry Dagradi

WINTER 2004

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A program to encourage diversity in the health professions gives college students a closer look at the art, science and culture of medicine.

By Jennifer Kaylin

22 **Fighting the good food fight**

Yale's Kelly Brownell has turned concern about obesity and the American diet into a debate about our "toxic food environment." Not everyone is pleased.

By Peter Farley

26 **Closing the gender gap**

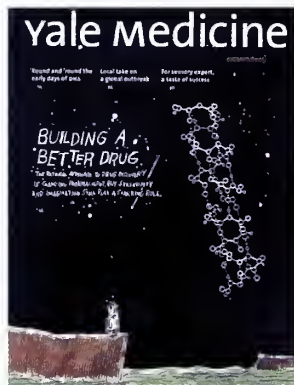
Once an exclusively male bastion, surgery is beginning to resemble the rest of academic medicine as more women join its faculty ranks.

By Cathy Shufro

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From the witness stand, more evidence on malpractice

Your article on the malpractice crisis ["Showdown," Summer 2003] prompted me to think about the huge challenges our profession confronts in the face of rising insurance premiums and jury awards against physicians. During 22 years as an expert witness in otolaryngology malpractice cases, I have learned that lawsuits can arise from almost any doctor-patient interaction and that a jury's determination of guilt or innocence is not always rational.

My first experience on the stand was in 1981 in a lawsuit filed against a physician who had treated a 20-year-old man for earache. Four days later, he came to a large, inner-city ER with stupor and seizures and died while under care. A post-mortem revealed high levels of heroin in his blood and a temporal lobe abscess, probably related to talc deposits in his heroin mixture. But the abscess was near the site of his recent ear infection, and the ENT was sued for alleged failure to diagnose a life-threatening situation.

After testifying on behalf of the physician, I was amazed to learn the case had been settled for an astounding \$450,000. I was even more aghast to hear that all the jurors had thought the physician at fault and would have awarded \$1.5 million to the plaintiff. The jury foreman told the judge that I had done a fine job but did not sway them.

Over the next 18 years I acted as an expert for the defense in more than 200 cases. During the past four years I have also done a small amount of plaintiff expert review, both to make me a more acceptable witness before the courts and in recognition that there are incidents of gross negligence in otolaryngology. It is true that HMOs and poor reimbursement have frustrated doctors, and it seems that these frustrations have contributed to worsened communication between referrers and

specialists and between physicians and patients. The easiest way physicians can avoid lawsuits is to listen to patients and to be honest with them about expectations. The level of distrust patients have in their medical care is at an all-time high, and this is something physicians must address.

I chose to leave my practice of 25 years to two well-trained otolaryngologists who are 10 years and 21 years younger than I am. I have no clear solution that will help them cope with the dilemmas of our malpractice crisis. National health care has been a failure in Canada (patients who can afford the best care come to our country quickly). The huge multispecialty groups that are gobbling up solo practices would appear to insulate them from litigation, but consolidation has not decreased the number of lawsuits.

We must police ourselves and not allow attorneys to do it for us. The small number of physicians who are providing substandard care should be identified by their colleagues and not be allowed simply to relocate to another state to inflict harm on a new community.

I wish the next generation of physicians good luck. It seems that fewer of our graduates, products of the Yale System, are going into clinical practice these days. Our grandchildren will depend on this group for their medical care. Who will remain to upgrade this talent gap?

*Donald Kent, M.D. '72, HS '76
Palm Harbor, Fla.*

Yale Medicine

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Changing medicine's cultural landscape

When I was a child in Washington in the early 1960s, I was present for, if not exactly cognizant of, the reaching of several milestones on the road to equal opportunity. One was Martin Luther King's "I Have a Dream" speech, which I witnessed from the Mall near the Lincoln Memorial with my parents at the age of 3. Another fell under the general heading of school desegregation; my first classroom experience was at a nursery school and kindergarten called Friendship House, which brought together children from varied racial, social and economic backgrounds. Friendship House was a success, and I still have a yellowed *Washington Post* photograph from the day Lady Bird Johnson came to our classroom for a visit.

Despite this atmosphere of equality, neither of my parents can recall an African-American physician among their acquaintances or on the staff at Children's Hospital, where my grandmother worked as a receptionist in one of the clinics. In fact, by 1970 only 2 percent of American medical students were members of underrepresented minority groups, compared to 13 percent today. While a significant step forward, that increase is not enough to balance the skewed demographics of American medicine, a situation that has inspired medical schools to try to diversify the physician workforce.

The article that begins on page 16, "An Insider's View," by Jennifer Kaylin, describes one of several efforts at Yale to promote diversity in the medical profession. The Summer Medical Education Program, funded by The Robert Wood Johnson Foundation, has graduated more than 765 participants in the past eight years at Yale and increased the number of students of color bound for careers in medicine. The six-week program is organized around the central idea that by exposing applicants to the culture of academic medicine and offering help in the classroom, it can greatly increase their chances of admission to medical school. The undergraduate students who come to New Haven each summer go on rounds, observe in the OR and ER and strengthen their communication and interviewing skills. The program works, says its co-director, at least in part "by fundamentally [altering] their view of the world."

Our cover story, "Closing the Gender Gap," tells of another demographic change, this one affecting the tradi-

tionally male-dominated discipline of surgery. Since the mid-1970s, Yale has trained an increasing number of female surgeons and now has one of the highest percentages of women on the surgical faculty. Contributing Editor Cathy Shufro explores the factors behind this change and profiles eight women on the Yale faculty, starting on page 26 and continuing on our website, info.med.yale.edu/yymm.

Finally, a parting note that takes us back to Washington, this time to the National Press Club. There, in early November, Associate Editor John Curtis received a top award from the Association of American Medical Colleges (AAMC) for his 2002 article, "Everyone Loves the Yale System. So Why Can't They All Agree?" It was the second year running that John received an Award of Distinction from the AAMC for his feature writing, and I doubt it will be the last time he distinguishes this magazine or the School of Medicine. If you missed these articles, they, too, may be read on our website by visiting the address above and selecting "Awards."

Michael Fitzsosa
michael.fitzsosa@yale.edu

SECOND OPINION BY SIDNEY HARRIS



"I THINK YOU'VE CROSSED THE LINE, ALPHONSE, FROM SEASONING TO HERBAL MEDICINE."



TOMASZ WALENTA

Preparing schools for the worst-case scenario

A Yale pediatrician trains educators in New York and around the world to help children cope with crisis.

In a hotel conference room last April in New York, Yale pediatrician David J. Schonfeld, M.D., guided 100 school counselors, teachers and administrators through a hypothetical school crisis: the star of a high school play has died of cancer, and classmates hold a fund-raiser in her memory to benefit medical research. When a television news team covers the event, they learn that a second student had died of the same form of cancer. They also report that toxic substances have been found in the soil around the school.

The next day half the student body is absent, and the school is surrounded by reporters; finally, the principal says that she has been diagnosed with another form of cancer.

Working in teams, Schonfeld's audience had to respond to each stage of the crisis. They discussed how to determine whether there were any health risks to students and staff; what to tell staff, students, parents and the press; and how to support the students, the principal and other staff. The teams had 10 minutes to spring into action, the same deadline many New York City educators faced on September 11, 2001.

In fact, the attacks on the World Trade Center were a major reason for the exercise. New York City school officials had asked Schonfeld, an associate professor of pediatrics with an appointment in the Child Study Center

who has been helping schools deal with crises for more than a decade, to train response teams that include educators, administrators, mental health professionals, nurses and safety personnel from the city's approximately 1,200 schools. Along with Scott R. Newgass, M.S.W., and David Szydlo, M.D., PH.D., Schonfeld provided more than 50 full-day workshops for teams from throughout the school system. With colleagues at the National Center for Children Exposed to Violence (NCCFV), he also developed guides for talking about 9/11, the anthrax scares, the war in Iraq and death.

Though the participants in the cancer-scare scenario groaned with each mounting crisis, they found the discussion instructive. Most had lived through 9/11, when administrators had to decide whether to send children home amid the chaos. Parents flocked to schools seeking not only their children but also information. News spread by word of mouth, more distorted with each telling. Teachers waited for hours with students who had no way to get home. And educators had to explain to children why this was happening while grappling with their own distress.

"It was hours and hours of dealing with things you never could have anticipated," said Janet Hughes, a Bronx high school principal. "There were a lot of things on the school level that people were just not prepared to deal with."

And not only in New York. Educators around the world are thinking more about how to help children cope with disasters, including plane crashes and earthquakes, as well as political violence. Schonfeld has also provided training in England, Sweden and Israel; in March 2003, he provided a series of workshops in Osaka and Tokyo as part of the establishment of Japan's National Mental Support Center for School Crisis.

Ten years ago Schonfeld was running the School Crisis Prevention and Response Initiative in New Haven, with an eye to designing a national model.

Today that model is in place as part of the NCCEV at the Yale Child Study Center. NCCEV grew out of the Child Development-Community Policing Program established by Steven Marans, PH.D., the NCCEV's director, and the late Donald J. Cohen, M.D. '66, who led the Child Study Center from 1983 until his death in 2002.

Schonfeld's model is broad enough to help guide children through a range of events. It helps educators plan for the needs of children and school staff at a time of crisis. It also aids schools in identifying and addressing symptoms of emotional distress and devising memorial events that are meaningful and healing. And the model emphasizes the importance of letting students vent. "When comments or questions come up naturally, if the teacher is ready for them, there can be useful discussion," Schonfeld said.

Schonfeld wants to bring mental health needs into the mainstream of pediatric medicine. As the physical health of children has improved, attention in pediatrics has shifted to developmental and behavioral concerns, a relatively new area of specialization. Yale's Department of Pediatrics recently created a subsection for developmental-behavioral pediatrics, and it is the site of one of nine fellowship programs funded in July 2003 by the Maternal and Child Health Bureau, an agency of the Department of Health and Human Services, for training in the emerging discipline.

In November 2002, the American Board of Pediatrics offered the first exam for certification in the field, but Schonfeld wasn't immediately eligible to take it, despite his obvious familiarity with the topic. He, along with other members of the subspecialty board, had to take a different test—one that they hadn't written themselves.

—Anne Thompson

In gleaming anatomy lab, more room to work and a new way of teaching

When the 100 students of the Class of 2007 donned their scrubs and rubber gloves on September 5, they became the first group to study anatomy in the new labs at the Anlyan Center for Medical Research and Education. As first-timers they had no point of comparison for the brand-new, shining, stainless steel facilities. But to anyone who has ever set foot in the old dissection rooms, one change was obvious.

"I'm working without a mask," said Lawrence J. Rizzolo, PH.D., associate professor of surgery and course director. He was, of course, referring to the strong odor of formaldehyde—or lack of it—in the new lab. Each station has a vent that draws odors out, and that drew a word of caution from William B. Stewart, PH.D., associate professor of surgery and chief of the anatomy section. "The last thing you ask yourself is, 'Did I turn the vent off?' Because if the vent is on 24 hours a day, your cadaver will be sucked dry," he said.

Rizzolo delighted in another difference—more space. "I can walk between tables," he said.

The extra space and absence of strong odors are more than mere creature comforts. They've led to a change in the study of anatomy. "Students often come back to work extra hours," Rizzolo said. "In the old lab your eyes would get itchy and your throat would get scratchy. The odor made you sick to your stomach if you stayed a long time."

The tables are bigger and there are more of them—40 as opposed to 32.

That means each dissecting station has four instead of five students. (Although only 25 tables are needed for medical students, others are used by the Physician Associate Program, residency programs and other institutions, such as Quinnipiac University, which don't have their own anatomy facilities.) Computer terminals, which were being installed at each station during the fall, will allow students to refer to online resources while they are dissecting. "If a question comes up at the dissection table, the instructor can just say, 'Let's look at the computer resource,' and make a point you can't make if the computers are 10 steps away," Rizzolo said.

Perhaps the biggest change for the first-year anatomy course has been the creation of what the faculty call "learning societies" within the class. Each is made up of 20 students and a mentor. "The idea is for these groups to develop a sense of community and share each other's work," Rizzolo said. "In the old labs, where everyone was standing on top of one another and it was hard to move around the lab, students would look at their own dissection and not look at who was next to them. ... The geography of the lab has allowed us to organize this massive number of students into manageable groups that then become a community."

—John Curtis



William Stewart, chief of the anatomy section, works with first-year students, from left, Krishan Soni, Michael Martinez, Aida Kuri and Danielle Guez, as they make their first incision into a cadaver.

Clinical-skills course prepares students for the wards and a new Step 2

Medicine became very personal for Jessica Kattan, a second-year student, shortly after she took a patient's history. "I figured he probably had the flu," Kattan said. But tests revealed Burkitt's lymphoma, a rare and aggressive form of cancer.

"The next time I saw him, he was very ill from his chemo," Kattan remembered. "Before that, this disease had just been some words in a book to me."

Kattan's experience was part of the "Doctor-Patient Encounter." Now called the "Preclinical Clerkship," it is a two-year course aimed at teaching skills that students will need to care for patients when they begin their clinical rotations. Margaret J. Bia, M.D., who has directed the course since 1999, sums up its content as the heart of "doctoring"—sensitive interactions with patients, thoughtful diagnoses and effective treatment plans.

For the past five years, Yale students have had their history and physical exam skills assessed at the nearby University of Connecticut assessment center at the end of their second year. This year, students are returning to the center at the end of their third year for an assessment of history and physical exam skills.

Students will also have to demonstrate their mastery of these skills on a new national exam that all medical students must pass in order to obtain a medical license. The exam, a new, second component of Step 2 of the United States Medical Licensing Exam (USMLE), will be required of all medical students graduating in 2005.

This emphasis on skills assessment is part of a national movement recognizing the importance of clinical skills in medical training and clinical care. According to a Harris Poll, two-thirds of Americans support the new national exam, a one-day test that strives to replicate a typical doctor's work day. Students will examine 10 standardized

patients—actors feigning symptoms and ailments—and formulate diagnoses and treatment plans.

The board that oversees the USMLE sees this as a matter of public safety, since good clinical and communication skills correlate with a lower incidence of malpractice suits, better treatment compliance and greater patient satisfaction. Slightly more than half of the medical schools in the United States now require a clinical-skills exam before graduation, yet a survey by the USMLE found that 4 percent of medical students had never taken a history or conducted a physical under the tutelage of a faculty member.

The exam is meeting resistance from the American Medical Student Association, because it will increase students' debt burdens by \$975, the cost of the exam, plus expenses to travel to testing sites—Philadelphia, Atlanta, Chicago, Los Angeles and Houston.

The new exam reflects a change from times past, when students picked up their clinical skills in large part by observing physicians. "Now we have 20-minute clinic visits, which markedly reduces the available time for students to practice and receive feedback," Bia said.

The "Preclinical Clerkship," taken in the first two years of medical school, fills that gap with weekly sessions that emphasize history taking and physical examinations. Students work with faculty to develop specific skills and meet weekly with clinical tutors who observe them taking histories and performing physical exams. Students learn communication skills—history taking, social history taking, breaking difficult news—in workshops where they practice on standardized patients before seeing real patients.

"Hopefully these developments in clinical-skills acquisition and assessment will lead to students graduating with a greater mastery of the skills they need to be compassionate, competent physicians," Bia said.

—Colleen Shaddox

Evaluation



JON CANNELL



HONORING AN NMR PIONEER

A June symposium, “From Molecules to Mind: Celebrating the Contributions of Robert G. Shulman to Biological NMR,” honored Robert G. Shulman, PH.D., Sterling Professor Emeritus of Molecular Biophysics and Biochemistry, for his use of nuclear magnetic resonance (NMR) to study metabolic pathways in live subjects. Shulman, a pioneer in magnetic resonance research, has used high-field NMR spectroscopy to follow chemical reactions and brain activity and to develop methods for localizing brain function. The symposium drew researchers and colleagues from around the world.

—John Curtis

For interns, a place to eat pizza and unload the stress of a frenetic first year

“Do I know enough to care for this patient?” “I feel so out of touch with the rest of the world.”

These thoughts are likely to pass through the mind of the typical intern during the first year of residency, a whirlwind time that has a component of self-doubt accompanying rapid learning and maturation. In the past, interns kept such worries to themselves. But at the Waterbury Hospital Health Center, 20 miles north of New Haven, first-year residents gather at noon each Friday to compare notes on the challenges and rigors of training.

The lunchtime talkfest is led by Seth R. Segall, PH.D., director of psychology at Waterbury Hospital, and Auguste H. Fortin VI, M.D., M.P.H., director of the psychosocial curriculum at Yale’s Primary Care Residency Program. Fortin, who said he was

“concerned that the house staff didn’t have a forum to share the feelings and the stresses of being an intern,” began holding the weekly meetings with Segall three years ago.

What is said in the room stays in the room. Over pizza and Pepsi, the interns talk about the issues that affect them on the ward—the death of a patient, the fear of an accidental needle stick, the grueling schedule that can lead to marital stress. “This is not a regular life,” said intern Juanita Smith, M.D., “so if you have other people around you who say, ‘Yes I feel that too,’ it makes you realize that your feelings are normal for the context that you are in.”

Segall starts each session with a few moments of meditation. “We’re training physicians to listen to themselves,” he said, “and I think that will help them to be more compassionate doctors.” Fortin would like to expand the program to Yale’s other primary care residency training hospitals, St. Mary’s in Waterbury and Yale-New Haven.

—Lisa Quirindongo

et cetera ...

LATE NEUROSCIENTIST HONORED

In recognition of her pioneering work on the brain’s frontal lobe and her studies of the cerebral cortex and its links to schizophrenia, the National Alliance for Research on Schizophrenia and Depression (NARSAD) has created a prize to honor Patricia S. Goldman-Rakic, PH.D., who died in July after being struck by a car. And in November, Pfizer announced that it will fund a graduate fellowship in neuroscience in honor of Goldman-Rakic, the Eugene Higgins Professor of Neurobiology. Each year, an outstanding graduate student in the Combined Program in Biological and Biomedical Sciences will receive full support for a year’s study.

NARSAD announced The Dr. Patricia S. Goldman-Rakic Memorial Prize for Cognitive Achievement in Neuroscience in October. The annual \$40,000 prize will reward “excellence in neurobiological research at the cellular, physiological, or behavioral levels that may lead to a greater understanding of major psychiatric disease.”

The first recipient of the award is Solomon H. Snyder, M.D., chair of neuroscience at Johns Hopkins and a longtime friend and collaborator of Goldman-Rakic. Snyder discovered the role nitric oxides play as a class of neurotransmitter in the brain and created techniques for understanding and manipulating brain receptors.

—John Curtis

CHAGAS DRUG LICENSED TO NONPROFIT

The nation’s first nonprofit pharmaceutical company has licensed a new class of compounds from Yale and the University of Washington that could lead to treatments for the parasitic Chagas disease, which affects between 16 and 18 million people, mostly in Latin America.

The compounds, called azoles, were developed by teams led by Andrew D. Hamilton, PH.D., deputy provost for science and technology at Yale, in collaboration with faculty at the University of Washington. Azoles inhibit production of a chemical that is necessary for the survival of the parasite *Trypanosoma cruzi* without harming human cells.

The Institute for OneWorld Health in San Francisco will have exclusive license to develop azole compounds.

—John Curtis

The surgical approach to morbid obesity

Rising demand for gastric bypass procedure keeps Yale surgeon busy and looking for reinforcements.

Americans spend \$33 billion annually on products and services they believe will help them lose weight. The investment is usually a bad one, as sustained weight loss remains an elusive goal in an increasingly supersized nation. According to the U.S. Surgeon General, 61 percent of American adults are

overweight or obese (as are 13 percent or more of children aged 6 to 19) and face a higher risk for diabetes, heart disease and other illnesses.

This may be why Robert L. Bell, M.D., HS '01, is one of the busiest surgeons on the Yale faculty. Recruited in 2002 after a fellowship at the University of Maryland, Bell brought with him a minimally invasive procedure known as laparoscopic gastric bypass, in which the surgeon uses special instruments to create a small gastric pouch, then attaches a y-shaped limb of small bowel to form the outlet

to the intestines. After surgery the patient's appetite is sated by very small amounts of food; a 50 to 80 percent loss of excess body weight is typical. The procedure is appropriate for patients who are morbidly obese—generally 100 to 400 pounds overweight—and for whom other methods of weight loss have failed.

Similar procedures were performed occasionally at Yale, as open surgery, about 15 years ago. Doing the bypass laparoscopically, while reducing complications and discomfort for patients, is relatively rare because of the elite skill level the procedure demands, said Robert Udelsman, M.D., M.B.A., chair of the Department of Surgery, who recruited Bell to Yale. Seeing someone perform the delicate operation guided only by video images amazes students and veteran surgeons alike. Bell, said Udelsman, "is of the Star Wars generation." Speaking at grand rounds in September, Udelsman said Bell has a six-month waiting list and may soon be joined by a second surgeon. "It may be we'll need seven bariatric surgeons," Udelsman said. "I don't know." Patient interest in the procedure has soared nationally since NBC weatherman Al Roker lost more than 100 pounds following the surgery in 2002.

Pre- and postoperative care are as crucial as the surgery itself, said Bell, and are the factors that distinguish well-run programs. Each patient must be evaluated by a psychiatrist or psychologist and a dietician before being accepted as a candidate for surgery. All of Bell's patients are what he terms "professional dieters" who have gone the traditional diet and exercise route many times without being able to shed weight permanently.

But for Bell's patients, losing weight is a matter of health more than appearance. "You're not going to be a size 2," Bell tells them. His goal is to bring their weight down enough to reduce the health risks associated with obesity. Postoperative support is equally important. With less room to accommodate



When it comes to defining outcomes, caregivers and patients don't always agree

Physicians often turn to a patient's friends or family members to make a decision on medical treatment. But a Yale study has found that seriously ill elder patients and caregivers disagreed approximately 40 percent of the time over the acceptability of outcomes such as memory loss, physical impairment and chronic pain.

According to Terri R. Fried, M.D., lead author of a paper published in the *Archives of Internal Medicine* in September, this is "the first study that asked how acceptable different states of health would be as a result of treatment." Fried, an associate professor of internal medicine (geriatrics) at the School of Medicine, said caregivers may not be representing patients' desires.

Although approximately 60 percent of patient-caregiver pairs agreed on the acceptability of severe memory loss as an outcome, about 40 percent could not agree. An outcome of chronic pain generated 35 percent disagreement, and being bed-bound evoked 43 percent disagreement. Without treatment, patients faced further decline and death. The 193 patients in the study were over age 60 and seriously ill with cancer, congestive heart failure or chronic lung disease.

According to Fried, patients and their caregivers are often in denial about the illness and try to spare each other's feelings. The failure to discuss difficult possibilities leaves caregivers ill-prepared to make treatment decisions for seriously ill patients.

Physicians must educate the patient about the course of the illness and the decisions that need to be made, Fried said. "Most patients do have strong views about the quality of life," she said. "We need to translate that into choices that are useful in medical decision making, and that's what we tried to do in the study."

—Mary Anne Chute Lynch

food, patients need to be sure that they are using the smaller gastric pouch to get adequate nutrition; otherwise protein deficiency and other complications can result.

Hunger is not a problem. "The brain is fooled into thinking that the body is in a full state," said Bell. Levels of the appetite-stimulating hormone ghrelin, which spikes prior to a meal and dips after a meal, stay consistently low in gastric-bypass patients. This may hold some clue as to why these patients generally avoid the "yo-yo" dieting syndrome that plagues many who try to lose weight by nonsurgical means.

Acceptance of surgical treatment for obesity is growing, but societal preconceptions about obesity linger. "It truly is the last accepted form of bigotry," Bell said. The simplistic assumption is that obese people are overweight because they are lazy and/or they eat too much, but science increasingly belies that idea. One of Bell's colleagues is fond of giving the bariatric surgeon some advice on dealing with patients: why don't you just tell them to eat less?

"Of course, he's kidding," said Bell. "Mostly."

—Colleen Shaddox

CLOZAPINE AND DIABETES RISK

Patients taking the antipsychotic drug clozapine have a higher-than-average chance of developing diabetes, but recent research suggests that clinicians may not be finding at-risk patients.

In a study by Michael J. Sernyak Jr., M.D., HS '91, professor of psychiatry, a screening of 121 patients taking clozapine—none previously diagnosed with diabetes—found that 23 percent showed elevated glucose levels, a frequent precursor to diabetes. The results suggested that a patient taking clozapine should be followed closely, said Sernyak, chief of psychiatry at the VA Connecticut Healthcare System in West Haven. Sernyak said that early intervention would reduce morbidity and the high costs of the complications of diabetes. The study was funded by the Department of Veterans Affairs and reported in May in *The Journal of Clinical Psychiatry*.

—Cathy Shufro

DRUGS AND THE ADOLESCENT BRAIN

The adolescent mind that impels teenagers to dye their hair purple and go airborne on skateboards also makes them more vulnerable to drug addiction. According to an analysis by Yale researchers of more than 140 studies in the basic and clinical neurosciences, their stage of brain development is to blame. "Several lines of evidence suggest that sociocultural aspects particular to adolescent life alone do not fully account for greater drug intake," said R. Andrew Chambers, M.D., assistant professor of psychiatry and lead author of the study published in June in *The American Journal of Psychiatry*. "And while we strongly suspect that genetic factors in individuals can lower the threshold of drug exposure required for 'tripping the switch' from experimental to addictive drug use," Chambers said, "here we have a phenomenon where a neurodevelopmental stage common to virtually everyone, regardless of genetic make-up, confers enhanced neurobiological vulnerability to addiction."

—Cathy Shufro

On tumor's surface, a telltale molecule

Yale scientists discern an abnormal sugar that gives cancer cells mobility but also gives them away.

The little white grains that sweeten our cereal at breakfast are usually all we have in mind when we speak of "sugar." Inside the human body, though, sugar exists in many forms, most of them readily convertible to energy. Each of these contributes to everyday functioning and the maintenance of general good health. But when John M. Pawelek, PH.D., senior research scientist in dermatology, observed strangely branched oligosaccharide molecules crowded together on the surface of one particular type of cell, he knew those sugars had nothing to do with good health: the cells had all come from human metastatic tumors.

"There have been 20 years of work, *in vitro* and in animal models, showing

that cancer cells tend to exhibit sugars on their outer surface that aren't present on their normal-cell counterparts, but no one had sat down and said, 'Let's look for these sugars in human cancer cells,'" said Pawelek. When he and Tamara Handerson, M.D., of Tufts University did just that, using a Yale-designed tumor microarray, they were surprised at the near-universal results. "We've now looked at slides from perhaps 500 different human metastases and found just a handful that don't have these sugars," said Pawelek. Handerson and Pawelek published their findings in the September 1 issue of the journal *Cancer Research*.

Normally, such oligosaccharides appear only on the surface of the immune system's white blood cells, or leukocytes, where their function is to allow the leukocytes to move on their own—as they must do in order to patrol the body and attack foreign cells effectively. In cancer cells, the same power of movement is conferred by the abnormal oligosaccharides on their surface and may play a key role in metastasis, the spread of malignant disease from one organ or part of the body to another.

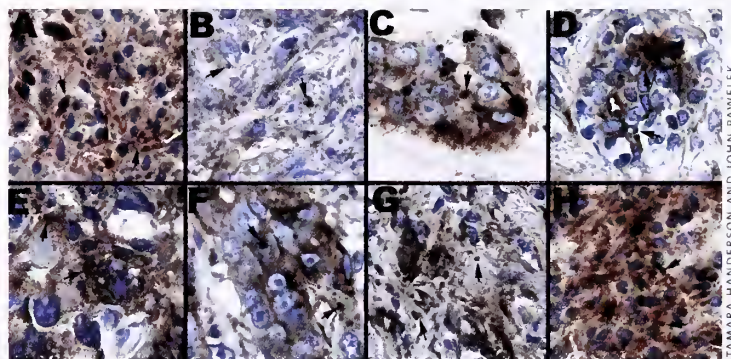
But the oligosaccharide coating on the cell surface that makes the tumor cells mobile may also make them easier to find and more vulnerable to cancer-suppressing therapy, says Pawelek. Since the branched oligosaccharides

appear almost exclusively on cancerous cells and are readily detected by a method of staining known as lectin histochemistry, the sugar coating provides a strong tool for diagnosis as well as for locating precisely the populations of cells that require treatment. Pawelek and Handerson, in collaboration with Robert L. Camp, M.D., PH.D., associate research scientist in pathology, and David L. Rimm, M.D., PH.D., associate professor of pathology, also carried out studies focusing specifically on breast cancer, in which they found that the quantity of abnormal sugar present in cells from a patient's biopsy is a reliable inverse index of the patient's odds for survival: the more oligosaccharides, the greater the likelihood that the cancer will be fatal. The index seems to work independently of the well-known risk factors: stage and type of cancer, age of patient and even the extent of metastasis. As Pawelek sees it, "This is a completely new predictor."

At the same time, the pervasiveness of the sugar coating among cancerous cells means that any treatment that destroys tumors by attacking the oligosaccharide molecules could probably be applied to a broad range of carcinomas, from cancer of the breast, lung or colon to prostate cancer or Hodgkin's lymphoma. "What we have now is a universal target," said Pawelek, adding, "If you have something that is characteristic of all metastases, it's really worth your while to go after it."

While continuing to apply the tumor microarray technique to as many types of cancer as possible, the scientists are also seeking to learn more about the workings of the branched oligosaccharide structures on the surface of tumor cells. Most important, said Pawelek, "We're going to put all our efforts into exploiting these sugars for therapy, because in the end, we'd rather get rid of them than have them here to study."

—Sandra Ackerman



Stains on a microarray of human carcinomas show the presence of sugars, which are particularly prominent in metastases.

A new class of RNA molecule may help cells decide how and when to grow

Two members of a class of tiny RNA molecules discovered only a decade ago have been shown to play a role in the timing of cell differentiation, according to a Yale researcher.

Biologist Frank J. Slack, PH.D., who four years ago discovered the microRNA *let-7*, the second microRNA known to scientists, says that understanding the function of these regulatory RNAs in the millimeter-long nematode *C. elegans* may provide insight into human biology as well.

"Because *C. elegans* shares half its genes with humans, we hope to extend to humans what we've learned about how microRNAs function in *C. elegans*," said Slack, an assistant professor of molecular, cellular and developmental biology, whose findings were published in *Developmental Cell* last May.

Slack showed that these noncoding RNAs provide temporal cues that control the larval worm's maturation. The microRNAs determine when key DNA-binding proteins are active. MicroRNAs turn off the genes that block neuronal development and cell differentiation, thus ensuring that differentiation occurs at the right time.

Although the first microRNA, *lin-4*, was not detected until 1993, microRNAs are now known to occur in the cells of many organisms, from weeds to humans. MicroRNAs are identified by their shape, initially a hairpin, and by their small size. (The ones Slack studied are 21 nucleotides long, while messenger RNAs generally exceed 1,000 nucleotides.) "They're pretty widespread, and yet we didn't know about them for so long. That's why everybody is so excited," said Slack. "The field has exploded."

Slack was a postdoctoral fellow at Harvard in 2000 when he identified *let-7*, seven years after the discovery of *lin-4* by Victor R. Ambros, PH.D., at Dartmouth. Slack's discovery suggested that the microRNA that Ambros had identified was not an anomaly. Since then, researchers have identified about 400 microRNAs, the products of genes encoded in the genomes of a wide range of organisms. So far, however, scientists understand how only a handful of those microRNAs function.

Researchers hope that humans may be able to harness the ability of microRNAs to turn off harmful processes, such as the development of cancer cells or the replication of disease-causing viruses. Slack speculated that such applications are a decade away.

—Cathy Shufro

et cetera ...

TOUCHED BY AN ILLUSION

Why would multiple real stimuli register as a single stimulus in the brain? A paper published September 18 in the online edition of *Science* explains this quirk of perception, known as the tactile funneling illusion.

Yale neurobiologist Anna W. Roe, PH.D., and her colleagues studied the illusion in a portion of the primary somatosensory cortex (SI) of squirrel monkeys. They found that whenever they administered a mild electrical stimulus simultaneously to two nonadjacent fingers of the animal's hand, the SI showed two separate activation spots that corresponded to the two sites of stimulation. By contrast, when they delivered simultaneous stimuli to two adjacent fingers, the SI showed a single activation spot located midway between the two sites. The study indicates that, contrary to previous thought, a finger's "receptive field" for sensory stimuli can sometimes extend beyond the finger itself—a notion that could someday find clinical application, for example in rehabilitation after injury or stroke.

—Sandra Ackerman

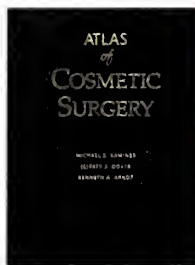
RO'S ROLE IN LUPUS

An estimated 1.5 million Americans suffer from lupus erythematosus, an autoimmune disorder that causes aching joints, fever, fatigue, numerous skin lesions and hypersensitivity to light. Many lupus patients carry in their blood an antibody against the autoantigen Ro 60-kDa. This RNA-binding protein passes unnoticed in the normal immune system but is the target of an abnormal immune response in these patients. Nevertheless, the role of Ro in lupus erythematosus has been unclear.

When Sandra L. Wolin, M.D./PH.D. '85, associate professor of cell biology and molecular biophysics and biochemistry and a Howard Hughes Medical Institute associate investigator, and colleagues developed a knockout mouse without the gene for making the Ro protein, the mouse developed an autoimmune syndrome similar to lupus. The authors suggest that Ro may serve a quality control function by recognizing misfolded, defective RNA molecules. When Ro is absent, abnormal RNA-protein complexes may accumulate and be viewed as foreign by the immune system.

—Sandra Ackerman





Atlas of Cosmetic Surgery

edited by Michael S. Kaminer, M.D., assistant clinical professor of dermatology, Jeffrey S. Dover, M.D., associate clinical professor of dermatology, and Kenneth A. Arndt, M.D. '61, HS '62, clinical professor of dermatology

W.B. Saunders Co.
(New York) 2002; 476 pages

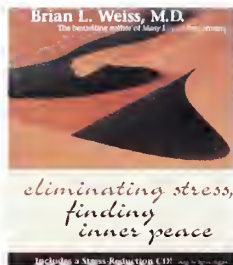
Experts present hands-on guidance for performing a broad range of cosmetic surgical procedures, including face lifts, laser resurfacing, blepharoplasty for the eyelids, hair transplantation, hair removal, chemical peeling, laser treatment of brown and red lesions and liposuction. Clinical photographs, combined with two-color illustrations, demonstrate how to proceed and what outcomes to expect.

Eliminating Stress, Finding Inner Peace

by Brian L. Weiss, M.D. '70

Hay House
(Carlsbad, Calif.) 2003; 100 pages

Stress kills, there's no doubt. Stress eats away at our happiness and joy, as well as our stomach lining. It raises blood pressure and directly harms our cardiovascular system. Stress depresses our immune system and allows chronic illnesses to overwhelm us, causing pain, disability and even death. This book, which includes a stress-reduction CD, will enable readers to release the acute and chronic stress we constantly carry in our bodies and our minds. It can help us remove the blocks and obstacles to inner peace and joy, and prevent and heal stress-related illness and disease.



Medicine's Brave New World: Bioengineering and the New Genetics

by Margaret O. Hyde and John F. Setaro, M.D., HS '86, associate professor of medicine

21st Century Books
(Brookfield, Conn.) 2001; 144 pages

The authors present a host of medical breakthroughs and ponder the future of many versions of genetic manipulation to support medical science. Topics include fertility advances, xenotransplantation, stem cell research, cloning, the Human Genome Project and genetic testing. There are also some notes of caution as the authors consider some of the many ethical objections to genetic research.

Help Me to Heal: A Practical Guidebook for Patients, Visitors, and Caregivers (Essential Tools, Strategies, and Resources for Healthy Hospitalizations and Home Convalescence)

by Bernie S. Siegel, M.D., HS '61, and Yosaif August

Hay House
(Carlsbad, Calif.) 2003; 200 pages

Every hospitalization, period of convalescence or visit to a patient can be an opportunity for healing. This book is a resource to help readers realize this healing potential. It provides the empowering tools, strategies and resources that will enable readers to turn their bedside environment and illness experience into a sacred space and time where healing can occur.



100 Questions & Answers About Ovarian Cancer

by Don S. Dizon, M.D., HS '98, Nadeem R. Abu-Rustum, M.D., and Andrea G. Brown

Jones and Bartlett Publishers
(Sudbury, Mass.) 2004; 160 pages

Written by a gynecologic oncologist, a gynecologic surgeon and an ovarian cancer survivor, this book offers practical answers to questions about treatment options, posttreatment quality of life and sources of support for ovarian cancer patients, family and friends.

Fishman's Manual of Pulmonary Diseases and Disorders, 3rd ed.

by Alfred P. Fishman, M.D., Jack A. Elias, M.D., professor of medicine, Jay A. Fishman, Michael A. Grippi, Larry R. Kaiser and Robert M. Senior, M.D.

McGraw-Hill Professional
(New York) 2002; 1,174 pages

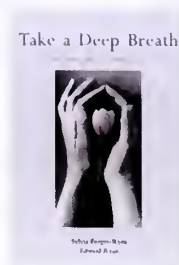
This quick-reference pocket manual presents important clinical information contained in the two-volume *Fishman's Pulmonary Diseases and Disorders, 3rd ed.* For each condition, the manual covers clinical evaluation, work-up, differential diagnosis and treatment.

Take a Deep Breath: The Haiku Way to Inner Peace

by Sylvia Forges-Ryan and Edward R. Ryan, PH.D., associate clinical professor of psychology in psychiatry

Kodansha International
(New York) 2003; 129 pages

This volume provides guidance on combining the ancient forms of haiku and meditation to improve health. The authors see



haiku as the perfect form for their exercises because a few phrases can set off a chain of thoughts, which when incorporated into meditation lead to insights that can be used to enhance well-being.

Compelled by Data: John D. Thompson, Nurse, Health Services Researcher and Health Administration Educator

edited by William D. White, PH.D., former associate professor of public health

Department of Epidemiology and Public Health, Yale University
(New Haven) 2003; 199 pages

This volume celebrates the life and accomplishments of John D. Thompson, a distinguished and inspiring leader in the fields of health services research and health administration education. Thompson's career spanned more than 40 years, including over 30 years as a member of the faculty of the Department of Epidemiology and Public Health at Yale.

The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to cheryl.violante@yale.edu





MICHAEL FITZSOUSA



ANNA QUINDLEN



HARRIET MCBRYDE JOHNSON



ALICE WATERS

At grand rounds, sex columnist comes armed with advice

In the 1960s, Masters and Johnson moved the study of sex away from the anecdotal and into the scientific realm: they observed sexual encounters in a laboratory, monitoring brain waves, heart rates and signs of arousal. "Everything that could be measured was measured," Ruth Westheimer, ED.D., said during Department of Psychiatry grand rounds in September. "You may be wondering how they were able to find subjects willing to perform on demand. ... Fortunately for all of us, there were medical students who needed money," she said, to much laughter.

"Dr. Ruth," who has for decades dispensed her advice on the radio, in newspaper columns and in books, said that medical schools should include sexuality in their curricula. "Many of you will be 'significant others' for your patients when it comes to information about sexuality," she said, adding that students should also have the opportunity to consider their own feelings about sex. For example, "Doctors can get aroused examining their patients. If you do, go out and get a glass of water—there's no time to take a shower!—or take a deep breath. ... Be aware of it but don't get upset. If you're aware, you can go on and ask the next question."

—Michael Fitzsouza

Stressing the human touch in health care

When Anna Quindlen told a friend with AIDS she was giving a talk at the Yale School of Nursing, the friend said, "Tell them to treat the patient, not the file."

Quindlen, a Pulitzer Prize-winning columnist and author, did just that when she delivered the 38th annual Sybil Palmer Bellos lecture recently. She stressed the need for doctors to apply a "human touch" and credited women with pushing the health care pendulum in that direction. "We have the most astonishingly competent health care system in the world," she said. "Now we want it to be as empathetic as it is competent."

Quindlen spoke from experience. During her mother's losing battle with ovarian cancer, she said, "there was no attempt on the part of her doctors to engage with her or us as people." But times have changed as more women have entered the profession, and women, the chief health care consumers, have demanded personalized attention.

She sees parallels between journalism and health care. Newspapers diversified their content because consumers demanded it. Quindlen says her *New York Times* column focused on the "human experience" because that's what she and readers found most satisfying. She's optimistic that health care providers are finally realizing that's what patients want, too.

—Jennifer Kaylin

Fighting assumptions about the disabled, as well as bias

People assume that the nation's estimated 50 million disabled people live lives of grim struggle, says Harriet McBryde Johnson. That's untrue, says Johnson, a South Carolina lawyer who uses a wheelchair because of a congenital neuromuscular disease. Such assumptions about disabled people constitute prejudice akin to racism, she said in a September talk on campus. "Our lives are interesting and rich," said Johnson, who wants disabled people to "bear witness to our pleasures."

Johnson garnered national attention in February 2003 with an article in *The New York Times Magazine* describing her conversations with Princeton ethicist Peter Singer, who argues that it is ethical to kill severely disabled babies, an argument based, in part, on assumptions about quality of life. Johnson acknowledges that disabled lives, like nondisabled lives, include some suffering. She, for example, is dealing with a swallowing problem that sometimes makes her a "basket case. ... But I wouldn't say I need to be euthanized; there is much more to my life than swallowing," said Johnson. Nor does she want to be a special case, or "a little Harriet exception" to prejudice. "I believe that living our strange, peculiar lives is a contribution, and doing it openly and without shame is really a revolutionary act."

—Cathy Shufro

On eating well, and bringing values to the table

The family meal was once the central civilizing activity in a child's life, says Alice Waters, owner of Chez Panisse, the trendsetting restaurant in Berkeley, Calif. She acquired her own core beliefs "almost unconsciously, at the table of my family." Nowadays, however, families no longer give priority to the "ritual of the table," she said in September at a colloquium sponsored by the Program in Agrarian Studies.

Waters believes public schools can help restore that daily ritual by encouraging children to grow, prepare and eat their own food and by making lunch a for-credit course. In The Edible Schoolyard, a program she helped found at a Berkeley public middle school, she says students not only find that work can be a pleasure, but also learn to think seriously about food and where it comes from, and to relate to each other in a respectful and social way. Waters wants schools nationwide to follow suit, creating "a curriculum that teaches the essential values of nourishment, community and stewardship of the land." She said funding must be found, because unhealthy food, inactivity and the destruction wrought by factory farming carry hidden costs.

Waters has already helped to transform cuisine on the Yale campus. She's an advisor to the Berkeley College dining hall, which last fall began serving mostly seasonal, sustainably grown foods. The menu attracts more diners than the college can serve.

—Cathy Shufro

A nurturing vision

By Colleen Shaddox

The medical school's external face owes a great debt to a pioneer of American landscape design.

Inside Sterling Hall of Medicine, brain specimens from Harvey Cushing's collection share shelf space with 19th century physicians' implements, historic photographs and aging tomes on the healing arts. But the medical school's wealth of notable specimens is not confined to the great indoors.

Outside its walls, an observant visitor can spot the sycamore tree the grounds crew calls the Hippocratic

Growth, which grew from a seed that came from the birthplace of Hippocrates in Greece. Within its courtyards grows one of the only American elms to survive New Haven's Dutch elm outbreak in the 1930s. And the landscaping for the medical campus—for much of the university, in fact—is the design of Beatrix Jones Farrand, one of the first American landscape architects. Farrand studied landscapes and plants

during an apprenticeship at Harvard's Arnold Arboretum, and as a young woman made several grand tours of Europe—one with her aunt, novelist Edith Wharton—where landscape paintings and vistas of the Old World informed her sense of design.

Before coming to Yale in 1922 to start almost a quarter-century of landscape consulting, she designed gardens at Princeton and Dumbar-

The 1920s were considered boom years for the School of Medicine and in 1925 the Sterling Hall of Medicine was dedicated. Planning for the building began in 1921, and its construction was the crowning achievement of Milton Winternitz's tenure as dean.



*Study for Entrance
The Institute of Human Relations and
the Sterling Hall of Medicine
Yale University*

MANUSCRIPTS & ARCHIVES, YALE UNIVERSITY LIBRARY (2)

Beatrix Farrand's designs could be seen in the planning for the Institute of Human Relations, which was dedicated in 1931. The institute, which occupied the left portion of the remodeled Sterling Hall of Medicine (above), expanded the building and added a central façade.

ton Oaks in Washington. At Yale her first project was the Memorial Quadrangle, now Branford and Saybrook colleges. She went on to design grounds at the divinity school, the president's house, the residential colleges and the medical school.

Although many of the gardens at the medical school remain out of view to the public, Channing C. Harris, senior associate with Towers/Golde, Landscape Architects and Site Planners, and a longtime landscape consultant to Yale, said that horticulture helps to shape life on Cedar Street. On the large lawn outside Harkness dormitory students receive their white jackets in the fall, their medical degrees in the spring, and in between bask in the sunshine enjoying *pad thai* and other treats from street vendors. The narrow planting beds along the street pour color into the neighborhood, along with the honeyed fragrance of Russian olive.

Towers/Golde has done site and landscape design for new building and renovation projects, courtyards, rooftop gardens and streetscapes at Yale for 25 years. This work often involves efforts to preserve older trees and mature plantings, or recreate Farrand's original landscapes. Where possible, Harris said that he tries to be true to Farrand's philosophy, but practicality can dictate change. For example, Farrand loved climbing vines, many of which damage buildings. So the wisteria has mostly gone.

Farrand believed that the landscape was as important to university life as the classroom: "We all know that education is by no means a mere matter of books, and that the aesthetic environment contributes as much to growth as facts assembled from a printed page,"

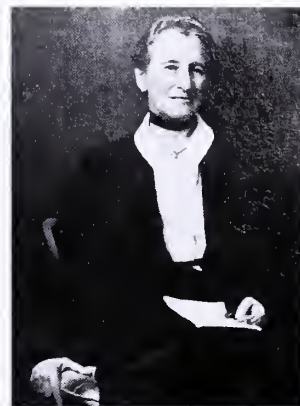
she told the alumni weekly at Princeton in 1926.

When the roof of the Yale Animal Resources Center, then located in the B wing of the Sterling Hall of Medicine, developed leaks in 1986, the School of Medicine restored a rooftop garden in keeping with Farrand's original vision. Using historic photographs, Norman Brody, the medical school's associate director of buildings and site services, and his team of carpenters recreated original trelliswork, and roses and weeping cherries now complete the genteel scene. There is even some wisteria, a maintenance nightmare that Brody restrained himself from clipping back for two full years.

Throughout Yale, many gardens have been lost to new buildings and renovations. At the medical school new construction constantly encroaches on the flora. But great care is taken to preserve important specimens and to expand plantings wherever possible. The more venerable and fragile trees in Farrand's gardens give Brody "a white-knuckle ride every winter," he said. By and large they make it.

A number of improvements that would bring more blooms and greenery to Cedar Street between York Street and Congress Avenue are under consideration. Farrand favored spring- and fall-blooming plants, reasoning that no one would be on campus during the summer. But the new plantings would extend floral displays into the summer months in recognition that life on Cedar Street is now a 12-month affair.

Colleen Shaddox is a freelance writer in Hamden, Conn.



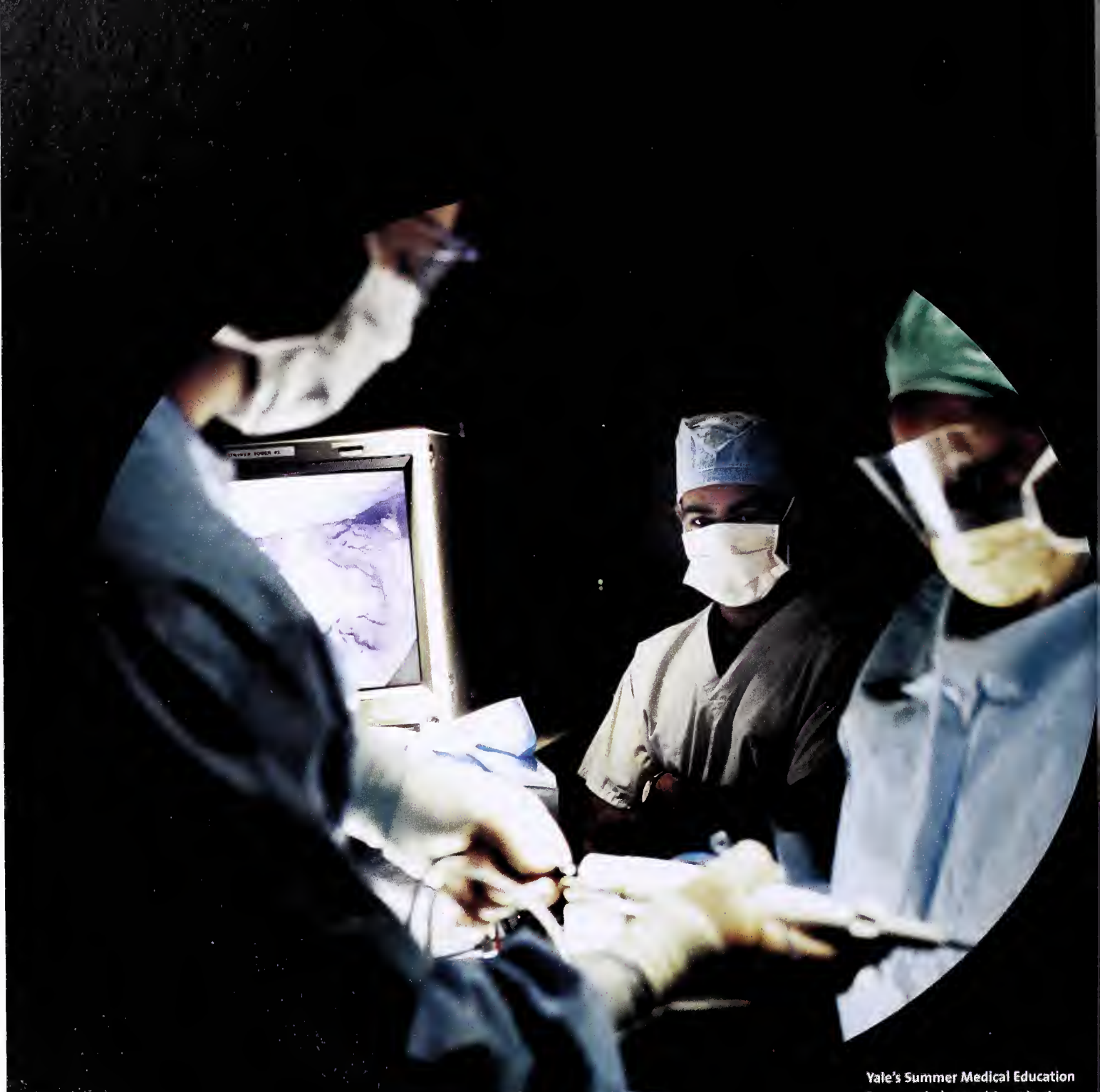
FROM BEATRIX FARRAND'S AMERICAN LANDSCAPES

Beatrix Farrand came to Yale in 1922 and stayed for almost 25 years. While at Yale she designed landscapes for the divinity school, residential colleges and the medical school.



JOHN CURTIS

Still standing on Harkness Lawn is a sycamore that is sometimes referred to as the Hippocratic Growth. The tree grew from seeds imported from Ephesus, the birthplace of Hippocrates in ancient Greece.



Yale's Summer Medical Education Program helps aspiring physicians to understand what's in store for them in medical school. Elvis Rodriguez (center) donned scrubs to observe a gastric bypass operation performed by Robert Bell (left).

An insider's *view*

A summer program to encourage diversity in the health professions shows college students a clearer path to becoming a doctor—by acquainting them with the art, science and culture of medicine.

By Jennifer Kaylin

Photographs by Terry Dagradi

It's nearly 1 a.m. on Sunday morning of the July 4 weekend, and the constellation of examination cubicles and work stations in the Yale-New Haven Hospital emergency department is as peaceful as a library. Patients who have already been treated rest comfortably on stretchers while awaiting rooms upstairs. Meanwhile, doctors and nurses review files, check e-mail messages and talk quietly about fireworks displays and holiday traffic. Suddenly the triage nurse gets a radio dispatch. "How many?" she asks, and then immediately activates the trauma response. Spines straighten and conversation stops as everyone in the room is ordered to gown up in sterile clothing.

Minutes later the doors fly open and a platoon of firefighters and EMTs wheel in a stretcher carrying a young man who is screaming in pain. The trauma team moves the patient to a hospital bed, cuts off his clothing and crowds around to assess his condition: "He's nonverbal." "He has blood in his mouth." "130 over 90." "Two broken teeth." "Anesthesia to trauma room STAT!" While this is going on, another victim from the same car accident is rushed in. She is even younger and is also howling in pain. "How many more?" somebody yells. "They're saying three," answers a nurse.

Standing on the periphery of this scene, but watching with the owl-eyed intensity of judges, are three college students. They are here as part of an intensive six-week summer course designed to encourage diversity in the physician workforce, in part by helping underrepresented minority students improve their chances of getting into medical schools.

"Seeing someone my own age in so much pain was kind of upsetting," Leonie Prao, a Howard University junior,



Students on the midnight shift in the Yale-New Haven Hospital emergency department watched as a car accident victim was treated.

says later that night. Upsetting, but also invaluable, as she and her fellow classmates gain exposure to real-life medical situations and decide whether they're cut out to be doctors. "I just tried to tune out the screaming and focus on what the doctors were saying," she says.

"It kind of threw me," admits Rochelle Chijioke, a Georgetown University junior. "But I'm pretty calm in stressful situations, so I don't think it's anything I couldn't handle."

Students attend this intensive course, the Summer Medical Education Program (SMEP), tuition-free and receive a small stipend to offset the income they would have earned at a summer job. The program, now offered at 11 sites around the country, was started in 1988 by The Robert Wood Johnson Foundation with the specific aim of increasing the number of medical students from underrepresented minorities, especially African-Americans, Hispanics and Native Americans. Originally called the Minority Medical Education Program (MMEP), it has since expanded to include members of other groups not thought of as minorities but which may be under-

represented in the medical profession. For example, white students from rural areas lacking in health care resources have participated, as have non-minorities from economically or educationally disadvantaged backgrounds. At one program site, organizers say, the presence of a disadvantaged white student changed the outlook of classmates who said they had assumed all white people were wealthy.

This gradual broadening of the program's focus was reinforced last June, when the U.S. Supreme Court ruled in two affirmative action cases involving the University of Michigan. The court upheld the Michigan law school's "narrowly tailored use of race in admissions decisions" because it treated all the applicants as individuals. In contrast, the university's undergraduate admissions policy, which also encouraged diversity, was rejected by the court because it took an approach that was deemed mechanistic, automatically awarding bonus points, for example, to applicants on the basis of their race or ethnicity.

The foundation and the Association of American Medical Colleges (AAMC), which administers SMEP, used the Supreme Court ruling as an occasion to reexamine the summer program's goals and operations. In December, they dropped "Minority" from the name and rechristened it the Summer Medical Education Program. The announcement on the program website said that SMEP "will no longer identify itself solely as a program for applicants from historically underrepresented racial and ethnic groups." While affirming the need for a pipeline to help these applicants enter careers in medicine, the sponsors said that "the benefits of diversity cannot be fully realized by a program that focuses narrowly on certain groups by excluding others."

A transforming experience

Since 1988, more than 10,000 students have participated in the program, and of the 5,500 who have applied to medical school, 63 percent were accepted, according to the AAMC. A 1998 study published in *JAMA: The Journal of the American Medical Association* found that among students with identical GPAs and MCAT scores, program graduates were more likely to get into medical school than others. The largest improvement was seen in the acceptance rate for African-American males.

"It definitely gives applicants a certain edge. It helps them present themselves as a much better candidate to medical schools," says Richele Jordan-Davis, director of diversity and minority affairs at Columbia University's College of Physicians and Surgeons, which has accepted graduates from Yale's program and became a program site itself three years ago.

Kevin Harris, a senior staff associate with the AAMC's division of community and minority programs, says about one in every six underrepresented minority students enrolled in U.S. medical schools is an SMEP graduate. "That's a pretty large piece of the pie, so we feel very strongly that SMEP is a good program that we hope will continue."



TOP Elvis Rodriguez, Wesley Chambers and Happy Wyche were among the SMEP students at Yale last summer.

ABOVE The program gives students a taste of the academic rigors of medical school.

SMEP combines clinical exposure—such as spending a shift in the emergency department or observing an operation or an autopsy—with course work in the biological and physical sciences. A wide-ranging lecture series, a writing and communications course, career counseling and a medical school recruitment fair are other major components of the program. The aim is not simply to give students the nuts-and-bolts information they'll need to get into medical school, but to demystify a world that to many seems as rarefied and unapproachable as Mount Olympus.

"A lot of SMEP students are working two or three jobs to pay for college. They don't come from a long family line of physicians, and they think there's no one like them at Yale," says Andre R. Matthews, a program graduate who is now in his third year at the School of Medicine. "But then they come here and see that it's less homogeneous than they thought."

Forrester A. Lee, M.D. '79, HS '83, the medical school's assistant dean for multicultural affairs and co-director of Yale's program, sees a transformation occur in many of the students. "I guarantee by the end of those six weeks, you have fundamentally altered their view of the world," he says. "This is a group who never dreamed they could come to Yale, and now they're here and succeeding, and they can honestly see themselves as medical students here."

Last summer's class of 124 students came from 76 colleges across the country. African-Americans constituted 48 percent of the class, 38 percent were Latino, and 10 percent were either Native American, Native Hawaiian or Southeast Asian. A concerted effort was made to attract more Latino students, resulting in a jump from 19 percent in 2002 to 38 percent last year.

While the program began with a focus on underrepresented minority students, others have benefited from it at Yale, as at other sites. For example, seven white students were enrolled in 2002 and two participated last year. Lee says that in most cases what binds students isn't race or ethnicity so much as coming from an educational system that failed to equip them with the necessary skills to get into medical school.

"It's a socioeconomic problem that is particularly severe in ethnic minority communities," he says. "The nurturing has largely been left to the schools because the community and the family aren't functioning well. But this is a job the schools aren't prepared to do, and they're overwhelmed. Not surprisingly, the result is kids who are not learners."

But sometimes, despite the educational disadvantages and deprivations, a kid manages to learn anyway. These are the ones the program wants to reach before they fall by the wayside—students like Elvis Rodriguez.

"This I have a passion for"

"Coming here to Yale is the first time I ever slept in a dorm," says Rodriguez, a compact 28-year-old with soft brown eyes. He and his brother and sister were raised by their mother

in the South Bronx. Public assistance was the family's main source of income, but Rodriguez, being the eldest child, helped out by working at McDonald's and as a porter at Tavern on the Green in Central Park.

"After graduation from high school, I worked full time. Then one day I got a call from my high school counselor. He wanted to talk to me about my future," Rodriguez recalls. "He told me I should go to college. I was grateful someone else cared, that someone was there to tell me, so I did."

At around the same time Rodriguez enrolled in the City College of New York, his twin sons were born, so he had to work the midnight shift as a security guard while taking courses and commuting to school in upper Manhattan. "I thought I wanted to be an architect, but I found it wasn't as appealing as I'd imagined," Rodriguez says. "Then I made friends with an emergency room doctor who suggested I volunteer at a local hospital. This exposed me to the medical field for the first time and I thought, 'Wow! This I can do. This I have a passion for.'"

Still, there was his family to support, so Rodriguez hedged his bet by getting a master's degree in secondary science education from Lehman College. That was in 2001, and he's been teaching high school biology since then. "But it's not where my heart is," he says. "In both careers you do good, but medicine is a different level of good."

Happy Wyche, another student in the program, says she's determined not to become the cultural stereotype everyone expects: "A single mother with a bunch of kids and a low-paying job." What Wyche wants to be is an obstetrician. "When we were in the maternity ward and I saw the mothers with their new babies, I was like, 'Oh, my gosh. I can see myself doing this every day.' Obstetrics inspires me."

Wyche, who at 24 has the sleek elegance of a model, lived in the Dominican Republic until she was eight. Then her mother moved the family to a low-income neighborhood in Miami. "The teachers in our school had no time to guide us. You had to teach yourself. At first I didn't speak a word of English," Wyche recalls of her early education in the United States. Eventually she enrolled at Florida State University and volunteered at a local hospital and in nursing homes. She earned a degree in business finance, married and gave birth to a son, who is now a toddler.

Her life was on the move, but still something was missing. "I got a job helping people invest their money, but I wasn't as caring and compassionate as I wanted to be. It was too cutthroat," Wyche says. So when her husband was sent to Afghanistan with the 82nd Airborne Division, she and her son moved home with her mother in Charlotte, N.C., and she began mapping her route to medical school. "People said just relax and raise your kid, but I have too much energy. I was ready to go back to school," she says.

In 1970, only 2 percent of American medical school students were members of an underrepresented minority

group, predominantly African-Americans, although they constituted 12 percent of the general population. That year, the AAMC set a goal of attaining population parity by significantly increasing minority representation in medical schools. By 1975, that initiative showed real results, with a fivefold increase in the number of African-American students—close to 1,000—enrolled in medical schools compared to 1968. But by 1974 the number leveled off at about 1,500 underrepresented minorities, or 9.4 percent, enrolling in American medical schools each year, out of a total enrollment of roughly 16,000 students.

Lee, who co-directs SMEP with Stephen J. Huot, PH.D. '81, M.D. '85, HS '87, associate professor of medicine, says that when he began his own medical studies at Yale in 1975, minority enrollment here was at its peak, with the school routinely admitting 10 to 12 minority students a year for every class of 100. "From my point of view, we had solved the problem," he says. "Things were looking good."

But the illusion of success faded as the demographics of the nation underwent seismic changes. "I don't think people realized how dramatically society was changing," Lee says. "The same goals weren't relevant anymore."

So, in 1990, with 1,470 underrepresented minority students entering first-year classes, U.S. medical schools rededicated themselves to boosting that number through a AAMC initiative called "Project 3000 by 2000." The goal was to reach 3,000 students by the year 2000. According to Lee, during the first few years, significant progress was made, peaking in 1994 with just over 2,000 minority students. Since then, the numbers have dropped to about 1,775, "leav-

ing us with a decade of zero progress," Lee says. Among the 507 medical students at Yale, 91 are members of minority and other groups underrepresented in medicine.

Yale responded to the challenge of "Project 3000 by 2000" by implementing the program along with three other programs aimed at helping improve the competitiveness of minority students applying to medical schools.

The Biomedical Science Training and Enrichment Program (BIOSTEP) is a summer research training program designed to interest undergraduates in careers in biomedical science. The Science, Technology and Research Scholars Program (STARS) assists Yale undergraduates, including women and minority students, who are pursuing majors in science or engineering. The third, Science Collaborative Hands On Learning and Research (SCHOLAR), is a partnership between the School of Medicine and New Haven's Hill Regional Career High School that prepares students for advanced academic work in biology and chemistry.

Thinking on their feet

Consistently, the most popular component of SMEP, according to Lee, is the writing and communications course. Seven instructors teach students how to tackle the logic-challenging MCAT essays. Students also spend a lot of time working on their personal essays, which can often be the tiebreaker used by admissions committees in deciding whether or not to accept a student into medical school. The third element of the communications program is the mock interview, which is intended to prepare students for another make-or-break element of the admissions process.

"Communication is not every doctor's strong suit," says writing instructor Susan Froetschel, M.P.A., who has a bachelor's degree in journalism from Penn State and a master's in public administration from Harvard. "But how effective can you be as a doctor if you can't communicate in a clear, concise, compassionate way with your patients? That's why the personal essay and the interview are so important."

During one of her classes toward the end of the program, Froetschel began the dreaded mock interviews. Students took turns sitting in the front of the room, being grilled by the instructor and then having their performance critiqued by the rest of the class. Before she began, Froetschel reminded the edgy students, "Doctors interview patients at their most vulnerable. Patients have to expose the most embarrassing, painful parts of their lives to their physicians. This interview is nothing compared to what patients will go through in front of you if you are physicians."

She asked questions that ran the gamut from "How will you know if you are a successful physician 10 years from now?" to "Will affirmative action still be necessary in 25 years?" One student who said she wanted to be an infertility specialist floundered when asked how that specialty helps society and not just the couple that wants a baby. Another



"I guarantee by the end of those six weeks, you have fundamentally altered their view of the world," says program co-director Forrester Lee.

struggled to answer a question that required knowledge of disease prevention programs. Asked about street life in the neighborhood where he grew up, a third student impressed Froetschel and classmates with the parallel he drew between gang behavior and some fraternity practices on his campus.

But the question that took everyone by surprise was when Froetschel asked one young man, "What's your favorite ice cream?" He came up with an answer, "vanilla," but it was clear he'd temporarily lost his footing. Later, Froetschel explained the reason for asking something so seemingly irrelevant: "I do that to fluster them. Interviewers will do that to see what happens when they encounter difficult patients. I had a student once who said an interviewer asked whether her mother had helped pick out the suit she was wearing. She got into the school, but she said she was totally jangled for the rest of the interview."

As nerve-wracking as the mock interview can be, many students say writing the personal essay is even worse. "Not good," is how Wesley Chambers, a Morehouse College sophomore, describes the instructor's response to his personal statement. Chambers, who hopes to join his father's gynecological practice one day, recalls, "It was hard for me. I felt like I was saying the same old stuff. I realized I need to get some more experience so I have something to write about and can show that I'd be a good doctor."

Froetschel says that by the end of the six weeks, she sees a real improvement in the quality of the essays. "Revisions? A lot of students haven't practiced repeated revisions, but they really do pay attention to the strategies we discuss in class. They are open to criticism, and when they're done, they really have thought out the issues."

But SMEP isn't just six weeks of blunt lessons and sharp critiques. The social bonds that form are equally important. A water balloon fight between students and program staff on the lawn outside the student dining hall was "one of the best times I've had in a very long time," Wyche says. "There is so much love and support that is shown to us. That's been the best part."

Rodriguez took advantage of a personal connection he made during the program to observe a gastric bypass operation, a surgical procedure for morbidly obese patients (typically 100 to 400 pounds overweight) to limit their food intake by reducing the size of their stomachs.

Dressed in scrubs and standing next to the patient, Rodriguez was able to watch on two video monitors as Robert L. Bell, M.D., HS '01, carefully manipulated a retractor to move the patient's liver so he could staple across the top of her stomach and reattach the small intestine. "Every time I'm exposed to something new, it adds fuel to my fire to pursue medicine," Rodriguez said after the procedure, his eyes flashing with excitement.

As a former student in what was then MMEP and now a program instructor, Matthews knows well the passion,

doubts, drive and insecurities students feel. "MMEP helps dispel a lot of myths about medical school," he says.

The oldest of five children raised by a single mother on Chicago's south side, Matthews says the program was just what he needed. "I doubted myself. I didn't know if I could handle medical school, but MMEP serves to inspire people," he says. "I'm not saying it's easy, but it can be done."

Matthews says what students need most, and what SMEP tries to provide, is a chance to have their questions answered by a wide range of people in the medical profession. "There are a lot of fears," he says. "Everyone knows that person with the great MCAT scores who didn't get in." He says instructors stress that medical schools don't just look at numbers; they look at the whole person, which is a welcome message for students who may have taken a circuitous route to medical school or who, on paper at least, may not seem like the most likely candidates.

But helping students fulfill their dreams of becoming doctors is only half the equation, says Lee. There is also the benefit to society that comes from making the medical profession more ethnically and racially diverse. "At a human, emotional level, there are three kinds of people with whom we want ethnic identification: those who provide safety, those who nourish our spiritual lives and those who take care of our health," he says. "It's not essential, but it helps a lot. It's valid to seek and receive care from our own community." **YM**

Jennifer Kaylin is a freelance writer in New Haven. Terry Dagradi is a photographer with the MedMedia Group at the School of Medicine.



Writing instructor Susan Froetschel, center, conducts mock interviews with her students so they'll be able to handle the real thing when they apply to medical school.



Fighting the good

Yale's Kelly Brownell has turned concern about obesity and the American diet into a national debate about our "toxic food environment." Not everyone is pleased.

By Peter Farley

Illustration by Christian Northeast

With the pealing bells of St. Mary's Church as counterpoint, a celebratory air prevailed in the seminar room of Kirkland Hall on a crisp autumn day last year. The psychology department's weekly noontime talks are usually given by scholars from out of town, but on this occasion the faculty was hosting one of its own, department chair Kelly D. Brownell, PH.D.

Brownell, who also serves as director of Yale's Center for Eating and Weight Disorders, is a national figure in the raging public debate over the worldwide rise in obesity. He and a former graduate student, Katherine Battle Horgen, PH.D., had just published *Food Fight*, a new book on the topic, and he was fielding four or five interview requests per day from radio, television and print journalists eager to stoke an already heated debate with the controversial policy proposals outlined in the book.

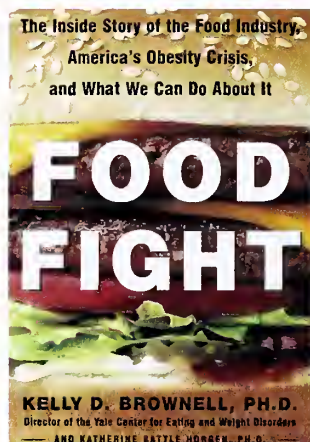
When introducing Brownell to the hometown crowd, William R. Corbin, PH.D., assistant professor of psychology at Yale, proudly called attention to his colleague's highly visible role as the media's go-to guy for commentary on America's expanding waistlines, half-seriously likening him to a "rock star."

The characterization pleased Brownell, a man who follows popular music with as much fervor as he devotes to food policy. But as he took the podium, he playfully punctured the euphoric mood by drawing on every successful author's sure-fire reality-check device: the mailbag. Holding an unsigned postcard that had arrived that morning from Baltimore, he read, "Mind your own damn business. You're motivated, like nearly all liberals, by book sales, caring less about a person's diet. What a person eats is none of your business, or teachers' or the government's. A pox on your house!"

The postcard's over-the-top language drew laughter from the sympathetic audience in Kirkland, but it also served as a reminder that emotions run high on Brownell's chosen battleground. Eating is among the most intimate of human activities, and it is invested with deep feeling. Food is a sensitive, serious business.

Oddly enough, the high emotional pitch of the obesity wars may derive from the fact that there is so much agreement on the basic facts. Some of the most alarming statistics—the 250 percent increase in obesity among American children over





the last two decades, for example—are so stark that no one (except for a few outliers like Paul Campos, J.D., a law professor at the University of Colorado, who denies the basic premise that there is an obesity epidemic) disputes them.

Since there are only a few plausible interpretations of these facts, and since there are billions of dollars at stake in the debate's outcome, opponents have tended to take battle stations based in broader ideologies and to man them unwaveringly.

Brownell is perhaps the best-known proponent of the view that the recent upsurge in obesity is the result of a “toxic food environment” created and promoted by the food industry. According to Brownell, we are biologically hard-wired to crave fats, sugars and salts, and to eat far greater amounts of them than we need. During the past 20 years, he says, this propensity has combined with the emergence of new “eating opportunities” to cause an epidemic of obesity.

“Twenty years ago, who would have even thought of having lunch at a gas station?” Brownell asked the crowd at Kirkland as he prodded his laptop to pump out slide after PowerPoint slide illustrating the gargantuan portions, four-digit calorie counts and slick, kid-centered marketing that are the coin of the fast-food realm.

Since he was on friendly turf, Brownell mostly let the images and statistics speak for themselves. A photo of a new Dunkin' Donuts outlet in a corner of his local supermarket was followed by a close-up of a shopping cart that had been painstakingly retrofitted with a Dunkin' Donuts cup holder, and one could almost see his listeners register the intended message: *now we eat while we shop for food*. Brownell's calm, patient marshaling of the evidence was punctuated by chuckles and gasps of recognition, as if these features of contemporary American life were so ever-present that they had become the visual equivalent of background noise, and were being seen by his audience with fresh eyes.

In *Food Fight*, Brownell and Horgen call for taxes on certain foods, for government oversight of food advertising (especially that directed toward children) and for better nutrition education and consumer information to counteract what they see as an incessant, virtually irresistible drone of marketing buzz bankrolled by the food industry. When his arguments are laid out in full as they were during his talk at Yale, Brownell's conclusions are themselves almost irresistible, but most Americans have only heard him speak in *Nightline*-sized sound bites.

In that form, his views are easy to caricature. Brownell's critics paint him as a “Big Brother” figure hellbent on government intrusion into private life, a puritanical killjoy on a crusade to legislate pleasure out of existence, a soft-headed liberal out to shield gluttons from their own irresponsibility at society's expense.

The feverish emotion of the obesity debate sometimes leads to personal attacks as well, and Brownell has felt their

sting. On a website hosted by a group calling itself the Center for Consumer Freedom (CCF), for example, one finds a Yale publicity photo juxtaposed with a recent shot of an obviously overweight Brownell. A caption reads, "Would you take advice on good diets and nutrition from this man?" Noting that the "trimmer" Brownell is featured on *Food Fight's* dust jacket, the site's anonymous authors accuse him and his publishers of a "truth-in-advertising scam."

But as I sat with Brownell in the quiet sanctuary of his office after the lecture, it was hard to imagine that he could inspire such invective. It was the heavier version of Brownell who had addressed his department colleagues that day, and he freely admitted to me that his weight "goes up and down." Without apparent irony, he attributed his condition to frequent snacking, stress and a lack of exercise during the writing of *Food Fight*. His weight gain was "not a permanent state," he said, dismissing the CCF website as an ad hominem distraction from the serious issues at hand.

Like most academics, Brownell has set up his office to reflect his professional preoccupations, but the décor has an unmistakable touch of whimsy. A framed Warholesque print of the 7-Eleven "X-treme Gulp" soft-drink container adorns one wall, while bizarre artifacts of junk food culture, including a baby-bottle-sized Mountain Dew container fitted with a nipple, are displayed on a side table, the way an anthropologist might showcase a tribal mask.

In the seminar room, Brownell had steered clear of polemics in favor of a deliberate, thorough line of reasoning, and he was much the same in private. Still boyish and sandy-haired at 52, Brownell calmly made his case in soft, measured speech inflected with the vowels of his Indiana childhood. He was considerably more animated when the talk turned to his avocation, bluegrass music, and to his beloved collection of acoustic guitars. (Fittingly, one favorite is an antique Gibson model called the "Jumbo.") The overall impression Brownell left was of that rarest specimen in American public discourse: the open-minded true believer.

"Kelly is reasonable and gentlemanly," says Gene Grabowski, who had occasion to spar with Brownell frequently when he served as chief lobbyist for the Grocery Manufacturers of America, the world's largest food-industry organization. "One gets the feeling when dealing with him that he does want to learn, and he wants you to learn as well." In a recent editorial in *The Washington Times*, Michael Fumento, a senior fellow at the Hudson Institute, wrote; "While I once considered Mr. Brownell a radical, the fatter we grow the less radical he seems."

The vociferous condemnations of Brownell may be more a reaction to his perceived influence than to his stated views, which are far more nuanced and moderate than those held by many in the anti-obesity camp. He does support government regulation of food advertising to children, the disclosure of calorie counts on fast-food menus and the

removal of soft-drink machines from public schools. However, he opposes filing lawsuits against the food industry on behalf of obese plaintiffs, a strategy that is beginning to take hold nationwide. Although he has been ridiculed as the mastermind behind proposals for a punitive "Twinkie tax" on snack food, Brownell is against levying such taxes at levels that would discourage consumption. Instead he supports a small tax—say, a penny a can on soft drinks—that would be earmarked to fund government-sponsored nutrition education and advertising.

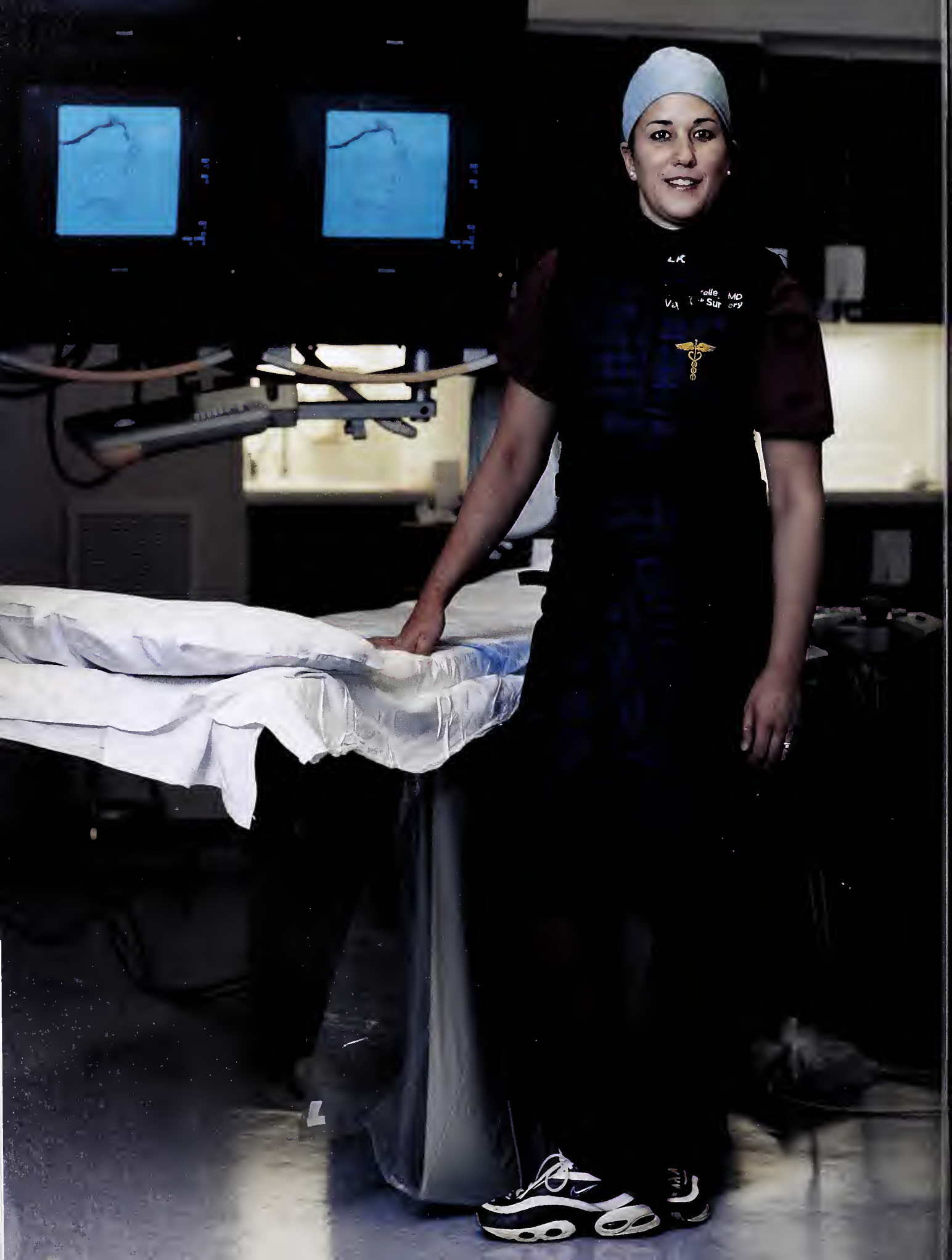
According to Brownell, the CCF and similar organizations are fronts for the food manufacturing and restaurant industries in the guise of grass-roots consumer movements, akin to the "research councils" created by the tobacco companies when the tide of public opinion began to turn against them. (On their website the CCF states that their funding comes from "restaurants, food companies and more than 1,000 concerned individuals.")

Brownell first went public with his views in a 1994 op-ed piece in *The New York Times*, years before obesity was much on the public's mind. That article prompted blistering attacks, but Brownell said that he has seen a sea change in public opinion since then, one that has picked up steam exponentially during the last five years. Though he acquired a thick skin from almost a decade of hostile interviews, Brownell said that he's now growing used to a more tolerant and supportive reception, even in the bare-knuckle arena of talk radio.

Having been in the food policy game for so many years, Brownell surveys today's battles with a long view. He approvingly cited a recent decision by the city of Los Angeles to remove soft-drink machines from all the city's public schools, a decision that he said was unimaginable in 1994. "The anti-tobacco movement took 40 years to mature. This movement has made similar progress in 40 months."

Brownell has lately been finishing his talks with an optimistic aphorism from Gandhi, which he delivered at Yale from his preferred vantage point at the calm center of the maelstrom: "First they ignore you. Then they laugh at you. Then they fight you. Then you win." **YM**

Peter Farley is a freelance science writer based in Boston. Christian Northeast is an illustrator in Cobourg, Ontario.



Closing the gender gap

Once an exclusively male bastion, surgery is beginning to resemble the rest of academic medicine as more women join its faculty ranks.

Stories by Cathy Shufro

Photographs by Terry Dagradi

When Barbara K. Kinder, M.D. '71, HS '77, trained at Yale three decades ago, surgical residents were just that: resident surgeons who virtually lived at the hospital. They worked grueling 128-hour weeks, and overnight call alternated with "short" days that ended at 10 p.m. or later. This went on for five years. If the residents of that era ever felt worn down or resentful, or if they ever longed for a schedule change to attend a wedding or hit the ski slopes, they kept it to themselves.

"In my day, nobody complained about *anything*. Nobody ever uttered a word," says Kinder, an endocrine specialist who is now the William H. Carmalt Professor of Surgery. "We basically did as we were told and kept our eye on the goal: getting excellent surgical training and finishing the residency." In fact, the odds were good that a resident who began training at Yale would *not* finish here. After the second year, the Yale group was cut from 12 residents to four. In those days, it was

"survival of the fittest, a Darwinian approach to surgical training," says Kinder, who in 1977 was one of the first two women to complete the general surgery training at Yale.

Things have changed. For one thing, the hours of training are much shorter. In July 2003, new rules limited residents' time on duty to 80 hours per week, and effectively changed the way surgeons learn their craft from an immersion experience to one that is more diffuse. The new limits are in part a response to lawsuits claiming medical errors from fatigue, but they also reflect changes in societal attitudes about family life. Across all medical disciplines, women, in particular, have pushed for greater flexibility, making it somewhat easier for physicians to combine career and family.

Early in her career, Kinder sensed that Yale was committed to making room for the increasing number of women choosing to become doctors. (Her enthusiasm for the school was

Lynne Henderson Kelley

Vascular surgeon Lynne Henderson Kelley, M.D., had just finished her training in Boston when she went to France to hone her skills in new, less-invasive techniques for treating

patients with clogged or weakened blood vessels. To perform these surgeries, Kelley wears a heavy lead protective suit and works beside interventional radiologists who sup-

ply her with X-ray vision as she operates. "Every day there's something to learn and see," says Kelley. [More on our website, info.med.yale.edu/yymm]

such that she turned down a chance for a job at another high-powered program.) Yale's commitment led to the establishment in 1975 of the Office for Women in Medicine. Through informal get-togethers and by matching students with mentors, the office fosters ties among female students, residents and faculty members. "Over the years," says Director Merle Waxman, M.A., associate dean for academic development, "there's been a strong base built here, a strong support center."

The above-average number of women on the surgery faculty attracts more women in turn. Women applying for faculty positions interview with both male and female surgeons, including high-ranking women like Kinder. Candidates for residency get a similar picture. First-year resident Lemi Luu, M.D., says she chose Yale from among other competitive programs in part because the department's chair, Robert Udelsman, M.D., M.B.A., emphasized the strong presence of women on the faculty.

"That gave me a certain impression about the program, that it was forward-thinking," says Luu, who graduated from

Emory School of Medicine. "I felt that having an opportunity to interact with other female surgery attendings and to use them as role models was very important in my training and development."

The numbers do suggest that Yale has made significant headway toward increasing the proportion of female surgeons on its faculty. According to an analysis of 2002 faculty roster data by the Association of American Medical Colleges (AAMC), Yale ranked 14th out of 126 medical schools in the percentage of women among its surgeons. (For complete information, see our website, info.med.yale.edu/yymm.) The analysis showed that 17 percent of full-time faculty members holding M.D. degrees in Yale's Department of Surgery were female, compared with a national average of 11.2 percent, as of December 31, 2002. (Of 52 Yale faculty members with medical degrees who perform surgery, 9 were women.) The numbers are likely to climb as more women choose surgery; at Yale, about 30 percent of residents in general surgery have been women over the past decade, according to

Barbara Kinder [cover]

"The changes that have taken place mirror social changes."

Barbara K. Kinder, M.D. '71, HS '77, says that when she trained in surgery at Yale in the mid-1970s, the attending surgeons—all of them men—never questioned her aptitude. Chief surgeons William F. Collins Jr., M.D. '47 and later C. Elton Cahow, M.D., "were both men who thought women could do anything. It was a matter-of-fact thing for them, not any kind of a crusade. Their attitude was, 'Why couldn't they do it?'"

Nonetheless, the culture of surgery has changed, shifting from a military model to one that accommodates give-and-take. "The changes that have taken place mirror social changes," says Kinder, an endocrine surgeon and senior faculty member. Women have brought "a very different management style, a consensus-building style. I think men have become more this way, too. ... The throwing of instruments doesn't happen any more."

Kinder and fellow resident Mary Alice Helikson, M.D., HS '77, who is now a pediatric surgeon in Oregon, were the first two women

to complete general surgery training at Yale. Kinder says she tolerated five years without playing tennis, spending time with friends or reading anything except medical journals because, "I rotated into surgery and fell in love with it. It was an epiphany."

As for the long hours, "I think by and large everyone functioned pretty well doing the 128-hour workweek. On the other hand, I don't think it made for a rich life outside of medicine," Kinder says, and she laughs.

Today, women and men alike want to take part in family life. "I think that's probably healthy," says Kinder, whose daughter, Caitlin, was born in 1985 when Kinder was 40. Once she became a mother, Kinder says, career became less important. "Could I be doing some more things in surgery nationally? Yes, I probably could, but that's been my choice. From the day she was born, my daughter has been my first priority."

Kinder has reservations about the reduction in residents' hours. "The 80-hour

workweek necessarily diffuses the sense of responsibility that a surgeon-in-training has for his or her patient," she says. As an attending surgeon, Kinder feels responsible for her patients even when she leaves the hospital. "If it's a weekend or a night, I expect to hear about my patient," says Kinder. If younger surgeons "don't learn it by living it, I'm not sure they'll have the same sense of that contract with the patient. Maybe we overdid it."

Kinder says surgeons of her generation are disenchanted and are retiring, on average, at age 58. (She is 59.) "I'm incredibly frustrated with medicine. We need national health care. Interspersed between the physician and patient are layers and layers of bureaucracy and nonsense."

As a member of the School of Medicine admissions committee she looks for applicants "who have concerns about social justice questions. I think we ought to recruit these people. Hopefully they'll be part of solving this health care crisis."



▲
Amy Friedman

Transplant surgeon Amy L. Friedman, M.D., brings more than just professional knowledge to the bedside when she checks on a transplant patient: her own mother received a donated kidney that extended her life for 17 years. "From my own family experience," says Friedman, "I have learned the agony and the ecstasy associated with the amazing field I work in." [More on our website, info.med.yale.edu/yymm]



▲
Sanziana Roman

She may have left behind an opera career to pursue medicine, but endocrine surgeon Sanziana A. Roman, M.D., HS '99, retains definite ideas about music. For a long, complicated case, she puts on a CD of Mozart, Brahms or the Romanian composer Enescu. For something quick like an appendectomy, disco works. And when everyone's exhausted, it's rap. "Studies have shown that surgeons operate better with music," says Roman.

While different musical themes suit different cases, one mood runs through all of surgery for Roman: the awe she feels toward the surgeon-patient relationship. [More on our website, info.med.yale.edu/yymm]



John H. Seashore, M.D. '65, HS '70, the residency program director. Nationally, 25 percent of general surgery residents are women, according to the AAMC.

Udelsman saw the relatively high percentage of women in the department as a plus when he was recruited from Johns Hopkins in June 2001. He expects that the number of women in surgery at Yale and nationally will increase. Nonetheless, he does recognize that the surgery "lifestyle" puts off some prospective surgeons; women and men alike worry that they won't have time for family and leisure if they choose the field. But he says that medical students have found the prospects less intimidating since the national Accreditation Council for Graduate Medical Education capped the workweek for residents at 80 hours. "People who in their heart of hearts wanted to be surgeons, and were dissuaded from it, are now considering surgery."

As more women choose the field, Udelsman says, surgery programs will be forced to acknowledge "the fundamental biological difference that you can't ignore: the issues of childbearing and family. We accept the fact that residents and

A

Julie Ann Sosa

An abundance of mentors, both men and women

Julie Ann Sosa, M.A., M.D., knows the value of finding a mentor. In fact, though she'd planned to go to medical school, meeting a mentor when she was a senior at Princeton almost landed her in a career as an economist.

It happened when she was editor-in-chief at the *Daily Princetonian*. Student reporters heard some earthshaking news: Princeton's president, economist William G. Bowen, was about to resign. The student paper broke the story, beating *The New York Times*. Annoyed by the premature announcement, Bowen summoned Sosa to his office to scold her—and then surprised her by offering her a summer job. Together, they wrote an award-winning book about the labor economics of academia. Sosa went on to study economics as part of a master's program at Oxford.

Despite having ultimately chosen medicine, she has carried with her the lesson that a mentor can enrich a person's life.

Mentorship is part of the reason Sosa, 37, came to Yale—to follow the department's

chair, Robert Udelsman, M.D., M.B.A., north from Johns Hopkins after completing her training there in 2002. And as an assistant professor of surgery, she serves as a potential mentor to others, from Yale undergraduates she meets as a fellow of Jonathan Edwards College to surgical residents beginning their careers.

When she finished eight years of residency training at Hopkins, Sosa was only the seventh woman to complete the full general surgery residency program there. She never felt any discrimination and jokes that "everyone was uniformly punished for wanting to be a surgeon" by the grueling call schedule.

At Yale, three of the five surgeons in her section, oncologic and endocrine surgery, are women. And she says the collegiality of Yale physicians, male and female, helps her do research, since "you can't do good research in isolation. You need collaborators." As a core faculty member for the Robert Wood Johnson Clinical Scholars Program, Sosa is working

with several colleagues to evaluate the quality of the research reported in peer-reviewed medical and surgical journals. She's also studying the use of video cameras to record what goes on in the operating room. "Most of the teaching in surgery happens in the operating room, but it's the thing we know least about," she says. Yale suits Sosa well. "I'm extremely happy," she says. "I'm thrilled to be here."

But Sosa tells a story suggesting that people still picture surgeons as male. Soon after moving into her new house recently, Sosa received some letters addressed to her neighbor. When she brought the misdelivered letters next door, the neighbor looked at Sosa oddly. "You live next door?" she asked. "We'd heard a surgeon bought the house."

Stereotypes linger, but the prospects for women in surgery seem to be gradually improving. At Hopkins, where no woman had ever headed a large clinical department, there's a new director of surgery. Her name is Julie A. Freischlag.



▲
Heidi Lee Frankel

The emergency department serves as a socioeconomic barometer for trauma surgeon Heidi Lee Frankel, M.D. When the economy slips and community morale declines, shootings and stabbings increase, says Frankel, director of the surgical intensive care unit at Yale. As a medical student, Frankel dreaded her surgery rotation, but by the end of the month she was hooked; although she describes her life outside the OR as “tame,” she loves the intensity of caring for critically ill and injured people. [More on our website, info.med.yale.edu/yymm]

A place for women in surgery to network, compare notes

Attending a meeting of the Association of Women Surgeons (AWS) was a revelation for Vivian Gahtan, M.D. As a chief resident at the University of South Florida in 1987, Gahtan was one of only two women among two dozen general surgery residents. At the meeting, she discovered a wider world. “I had never been around 100 surgical women before,” says Gahtan, until recently an associate professor of surgery at Yale and now chief of surgery at the State University of New York-Syracuse. “For the first time, I didn’t feel quite so isolated.”

Now president of the 1,600-member organization, Gahtan says the AWS hopes to attract female medical students into surgery, to make the profession more attractive for them and to provide a structure for networking.

Gahtan believes that women constitute a largely untapped resource for the profession. Women account for about half of medical students but only 12 percent of the nation’s 32,600 general surgeons, according to statistics for 2000 from the American Medical Association. General surgery ranked third in popularity as a specialty for men, but 10th for women.

“Women are becoming a higher percentage of the total physician pool, and if you aren’t attractive to women, it’s going to be a problem,” says Gahtan. “We have to change with the times.”

One major change has been the institution of an 80-hour work-week for surgical residents. Other options that need to be explored, she says, include consolidating the standard training time for individuals in surgery subspecialties; incorporating a standard family leave policy for men and women, and considering part-time practice.

Gahtan notes that obstetrics and gynecology has adapted to the demands of the new generation: many physicians in that field practice part time, but surgeons rarely do.

AWS offers a free handbook, *Pocket Mentor*, that gives practical advice to residents. The group helps its members find mentors by gathering every fall before the annual meeting of the American College of Surgeons. Its website (www.womensurgeons.org) provides a place to ask about issues ranging from how to resolve a dispute over a call schedule to how to take a baby to a scientific meeting. “It’s networking, online,” says Gahtan. The changes advocated by the group should improve the lives of all surgeons, male and female, she adds. “The ultimate goal should be fellowship.”



A

Milissa McKee

For pediatric surgeon, endless variety, “less real estate to cover”

Milissa A. McKee, M.D., M.P.H., is only half joking when she says she has attention deficit disorder. She likes variety, and she likes to finish a job and move on. That’s why pediatric surgery suits her. Pediatric surgeries are shorter than adult surgeries because “there’s less real estate to cover.”

“I like doing technically demanding surgery and I like to take care of kids,” says McKee, 31, herself the oldest of seven. “Pediatric surgery fits me particularly well.”

Pediatric surgery also offers variety. McKee gets to tackle a broad spectrum of cases, everything except cardiac and neurological problems. “That’s very unusual in surgery specialties nowadays. In other specialties, you just do endocrine, or you just do cancer, or you just do gastroenterology.”

Although it’s true that McKee can talk cogently about surgery while also plowing through a stack of paperwork and occasionally glancing at her computer screen, you have to take her claim of having attention

deficit disorder with a grain of salt—given that she managed to finish college at age 15. She got her driver’s license that year, moved one state west from her Minnesota home and earned her medical degree at the University of North Dakota at 19. Her nine years of postgraduate training included both research and clinical fellowships at Johns Hopkins and a master’s degree in public health, also at Hopkins. She came to New Haven two years ago.

At Yale, McKee has expanded the use of minimally invasive surgery for young patients. For example, she uses a crib-side procedure to treat gastroschisis, an abdominal wall defect that until fairly recently required major surgery shortly after birth. The intestines of a baby born with gastroschisis protrude outside the abdomen. McKee sidesteps major surgery by protecting the intestines in a silicone sac and, over the course of a day or two, gradually introducing them into the baby’s abdomen.

faculty members who become pregnant will have special needs that in the past have not been major issues in surgery programs, because there have not been many women.” For instance, if complications require a pregnant resident to take a few months off, how will she accrue enough cases to meet certification requirements? “I don’t have the answers,” says Udelsman.

He adds that the Yale surgery program will resolve those dilemmas to ensure that talented and dedicated women continue to choose surgery. In the final analysis, Udelsman is not interested in strong female candidates any more than strong male candidates: he just wants good surgeons. “I’m interested in having the best surgery department in the country, period.”

That focus on skill, not gender, originated in the 1970s. “There’s such a strong tradition of female surgeons, starting with Barbara Kinder,” says vascular surgeon Lynne Henderson Kelley, M.D., who joined the faculty last February. “There’s no distinction. We’re allowed to be surgeons, not women surgeons.” **YM**

Cathy Shufro is a contributing editor of *Yale Medicine*. Terry Dagradi is a photographer with the MedMedia Group at the School of Medicine.

She has noticed that some female medical students rule out surgery *prima facie*. They have told McKee that “they’re only doing the rotation because they have to, and that they’d never do surgery because the residency is too hard, it has no lifestyle and they want to have a family.”

This frustrates McKee. “If it fits your personality to be a surgeon, you should be a surgeon.” She says that choosing a career in surgery may mean you can’t have the highest-paying practice, head your department and lead the nation in research and still have time to raise children. But having set priorities, McKee asserts that you can “set up your schedule so you can meet all your goals. I strongly believe you can have a fulfilling career and you can have children, and I intend to.”



Sphygmomanometer!

From the beautiful to the obscure

A doctor's words can enlighten, obfuscate or amuse, a fourth-year student observes.

As someone who probably should have majored in English instead of geology, I often feel my mind oscillate between two modes of thought: the scientific and the lettered. I hear myself say "Romberg negative, no dysdiadochokinesis or pronator drift," and the lexicophile in me stands back, marveling. They may be English, but those words are as opaque to the layman as the treasured two-inch clipping on my fridge is to me. It announces a physics lecture at Yale—"Time-Reversal Breaking and the Theory of the Gap in Underdoped Cuprates." But when it comes to delightful obscurity, cleverness or just beauty, medical language holds its own, even against the physicists.

We have the scimitar sign, the clover-leaf skull and my personal favorite, the jumping Frenchmen of Maine syndrome. Granted, you don't see that disease every day, but its appearance in the dictionary proves that some august authority has accepted the term. We find incidentalomas on CT scans that were done to check for something else entirely. Look at a pathology textbook. It's full of phrases that make you wonder whether the microscopists were hallucinating: cells can have a starry-sky appearance, owl's eyes or Orphan Annie nuclei. Sometimes we anthropomorphize, ascribing grumpy emotions to the body. There's irritable bowel syndrome, of course, but our circulation may become embarrassed. When phago-

cytosis goes wrong—when a cell can't slimily surround and eat something—it is frustrated. On the other hand, we make some body parts sound coy: to elicit the anal wink during a physical exam is to know that all is well with the nerves to the nether regions. I can't be the only one who appreciates that.

Some of us medical students used to wonder worriedly if we should have studied classical languages, the rumor being that it would help us learn medical terminology. A groundless fear, of course—Spanish is a hundred times more useful—but medicine does have some splendid Greco-Latinate mouthfuls. Consider the mellifluous confluence of consonants in sphygmomanometer (a blood pressure cuff), syzygy (when organs fuse to each other during development) or borborygmi (the sounds of overly vigorous digestion). Less lyrical but just as vivid is the *cauda equina*—horse's tail—the bundle of nerve roots at the end of the spinal cord.

When it comes to naming new phenomena, I'm in favor of eponyms over descriptive terms. Not only are they a portable history of medicine, but people's names can be wonderful, alone or in combination. Carr-Barr-Plunkett syndrome is admittedly less descriptive than 48 xxxx syndrome, but which is more fun to say? The number-one silliest medical word must be pseudopseudohypoparathyroidism. It may be descriptive, but it's also a missed opportunity to name a disease after oneself, if there ever was one. (No single word that is not German should consist of 12 syllables; there are shorter poems.) I'm glad that the discoverers of Dandy-Walker syndrome and Howell-Jolly bodies weren't as self-effacing.

A fondness for abbreviation can reduce doctors' notes to a very exclusive code. I can write "NPH 8 U BID c FS Q 12 and SS as backup," and nobody bats an eyelash. (It's a set of instructions for keeping a diabetic patient's blood sugar under control.) There are disease syndromes abbreviated LEOPARD, HELLP and POEMS, and medical trials have made an art form of the clever acronym for unwieldy descriptors like "Efficacy and Safety of Subcutaneous Enoxaparin in Non-Q-Wave Coronary Events." ESSENCE is easier.

We need most of our jargon, as does any specialized field, but for some words there seems to be no justification other than to befuddle the layman. We don't say that the patient sweated if we can say that he diaphoresed. We never say he has a black eye when what he really has is a periorbital ecchymosis. There's only one main use for a stethoscope, and we call it auscultation. I remember watching one operation and asking "Is that all bleeding from the broken bone?" "Yes," the resident replied, "that's hematoma from the fracture." Still, some doctors know when to put obtuse jargon aside in favor of more colloquial terms. To my next question—"Is that part of the fracture as well?"—the senior surgeon replied, "Yup, it's basticated."

Jenny Blair, a fourth-year medical student, writes an award-winning monthly column for *The Hartford Courant*.

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Physician associate director takes on a new role with teaching, alumni as the focus

After 25 years as director of the Physician Associate Program, **Elaine E. Grant**, PA-C '74, M.P.H. '92, has stepped aside to become the program's first director of clinical development and special projects. Her new position, which took effect October 15, will encompass clinical education and alumni affairs.

Grant, an assistant dean who was among the first to graduate from the Yale program in the early 1970s, announced her move in a letter to students, faculty and colleagues. She said that over the past year, while also overseeing clinical curriculum, she came to realize that much can be done to enrich the clinical experiences of students.

"I am going to be interacting on a much higher level with clinical rotation faculty and educating them on the difference between medical student education and physician associate student education," Grant said. She's also trying to organize an alumni association and hopes to establish a new program of "miniresidencies" for physician associates who wish to enter new specialties or who are returning to work after an absence from the profession.

Mary L. Warner, M.M.Sc., PA-C, the program's assistant director for didactic curriculum, has been named interim director. After receiving her degree as a physician associate from Emory University in 1991, she practiced in cardiac and orthopedic surgery for nine years. She came to Yale in 2000 to oversee curriculum for the program's first-year courses. She also works at Bridgeport Hospital in emergency medicine and serves as the physician assistant member of the Connecticut Medical Examining Board.

A committee will be formed to conduct a national search for a permanent director.

—John Curtis

University names six at medical school to endowed professorships

The university has announced the following endowed professorships:

Mark B. Gerstein, PH.D., associate professor of molecular biophysics and biochemistry, has been named the Albert L. Williams Associate Professor of Biomedical Informatics. Gerstein's group does research in the emerging field of bioinformatics.

John H. Krystal, M.D. '84, professor of psychiatry, has been named the Robert L. McNeil Jr. Professor of Clinical Pharmacology. Krystal is the founding director of the Center for the Translational Neuroscience of Alcoholism and deputy director for clinical research at the Abraham Ribicoff Research Facilities at the Connecticut Mental Health Center.

Paul J. Lombroso, M.D., professor in the Child Study Center, has been named the Elizabeth Mears & House Jameson Professor of Psychiatry. A molecular biologist and child psychiatrist, Lombroso explores the molecular basis of childhood psychiatric disorders.

Dieter G. Söll, PH.D., professor of molecular biophysics and biochemistry, chemistry and biology, was named the Henry Ford II Professor of Molecular Biophysics and Biochemistry. His research focuses on genetic, molecular, biological and biochemical studies of the function of transfer RNAs.

Fred R. Volkmar, M.D., professor of psychiatry, pediatrics and psychology, has been named the Irving B. Harris Professor in the Child Study Center. Volkmar is an expert in the field of autism, Asperger's syndrome and other Pervasive Developmental Disorders.

Joseph L. Woolston, M.D., professor of pediatrics, has been named the Albert J. Solnit Professor of Child Psychiatry. Last year he was named chief of child psychiatry at the Child Study Center.



Joseph Craft



Margaret Hostetter



Richard Lifton



Erin Lavik



Harvey Risch



Herbert Yu



Bennett Shaywitz



Shepard Stone

Joseph E. Craft, M.D., HS '77, professor of medicine and immunobiology and chief of the section of rheumatology, was named chair of the scientific advisory board of the Alliance for Lupus Research (ALR) in July. Craft will oversee the board, help establish and monitor its scientific goals and guide the planning of the ALR annual meeting and summit.

Marie E. Egan, M.D., associate professor of pediatrics and of cellular and molecular physiology, was elected membership secretary of the Society for Pediatric Research in May for a term of six years. The society bridges basic science and clinical research for the advancement of the health and well-being of children worldwide.

Janine Evans, M.D., associate professor of medicine (rheumatology), was named associate director for clinical affairs at the Yale Medical Group in June. She will be responsible for practice standards, HIPAA oversight, credentialing and the Office of Patient Advocacy. Evans will also play a leadership role in the development of practices at satellite offices, including the Shoreline Medical Center in Guilford.

Patrick G. Gallagher, M.D., associate professor of pediatrics (neonatology), and **Scott A. Rivkees, M.D.**, associate professor of pediatrics (endocrinology), have been named members of the American Society for Clinical Investigation, a selective group that honors outstanding achievement in biomedical research.

Margaret K. Hostetter, M.D., chair and professor of pediatrics and professor of microbial pathogen-

esis, and **Richard P. Lifton, M.D., PH.D.**, chair and Sterling Professor of Genetics and professor of medicine and molecular biophysics and biochemistry, were invited to serve on a Blue Ribbon Panel on Clinical Research at the National Institutes of Health (NIH). The panel will examine research conducted within NIH laboratories and clinics and suggest ways to collaborate with researchers outside the NIH.

Zeev N. Kain, M.D., HS '92, FW '93, anesthesiologist-in-chief at Yale-New Haven Hospital Children's Hospital and professor of anesthesiology and pediatrics and child psychiatry, has been appointed an associate editor of *Anesthesiology*, the journal of the American Society of Anesthesiologists. His renewable four-year term began January 1, 2003. He also began four-year terms in January on the editorial board of *Pediatrics*, the journal of the American Academy of Pediatrics, and as a member of the Risk Prevention and Health Behavior Study Section, Center for Scientific Review at the National Institutes of Health.

Erin Lavik, Sc.D., assistant professor of biomedical engineering, was one of two Yale faculty members named to the 2003 list of world's 100 Top Young Innovators by *Technology Review*, the Massachusetts Institute of Technology's magazine of innovation. Lavik's research focuses on new approaches to repairing spinal cord injury and retinal degeneration.

Jerold R. Mande, M.P.H., lecturer in pediatrics, was named associate director for policy at the Yale Cancer Center in September. His

initial goal is to define Yale's role in the Connecticut Cancer Control Plan in conjunction with the Connecticut Cancer Partnership. Before coming to Yale, Mande served on the White House staff as an advisor to President Clinton and was senior advisor and executive assistant to the commissioner of the Food and Drug Administration.

The National Institutes of Health has awarded a \$2.1 million grant to **I. George Miller Jr., M.D.** The Method to Extend Research in Time Award provides five years of support for Miller, the John F. Enders Professor of Pediatric Infectious Diseases, professor of epidemiology and of molecular biophysics and biochemistry. In research spanning nearly 30 years, Miller has used an interdisciplinary approach to define the major properties of the Epstein-Barr virus and is now studying its pathogenicity. His laboratory also studies the gamma herpes virus, associated with Kaposi's sarcoma and body cavity lymphomas.

Harvey A. Risch, M.D., PH.D., professor of epidemiology, was awarded a \$3.65 million National Institutes of Health (NIH) grant for a five-year study of the etiology of pancreas cancer cases in Connecticut. His co-investigator on the study, **Herbert Yu, M.D., PH.D.**, associate professor of epidemiology, also received \$3.2 million from the NIH for a five-year study of mitogenic growth factors and endometrial cancer. Risch is co-investigator on Yu's study.

Philip E. Rubin, PH.D., director of the Division of Behavioral and Cognitive Sciences at the National Science Foundation,

received a Commendable Performance award in September from the Human Subjects Research Subcommittee on Science of the National Science and Technology Council for his superior leadership of all federal government departments and agencies involved in the protection of human subjects. Rubin has been chief operations officer at Haskins Laboratories since October and is returning to Yale where he is professor adjunct of surgery (otolaryngology) and a research affiliate in psychology.

Bennett A. Shaywitz, M.D., professor of pediatrics and neurology with an appointment in the Child Study Center, received a Distinguished Alumni Award from the Washington University Alumni Association in St. Louis. The award, presented at the 150th anniversary celebration in September, honors outstanding professional achievement, public service and exceptional service to the university. Shaywitz is known for taking a neurological approach to the study of dyslexia.

Shepard B. Stone, M.P.S., PA '76, HS '81, associate clinical professor of anesthesiology and a physician associate-anesthesiologist at Yale-New Haven Hospital, is also on the board of trustees of the Associates of the Cushing/Whitney Medical Library. Stone, a member of the Connecticut Army National Guard, was appointed state aviation medicine officer in March.

SEND FACULTY NEWS TO

Claire Bessinger, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to claire.bessinger@yale.edu

Another school year, 100 new white jackets

On both sides of the podium, the start of the academic year marks a new beginning.

For the 100 students in the first-year class, the annual White Jacket Ceremony is a symbolic introduction to medicine and a welcome to Yale. This year it was also a chance for Interim Dean Dennis D. Spencer, M.D., HS '77, to introduce himself to the Class of 2007.

Spencer, who has led the medical school since July, described his own journey into medicine, which started with a boyhood spent on a farm in Iowa. Although he plowed the fields, he identified most with the local general practitioner, just back from the Korean



On White Coat day members of the Class of 2007 lined up in front of the Sterling Hall of Medicine for the traditional class portrait.

War. "He wore a white coat, walked with a limp from a shrapnel injury, carried a big black bag and drove an oversized black Cadillac around the countryside, literally—and what appeared to be miraculously—saving lives, including mine, with a newly discovered antibiotic, penicillin," Spencer said.

In high school Spencer tried, unsuccessfully, to make an EEG amplifier, and then resolved to become a physician. At Grinnell College and in medical school at Washington University in St. Louis, Spencer followed his interest in the nervous system, which led him to neurosurgery. Spencer came to Yale in 1972 to begin a five-year residency and has led neurosurgery here since 1987.

After sketching his own life, Spencer described the students. The 100 members of the Class of 2007, he said, have attended 46 colleges, earned master's degrees at eight universities and Ph.D.s at three.

He urged the students to embrace the Yale System's emphasis on the physician as scientist. "You must quantitatively understand the physical- and biological-science underpinnings of the evolved human by sharing the bench with our scientists and our clinics with clinical researchers," he continued. "You must wear the white coat comfortably in both places, speak both the language of science and the language of caring."

Margaret K. Hostetter, M.D., professor and chair of the Department of Pediatrics, told the story of a white coat she first wore as an intern in Boston and the reminders of individual patients stitched into its cloth. "Today you will wear the white coat, and you too will see life's fabric torn, its texture raveled and its pattern rent. ... And once you've put it on, don't ever take it off."

—John Curtis

Remarks from the ceremony by Dennis Spencer appear in their entirety on our website, info.med.yale.edu/yymm.

Put authority to the test, Commencement speaker urges physician associates

In his Commencement address to the Physician Associate Class of 2003, Charles A. Morgan III, M.D., associate professor of psychiatry, offered a cautionary tale about an experiment done at Yale in the early 1960s. Stanley Milgram, Ph.D., a psychologist, wanted to test people's acceptance of authority. Test subjects were asked to play the role of a "teacher" who would administer increasingly strong electric shocks each time a "learner" failed to answer a question correctly. Unbeknownst to the "teachers," the learners were actors feigning a pained response to the shocks.

"No one was prepared for the results of that study," Morgan said. With prodding from the experimenters, most subjects in the experiment were willing to administer up to 450 volts, despite the screams of the actor portraying the learner.

"Milgram believed subjects performed as they did because they had an extremely difficult time disobeying authority. Why am I telling you all this today?" Morgan asked. As they begin their careers, he continued, the 35 new physician associates will become authorities themselves and will have to maintain their habit of critical thinking, Morgan said. He encouraged them to ask, "What has someone told me, and why do I believe it?" He also suggested that they must be willing to accept new or contradictory information, admit mistakes and change a diagnosis. "Pay attention to the evidence that doesn't conform to



Danielle Drayton



Sean Lucan



Kyeen Mesesan



Alison Norris

your hypothesis," he said. "You need to question authority. You need to think about what you do."

Class President Peggy Peelman Vollstad praised her classmates for their dedication and willingness to help others: September 11, 2001, which came on the 22nd day of their studies, reminded them of why they had chosen to become physician associates. Some students immediately volunteered with the Red Cross. Others donated blood.

"It has been a long and arduous road ... to attain this privilege of being a health care provider," she said. "I urge you to step off and reflect on why you became a physician associate."

—John Curtis



This year's graduates in the Physician Associate Program chose psychiatry professor Charles Morgan as their Commencement speaker. His address also included a magic trick—tearing up a newspaper and then making it whole again.

Danielle L. Drayton has received the 2003-2004 Schering-Plough/Leadership Alliance National Dissertation award for her work on the role of lymphotoxin/alphabeta in lymphoid organ development. This annual award recognizes PH.D. candidates in the biological sciences who have demonstrated superior scholarship and exceptional promise for success as academic scholars, scientists and teachers' in biological and biomedical research. Drayton is a fourth-year immunobiology graduate student in the laboratory of Nancy H. Ruddle, PH.D. '68, the John Rodman Paul Professor of Epidemiology and Public Health and professor of microbiology and immunobiology.

Sean Lucan, a fourth-year medical student in the M.D./M.P.H. program, has received a scholarship from the Pisacano Leadership Foundation, awarded annually to outstanding students who commit to entering family practice. Applicants must show leadership skills, academic achievement, communications skills and a noteworthy level of community service. The scholarship provides educational programs, leadership training and up to \$28,000 in funding for students identified as future leaders in family practice. The money can be used to repay student loans and to travel to meetings and conferences.

Kyeen Mesesan, an M.D./PH.D. student studying microbial diseases in the Department of Epidemiology and Public Health, received a predissertation fellowship from the Yale Center for International and Area Studies that allowed her to spend five weeks in South Africa last sum-

mer. While there, she was at the HIV/AIDS Vaccine Division in the Perinatal HIV Research Unit of the Chris Hani Baragwanath Hospital in Soweto, the site of the first HIV vaccine trials in South Africa.

Mesesan evaluated the site for a dissertation project involving mathematical modeling of a partially effective HIV vaccine and the resulting policy implications for South Africa. She also developed a survey to assess sexual risk-taking behavior in vaccine trial participants, who will be monitored throughout the trials to ensure that such behavior does not increase.

Alison Norris, an M.D./PH.D. student in the Department of Epidemiology and Public Health's chronic disease division, has received two grants for HIV-related studies in Africa. With a Fulbright-Hays Doctoral Dissertation Research Abroad Grant and an International Dissertation Research Grant from Yale's Center for International and Area Studies, Norris will spend a year conducting doctoral research at the Tanganyika Planting Company, a large sugar plantation near Mt. Kilimanjaro in northern Tanzania. More than 7,000 adults live and work there, and her study aims to understand how life in a "company town" influences risk for HIV and other sexually transmitted diseases (STDs). Norris' research will describe how and why people have sex with partners who infect them with HIV, and explain who is most at risk for infection with HIV and other STDs in the plantation community. She hopes this information will suggest ways to reduce the spread of HIV.

A surgeon takes aim at bias in health care

A surgeon sees disparities in treatment and a solution in the creation of more diverse medical teams.

By Cathy Shufro

If you log onto MEDLINE and search for papers by **Augustus A. White III**, M.D., PH.D., HS '66, most citations will be what you'd expect from a prominent orthopaedic surgeon, with titles like "Effect of Screw Diameter, Insertion Technique and Bone Cement Augmentation of Pedicular Screw Fixation Strength." But among the recent articles, you'll also find one with a very different focus, "Our Humanitarian Orthopaedic Opportunity." In the March 2002 issue of *The Journal of Bone & Joint Surgery*, White addresses

topics that have increasingly preoccupied him during four decades as a surgeon: the racism that has denied equal health care to African-Americans and the healing potential of cultural sensitivity among doctors.

Unless physicians fight their conscious and unconscious biases, White says, they will widen the gap between the quality of health care provided to the privileged and what's offered to the marginalized. Infant mortality rates show that things are getting worse, says White, the Ellen and Melvin Gordon Professor of Medical Education at Harvard, where he is also a professor of orthopaedic surgery. In 2000, 14 of every 1,000 black babies died in their first year, compared with 5.7 per 1,000 white babies. That ratio of 2.5 black deaths for each white death has increased over the past 20 years, from 2.0, according to the Centers for Disease Control and Prevention. "Bias is thoroughly interwoven into the very core of Western medical culture," says White, former orthopaedic surgeon-in-chief at Boston's Beth Israel Deaconess Medical Center.

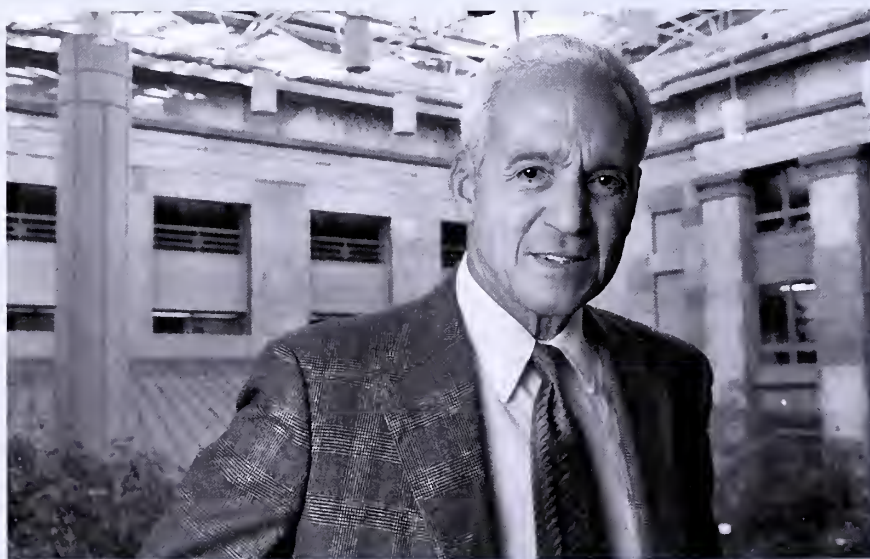
Even after adjusting for education and access to care, studies show similar gaps. African-Americans are less likely than whites to have coronary

angiography, drug therapy for HIV, kidney transplantation and even routine care. Bias even seems to influence the decisions of African-American physicians themselves. A 2001 Yale study by Jersey Chen, M.P.H. '98, M.D. '00, and Harlan M. Krumholz, M.D., professor of medicine, and others showed that after an acute myocardial infarction, white patients were significantly more likely than blacks to be given cardiac catheterization, even when the African-American patients were treated by African-American doctors. "Does anyone still have doubts about the momentum for bias in our medical heritage?" White asks.

He says that when the physician workforce represents a variety of ethnic groups, health care improves for those less likely to get good care. Physicians from minority groups are more likely to set up practices in underserved areas; simply including them on a team improves care, says White, who is African-American. "Over time, you're going to have a team that's less ethnocentric."

White believes that awareness of cultural differences is slowly emerging. At Harvard, first-year medical students now attend an all-day discussion of cultural differences in medicine. He describes his Yale mentor, Wayne O. Southwick, M.D., professor emeritus of orthopaedics, as a leader in fostering gender and racial diversity. Southwick received the 2003 Diversity Award from the American Academy of Orthopaedic Surgeons for his commitment to achieving greater diversity in the field.

White experienced racism in medicine firsthand when he graduated from Brown University in 1957 and sought a summer hospital job. At the "white" hospital in his hometown of Memphis, he would have been restricted to a menial job. To find a job with responsibility, White had to apply to a hospital for nonwhite patients; there he was allowed to work as a surgical technician. Since then,



Augustus White says physicians must fight their conscious and unconscious biases in order to narrow the gap in health care between the privileged and the marginalized.

“the theme of diversity and the value and importance of diversity” has been “a recurrent theme in my mind, like a Bach concerto.

White is co-author, with Manohar M. Panjabi, PH.D., a Yale professor of orthopaedics and mechanical engineering, of the widely used reference *Clinical Biomechanics of the Spine* and author of the popular book *Your Aching Back: A Doctor's Guide to Relief*.

Although White no longer performs surgery, he still does consultations, writes about orthopaedics and lectures both at Harvard and at national conferences. He has won many awards, including the Bronze Star for service as an Army surgeon in Vietnam. A former Brown University corporation trustee and fellow, he was selected in 2000 as one of Brown's 100 most influential 20th-century graduates, chosen from among 75,000 alumni. When asked what honor has given him the greatest satisfaction, White replied, “What's clearly the most gratifying is the positive feedback from patients, spine fellows, professional colleagues.” He said he was reminded of his purpose when he read *The Art of Happiness: A Handbook for Living* by the Dalai Lama, adding, “Our purpose here on Earth is to be happy, and the way to be happy is to help others.” White also finds happiness listening to the music of Duke Ellington, Quincy Jones and Nina Simone at home in Weston, Mass., where he lives with his wife, Anita, and two of his three grown daughters. (The third daughter is working in Sweden, where White studied and met his wife.)

In his article on race and medical care, White asks physicians to approach every patient based on the “double F criterion”—that is, to ask themselves: “Is this the way I would treat my friend or my family?” Do this, writes White, “and we make a tremendous contribution toward the elimination of health care disparities.”

Cathy Shufro is a contributing editor of *Yale Medicine*.

For NASA veteran, alumni post offers chance to help students reach their goals

When **Howard A. Minners**, M.D. '57, M.P.H., was a boy growing up in Garden City, N.Y., his parents hoped he'd aspire to be a doctor. But Minners had other ideas. Living on Long Island near Roosevelt Field, where Charles Lindbergh launched his dramatic flight across the Atlantic Ocean, he dreamed of doing something related to aviation. Minners did succeed in combining the two aspirations, becoming a flight surgeon for the astronauts in the early days of the space program. (As a flight surgeon, Minners took a mandatory jet qualification course, but never flew solo.)

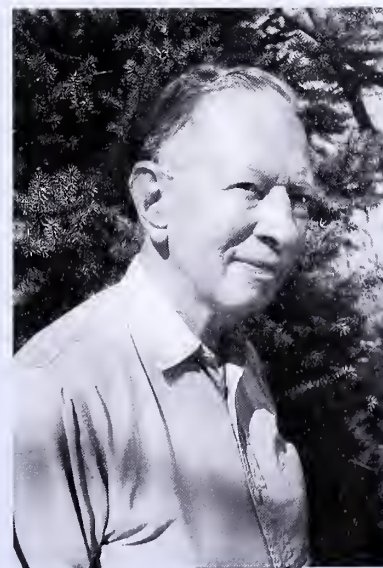
“It was a matter of being in the right place at the right time, and having the right training,” says Minners, who was recently named chair of the board of trustees of the Yale Medical School Alumni Fund. After graduating from medical school he spent a year getting a master's degree in public health at Harvard. Next came a year at the U.S. Air Force School of Aerospace Medicine in San Antonio, followed by a year of supervised residency training in aerospace medicine, eight months of which were spent with the NASA Space Task Force, then located at Langley Air Force Base in Hampton, Va.

As a flight surgeon for more than four years with NASA in Houston, Minners tended to the everyday health care of the astronauts and their families. On launch days he conducted a final medical exam and helped the astronauts suit up. He also conducted immediate postflight medical exams, often aboard an aircraft carrier.

One of his fondest memories is of John Glenn's 1962 Project Mercury flight, which had to be temporarily scrubbed for technical reasons. After lying supine in his spacecraft for nearly four hours, Glenn returned to the astronauts' quarters to remove his space suit. With yet another mission postponement, there was public concern about the astronaut's mood. “John liked music, and suddenly I heard him singing, so I harmonized with him,” Minners recalls. “With the whole world waiting, there we were singing. It was a delightfully private experience uncomplicated by all this stuff that was going on.”

But there were also stressful experiences, like the time an astronaut missed his landing site. “There's a period during spacecraft re-entry when, due to atmospheric ionization, you have no communication, so we didn't know where he was,” Minners says. “It turned out fine, but for a while we were very concerned.”

While working with the space program, Minners researched orthostatic hypotension—the lightheadedness you may experience if you get up quickly after you've been lying down—to see if it was accentuated after flight in space. In part as a result of his early work,



Howard Minners

KIRSTEN MINNERS

exercises have been developed for astronauts to perform while they're in space to maintain cardiovascular fitness.

After leaving the space program in 1966, Minners joined the U.S. Public Health Service at the National Institutes of Health, first in the Office of International Research and two years later at the National Institute of Allergy and Infectious Diseases. He worked in vaccine development, immunology and tropical medicine. He went on to become chief of the World Health Organization's research office in Geneva before serving as an assistant surgeon general and deputy director of the Public Health Service's Office of International Health. He spent the last 10 years of his career as science advisor to the head of the Agency for International Development, with oversight for agricultural, environmental, energy and natural resources research, as well as biomedicine.

Minners says his education at the School of Medicine prepared him well for a career in the sciences. He cites as an example the research he did for his medical school thesis. "Having been a chemistry major at Princeton before coming to Yale, I was trying to develop a chemical process whereby we could accurately and more simply measure urinary estrogen levels," he says. "We couldn't come up with what we were trying to do, but that in itself is part of the learning process."

As chair of the medical alumni fund, Minners wants to make the kind of education he received at Yale more affordable.

"When I learned that the scholarships we offer aren't always as competitive as at some other medical schools, I decided then and there that we need to [do more]," he says. Three years ago he established the Howard Minners Family Scholarship for medical students. "I still believe that the education you receive at Yale, and notably, under the Yale System, is better than anywhere else. But it doesn't come inexpensively."

—Jennifer Kaylin

Working on a broad canvas, physician-artist finds perfection amid life's many flaws

It is 5:30 a.m., and the sun hasn't yet risen on this fall day in Providence, R.I. On the third floor of an old house in the historic East Side of town, **Cheng-Chieh Chuang**, M.D. '95, holds his watercolor brush in his hand.

This is how Chuang begins each day—in his studio. The meditative focus of painting prepares him for the hectic pace of his solo family practice in Taunton, Mass., a blue-collar town just across the state line. It allows him to work as an artist, a lifelong interest and parallel career to medicine.

Painting also serves as a philosophical foundation for Chuang. When he chooses a subject for his detailed, nearly photographic watercolors—usually something from nature—he does not avoid objects that seemed flawed, like a maple leaf with a scaly patch. "All those scars are beautiful in themselves. Nothing is perfect in this world," says Chuang. He tries to retain this perspective when meeting with patients. "I try to see them as perfect beings, despite their imperfections."

For four years after his residency in family practice at Brown University, Chuang's desire to travel and paint while practicing medicine led him down an unusual path. He spent half his time on the road doing *locum tenens* work and half his time at home in Providence, painting. He lived in a dozen communities for several months each, from Maine to Alaska and from Minnesota to New Mexico, where meeting patients gave him a more nuanced view than that of a tourist. In the fall of 2002 he settled full time in Providence and has established an Internet site to display his paintings and sell prints (See <http://www.fromearthtosky.com/>).

Chuang also combines his interests by teaching a course in art and medicine to Brown medical students. They explore how art can improve their powers of observation and enrich both their



Sun Rising by Cheng-Chieh Chuang

own lives and those of their patients. Chuang wants his students to view physicians in the way that he came to see them as a child growing up in Taiwan (where his adventures sometimes ended with a trip to the doctor): not just as scientists but as "renaissance men/women."

Chuang is looking for a house near his practice in Massachusetts, where he hopes to combine his office with an art gallery and a "healing garden." Having worked much of his career in subsidized clinics in medically underserved areas, he is tempered by the realities of private practice, of having to worry about the bottom line in addition to simply providing quality care. But he's happy with the work. "Family practice constantly reminds me to be curious about everything in life, including the human condition."

And he tries to see each day as a gift. "There is so much adversity. ... But most of us go through daily life without any big problems. That in itself is a miracle. That's something we take for granted, like the air."

—Cathy Shufro

Online CME site, voted best of the Web, reflects the curiosity of its creator

In the mid-1990s, just as the Internet was starting to take off, **Harry A. Levy**, M.D., M.P.H. '82, looked at the information available online for physicians and saw a virtual desert. "Not much was going on in health care on the Internet," says Levy, 59. "I decided I could do better."

So in 1996 Levy launched the first continuing medical education (CME) site on the Web and hasn't looked back. His creation, Cyberounds (www.cyberounds.com), now has 125,000 registered users and a potential audience of more than a half-million physicians, as a result of the cooperative arrangements Levy has struck with major online publishers and professional societies. The website offers conferences in 15 disciplines, including cardiovascular medicine, geriatrics, genetics, psychiatry, rheumatology and women's health.

Each conference provides a case study, diagnostic clues and a discussion by experts, usually highlighting emerging treatments. Conferences are moderated by faculty members from medical schools around the country, and physicians who complete the work can earn CME credit from the Albert Einstein College of Medicine in New York, the program's academic partner. (Last year Einstein awarded a total of 20,000 CME credits to participants in Cyberounds courses.) As it approaches its eighth birthday, Levy's brainchild has the longest track record in the online CME field, and last June it received a Nettie award from MD Net Guide as best CME provider.

"Doctors are busy people," says Levy. "What we do for them is provide the experts to lead them through the information jungle."

Levy and his collaborators at Cyberounds have also employed a playful approach to CME (Levy calls it "medutainment"). Two years ago, they

launched "Cardio Country Club," a Web-based golf game in which physicians compete against each other and advance through an 18-hole course by correctly answering questions about the management of cardiovascular disease. More than 3,800 online learners have played the game.

An NYU medical graduate, Levy trained at New York's Mount Sinai Hospital in preventive medicine and studied public health at Yale. After starting and running several health care businesses in New York in the 1970s and 1980s, he decided he would need to make time for at least three careers. He sold his companies in 1991 and set a goal of writing five novels, then doing basic research in neuroscience.

He's now at work on his third book (his second, a mystery novel titled *Chain of Custody*, was published by Random House in 1998), is writing a screenplay and expects to be slicing brain tissue by the time he turns 65. He figures the conventional age for retirement will be a good time to begin the next chapter in his professional life, however unconventional that may seem to others. (Levy notes that his great-grandfather lived to be 110 and that both his grandfathers reached 90.) "I think I can stick to my timetable," he says, smiling. "At least I'm crossing my fingers that genetics will help me out."

As for the future of Cyberounds, he says the company will turn its attention to developing courses serving the subspecialties. "We want to drill down deeper—beyond the general category of endocrinology, for example, to have focused modules in diabetes or thyroid disease," he says. "We want to do more interactive programming, including games and decision-tree programs, courses customized to the user's individual needs and interests." Currently in the works are a triathlon game on rheumatoid arthritis and disease management software for doctors and patients.

Levy says the business (which includes a consumer site, TheDoctor



Harry Levy

WillSeeYouNow.com, and an e-scheduling site, MakeMyAppt.com) has been profitable for the past six years despite the bursting of the tech bubble. One factor in its success, he says, is that the company is doctor-driven and doctor-created, and it caters to what physicians want. "We owe our success to word-of-mouth among physicians. We haven't had to advertise and instead were able to invest in innovative programs. You grow slower, but you become more useful to the medical community."

—Michael Fitzsousa

Familiar Faces

Do you have a colleague who is making a difference in medicine or public health or has followed an unusual path since leaving Yale? We'd like to hear about alumni of the School of Medicine, School of Public Health, Physician Associate Program and the medical school's doctoral, fellowship and residency programs. Drop us a line at yymm@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.

New leadership for the alumni association

The AYAM elects its first African-American president, a Brooklyn physician who makes house calls.

Hospitals horrified **Donald E. Moore**, M.D. '81, M.P.H. '81, beginning the day he visited his dying father.

"I was able to see him in the state of illness before the nurses generally do their morning care. It was very ugly," said Moore, who was 14 years old and growing up in Jamaica. His police officer father was in end-stage renal failure, the result of uncontrolled hypertension. "I remember I left the ward crying. That was the first time that it struck me that he was dying. I never thought I'd ever go back into a hospital."

Later, as a student at Pace University in Manhattan, Moore majored in sociology. When he excelled in an obligatory math and science course, his professor suggested that he consider medicine.

"I had no idea what I was getting into." And yet, he says, "There's nothing in my life that would have given me as much satisfaction as studying medicine."

In July Moore assumed the presidency of the Association of Yale Alumni in Medicine (AYAM). A new vice president and secretary were also elected, as well as two new executive committee members.

One of Moore's goals as president is to foster discussion of how managed care has harmed the doctor-patient relationship. He said a capitated plan, which pays a doctor to take care of a group with a flat per-patient payment, militates against what a physician is supposed to do: care for sick people. Instead, it encourages the doctor to seek healthy patients and see them as little as possible.

Moore, the first African-American to serve as AYAM president, also hopes to convince more minority graduates from the mid-70s through the mid-80s

to attend reunions. He can't explain why, but minority grads from that era are "a disaffected group." He would like them to renew their connections to Yale because, for most doctors, the medical school experience "is a defining characteristic of them as physicians."

The medical school will most likely choose a new dean during Moore's two-year term, to replace David A. Kessler, M.D., who left in June to become dean of the medical school at the University of California, San Francisco. Moore favors choosing "someone who loves the Yale System because of their involvement in it, either as a student or a faculty member, or someone who came, saw and loved." He and six former presidents of AYAM wrote to university President Richard C. Levin in July suggesting that the new dean should be either a faculty member or a graduate of the School of Medicine. They asked Levin to consider appointing Interim Dean Dennis D. Spencer, M.D., HS '77, permanently to the post. Spencer, who did his residency at Yale, is a longtime faculty member and former chair of the Department of Neurosurgery.

Research into basic immunology dominates the professional life of **Francis M. Lobo**, M.D. '92, AYAM vice president. An assistant professor of medicine at Yale, Lobo studies a protein messenger, the cytokine CD40 ligand, which generates normal antibody responses to infection but also mediates abnormal immunological responses, such as those that cause lupus, atherosclerosis, asthma and rejection of transplanted organs. Lobo hopes that a deeper understanding of CD40 ligand will provide opportunities to treat diseases of deficient or abnormal immunity.

In a subtle way, students at Albert Einstein College of Medicine in the Bronx are beneficiaries of the Yale System. As a member of the school's admissions committee, AYAM secretary **Christine A. Walsh**, M.D. '73, looks for applicants who show creativity and



TERRY DAGRADI

Christine Walsh, Donald Moore and Frank Lobo were chosen at the 2003 Reunion to lead the Association of Yale Alumni in Medicine. Frank Coughlin is past president.



Maxine Singer



Laurence Boxer



David Law



Barry Solof

self-motivation, qualities valued at Yale. "I think the Yale System is very successful in the type of doctor it produces," says Walsh, a pediatric cardiologist on the full-time faculty at Einstein. Her research focuses on abnormal heart rhythms in children. She directs the Pediatric Dysrhythmia Center at the Children's Hospital at Montefiore Medical Center in the Bronx, specializing in cardiac electrophysiology.

AYAM executive committee member **Victoria L. Holloway**, M.D. '94, M.P.H., may influence what we find in the beauty aisles at the local pharmacy. A dermatologist, Holloway is assistant vice president for research and development at L'Oréal, the world's largest cosmetics company. In a converted Chicago warehouse, Holloway oversees biologists, physicists and chemists working "to understand the differences across ethnicities of hair and skin." The findings will be used to design hair and skin-care products.

Executive committee member **Robert W. Lyons**, M.D. '64, visits his alma mater several times a month to attend conferences. He is chief of infectious diseases and epidemiology at Saint Francis Hospital and Medical Center in Hartford, professor at the University of Connecticut School of Medicine and associate clinical professor of medicine at Yale. In the past year he has led seminars for Connecticut county medical societies on SARS, bioterrorism and smallpox.

—Cathy Shufro

1940s

C. Baldwin DeWitt Jr., M.D. '49, presented the commencement address and received an honorary doctor of science degree from Northeastern Ohio Universities College of Medicine in May. DeWitt continues to work full time as scholar-in-residence at the Accreditation Council for Graduate Medical Education in Chicago, pursuing his research on the working and learning environments of residents.

1950s

Maxine F. Singer, PH.D. '57, retired from a 14-year tenure as president of the Carnegie Institution of Washington and in January 2003 was named chair of the board of directors of the Whitehead Institute for Biomedical Research in Cambridge, Mass. Singer, who previously served as a member of the board, has earned a strong reputation in science public policy for her studies of risks from recombinant DNA research and her support for the Human Genome Project.

1960s

Laurence A. Boxer, M.D., HS '68, was named the Henry and Mala Dorfman Family Professor of Pediatric Hematology/Oncology at the University of Michigan. He has been director of pediatric hematology/oncology for the past 21 years.

David C. Law, M.D. '66, wrote to say that in 1998 he and his wife Doris, "at the ripe old age of 58," adopted two girls from the Ukraine, Anna, 4, and Ekaterina, 3. A year and a half later, they adopted Natalia, 2. The girls are

now 9, 8 and 5 and the family is doing quite well. He adds that this may be of interest to members of the class, as well as to others who might be considering adoption or starting a second family in their "senior" years.

Ghulam Rauf Roashan, M.D., M.P.H. '67, who is semiretired and teaching and living in Fremont, Calif., was head of health planning and international health in the Ministry of Public Health in Afghanistan in the 1970s and served on the executive board of the World Health Organization. He has also worked as a journalist. Roashan now directs the online Institute for Afghan Studies and is an advisor to Development Gateway, an online research group.

1970s

Barry S. Solof, M.D. '74, is national chair of the American Society of Addiction Medicine's committee on Geriatric Alcoholism and Substance Use and physician-in-charge of addiction medicine for Southern California Permanente Medical Group in West Covina, Calif. Previously, Solof served as medical director of adult and adolescent chemical dependency treatment programs at Edgemont Hospital in Los Angeles and Tustin Medical Center in Orange County, Calif., and for Alternatives, a gay and lesbian program at Glendale (Calif.) Memorial Hospital. He spoke recently on the medical aspects of chemical dependency at a conference organized by Save Our Selves, a group that encourages a self-empowerment approach to recovery from drug and alcohol abuse.



Marian Hannan

David
Mandelbaum

Eduardo Marbán



Murad Alam



Joshua Rosenow

Chrysalynne
Schmults

H. Steven Sims



Dina Strachan

1980s

Marian T. Hannan, D.Sc., M.P.H. '81, assistant professor of medicine at Harvard Medical School and a senior research associate at Hebrew Rehabilitation Center for the Aged in Boston, received the 2003 Excellence in Teaching Award from the First Year Student Committee on Teaching Excellence at Harvard. Hannan is a specialist in the epidemiology of age-related musculoskeletal disorders.

Robert S.D. Higgins, M.D. '85, chair of the department of cardiovascular/thoracic surgery at Rush University in Chicago, was appointed the Mary and John Bent Chair of Cardiovascular-Thoracic Surgery in June at the quarterly meeting of the Rush-Presbyterian-St. Luke's Medical Center board of trustees.

David E. Mandelbaum, M.D., Ph.D., HS '82, former chief of the division of child neurology at the Robert Wood Johnson Medical School, was appointed chief of the division of pediatric neurology at Hasbro Children's Hospital in Providence, R.I. Mandelbaum is also professor of clinical neurosciences and pediatrics at Brown Medical School. His teaching and research have focused on childhood epilepsy and related neurodevelopmental disorders.

Eduardo Marbán, M.D. '80, Ph.D. '81, chief of cardiology at Johns Hopkins Medical Center, is the director of The Donald W. Reynolds Cardiovascular Clinical Research Center at Johns Hopkins, established under a four-year, \$24 million grant in May 2003. The multidisciplinary center will use novel biological

therapies and modern imaging techniques to try to reduce the rate of sudden cardiac death. In October, the center held an inaugural symposium to highlight the major projects that make up its research efforts.

1990s

Murad Alam, M.D. '96, has started his second year as chief of the section of cutaneous and aesthetic surgery in dermatology at Northwestern University in Chicago. Alam completed a dermatology residency at Columbia University College of Physicians and Surgeons and fellowships in laser surgery at Harvard and in Mohs micrographic surgery at the University of Texas Baylor/M.D. Anderson Cancer Center.

M. Kathleen Figaro, M.D. '96, assistant professor of medicine at the Vanderbilt Medical Center, won a Robert Wood Johnson Career Development Award for her work with underrepresented minorities and diabetes care. The four-year, \$365,000 grant was awarded in January 2003. Figaro's project is titled "Disability Expectation: Impact on Self-Care of Type 2 Diabetes."

Kathryn E. Johnson Hoffman, M.P.H. '99, and **Eric S. Hoffman, Ph.D. '99**, were married on July 5 in Webster, Mass. She is a doctoral candidate in clinical neuropsychology at the University of London. He is a research analyst for biotechnology stocks in the London offices of Bear Stearns, a New York investment bank.

Cynthia Lord, PA-C '91, program director and assistant professor at the Quinnipiac University Physician Assistant Program, was elected director-at-large to the board of the American Academy of Physician Assistants (AAPA) for a two-year term. Lord is the graduate advisor to the Student Academy of the AAPA.

Shefali Pardanani, M.D., M.P.H. '97, and **Vinod Pathy, M.D.**, were married on May 10 in New Rochelle, N.Y. They are medical residents, she in obstetrics and gynecology at the Jacobi Medical Center and he in general surgery at Montefiore Medical Center, both in the Bronx. Pardanani is also a resident at Jack D. Weiler Hospital, Albert Einstein College of Medicine in New York.

Lisa F. Price, M.D. '98, a second-year child psychiatry fellow in the department of child and adolescent psychiatry at the Massachusetts General Hospital/McLean Hospital in Boston, received the 2003 American Academy of Child and Adolescent Psychiatry Presidential Scholars Award for research. Price will explore the parent-child relationship in couples who have conceived their child with the aid of *in vitro* fertilization, assessing attachment, risk and resiliency factors.

Joshua M. Rosenow, M.D. '96, has completed his fellowship in stereotactic and functional neurosurgery at the Cleveland Clinic Foundation and works as director of functional neurosurgery at Northwestern University and Northwestern Memorial Hospital in Chicago. His practice focuses on surgery for movement disorders, epilepsy and pain. His

research interests include outcomes from surgery for movement disorders and pain and functional imaging of neurostimulation. Rosenow is also investigating novel applications of neuromodulation.

Chrysalynne D. Schmults, M.D. '98, was appointed assistant professor of dermatology at the University of Pennsylvania Health System in July. Her initial research will examine the efficacy and safety of topical, nonsurgical treatments for basal and squamous cell carcinomas. Her clinical responsibilities include Mohs surgery, an advanced surgical procedure used for recurrent skin cancers. Schmults is also an editorial reviewer for *The Journal of Drugs in Dermatology*.

H. Steven Sims, M.D. '94, HS '00, was recently named director of the Chicago Institute for Voice Care, a treatment center dedicated to the care of voice and airway disorders. Sims, who completed a research fellowship in neuroradiology at the National Institutes of Health and a research fellowship in the care of the professional voice at Vanderbilt, relocated to Chicago after serving on the staff at the University of Nebraska.

Dina D. Strachan, M.D. '94, writes to say that she is an assistant clinical professor of dermatology at the Columbia University College of Physicians and Surgeons and has gone into a private practice in Manhattan. Strachan received a 40-Under-Forty Achievement Award from *The Network Journal* at a ceremony in June at Columbia University, where she is studying biomedical informatics part time.



**Stephanie Snitow and
Daniel Jacoby**

2000S

Daniel Jacoby, M.D. '00, and Stephanie Snitow were married on August 31 in Florham Park, N.J. Jacoby, son of Robert O. Jacoby, D.V.M., PH.D., professor and chair of comparative medicine at Yale, is a chief resident in internal medicine at Mount Sinai Hospital in New York. Snitow is a fellow in the Harvard Business School Service Leadership Program, working as the special assistant to the president of Phipps Houses, a developer of affordable housing in New York.

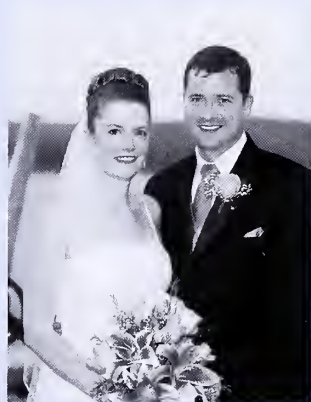
Elizabeth V. Harrold Ratchford, M.D. '00, and Jack Ratchford, M.Sc. '98, were married in Atlanta on May 3. She is an instructor in clinical medicine and on the faculty in the division of cardiology at Columbia Presbyterian. He graduated in May from Columbia University College of Physicians and Surgeons and will serve a preliminary year in internal medicine followed by a neurology residency at Columbia.

SEND ALUMNI NEWS TO

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**Kathryn Johnson Hoffman
and Eric Hoffman**



**Elizabeth Harrold Ratchford
and Jack Ratchford**

2003-2004

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Betty R. Klein, M.D. '86, HS '91

AYAM Representative, Medical School Council

Francis M. Lobo, M.D. '92

Paul A. Bonner, M.P.H. '68, of Dewitt, N.Y., died on August 8 at the age of 58. He had battled diabetes for more than 40 years. Bonner worked for the Salvation Army Harbor Light Centers, as director of grants and contracts management in Washington, and as associate program director in Boston. He was also executive director of the Addiction Treatment Center of New England in Brighton, Mass.

Thomas J. Brennan, M.D. '82, died on July 11 at the age of 56, at his home in Vero Beach, Fla. Born in Richmond Hill, N.Y., Brennan graduated from the U.S. Military Academy at West Point in 1969. He was a captain in the Army and was awarded the Silver Star for Bravery. Brennan was an anesthesiologist in Dothan, Ala., until 1989, when he moved his practice to Vero Beach. He was also a member of the Indian River County Medical Society.

Paul Calabresi, M.D. '55, professor emeritus of medicine and founding faculty member of the Brown University School of Medicine, died on October 25 of cancer at the age of 73. One of the founding fathers of medical oncology and cancer clinical pharmacology at Yale, Calabresi was instrumental in shaping the field of modern chemotherapy. He developed approaches that led to the cure of such diseases as Hodgkins lymphoma. During his career Calabresi was president of the American Society of Clinical Oncology, chair of the National Cancer Advisory Board and a member of the President's Cancer Panel and the National Cancer Legislation Advisory Committee. The Paul Calabresi Lectureship has been created in his honor by the Yale School of Medicine.

Miriam McDonald Campbell, M.P.H. '33, of Chilmark, Mass., died on July 21 after a short illness and complications from a fall. In 1980 Campbell co-founded the Hospice of Martha's Vineyard, where she was admitted during her illness. Campbell taught at Smith College in Northampton, Mass.; Westbrook Junior College in Portland, Maine; and the University of Maine at Orono. She received the Health Education Award of Distinction from the New England Health Education Consortium, the Ira V. Hiscock Award from the New England Public Health Association and the Maine Maternal and Child Health Council Health Education Award.

Irving Guttenberg, M.D. '60, an otolaryngology surgeon from Rochester, N.Y., died on August 17 at the age of 69. After medical school and training, he served as a captain in the Air Force at Loring Air Force Base in Maine. Guttenberg was a clinical instructor in surgery (otolaryngology) at Yale from 1984 until his death and chief of surgery and chief of ear, nose and throat surgery at the VA Connecticut Healthcare System in West Haven and at MidState Medical Center in Meriden. He retired from private practice in 2002.

William C. Harvey, M.P.H. '65, of Tiverton, R.I., died on August 21 at the age of 71. Harvey was the owner/operator of a medical consulting firm, Hospital Executives, from which he retired in 1994. He was a hospital administrator in Rhode Island, New York and Massachusetts, and ran a home health care agency in Rhode Island.

Warren H. Knauer, M.D., HS '54, an oncologic surgeon from Naples, Fla., died on June 21 at the age of 81. Knauer was co-director of the Wuester Tumor Clinic in Elizabeth, N.J., and chair of the division of malignant and allied diseases and of the cancer committee at the Elizabeth General Medical Center. He also developed a surgical oncology program for fourth-year surgical residents, the only one of its kind in New Jersey. Knauer volunteered for 28 years for the American Cancer Society (ACS) and received the Physicians Award and the highest National/Division Bronze Medal Award from the ACS.

Myra A. Lappin, M.P.H. '71, M.D., of San Francisco, died from ovarian cancer on June 17 at the age of 57. Lappin was director of student health services at Cal State Hayward and later at San Francisco State University, where the program became a model for accessible, affordable health care for students. She promoted research in the fields of women's health and sexually transmitted infections.

Dorothy J. Lewis, M.P.H. '72, of Newtown, Conn., died on August 7 at the age of 71. Lewis was professor of dental hygiene at the University of Bridgeport. She retired in 1985, then joined the faculty at Tunxis Community College in Farmington, Conn., where she focused on community programs affecting dental care for underprivileged children in the local school systems.

Robert M. Macnab, Ph.D., professor of molecular biophysics and biochemistry at Yale, died on September 7 as a result of injuries sustained in a fall at his home. He was 63. Macnab, an expert on the bioenergetics of motility, joined the faculty at Yale in 1973 and served as chair of his department from 1992 until 1995.

George A. Nelson, M.D. '57, of Glenview, Ill., and formerly of Northbrook, Ill., died on September 3 at the age of 72. Nelson served as chief of staff at Lutheran General Hospital and during a 45-year career practiced at the Fahey Clinic and Holy Family Medical Center in Del Plaines, Ill. He also served as a flight surgeon on the aircraft carrier *USS Ranger*.

David A. Page, M.D. '56, of Skidaway Island, Ga., died on July 2 at the age of 75. Page was an ophthalmologist at the North Shore Medical Group in Huntington, N.Y., before retiring to Georgia in 1994. During World War II, he served in the Army occupation forces in Japan.

Robert J. Rice, M.D. '56, of Punta Gorda, Fla., died on June 13 at the age of 74. Rice owned and directed Camp Montrose in New York state for emotionally disturbed children. He also served as a consultant to the Nassau County special schools and was director of child psychiatry inpatient services at the Nassau County Medical Center.

Benjamin R. Robinson Jr., M.D. '43, died on June 15 at the University Retirement Community in Davis, Calif., at the age of 84. Robinson practiced for 30 years at the Woodland (Calif.) Clinic Medical Group and served as chief of staff of Woodland Memorial Hospital. He was a captain in the Army and was also in the National Guard Reserves.

Peter Safar, M.D., FW '50, a pioneer in emergency medicine and the development of cardiopulmonary resuscitation (CPR), died on August 3 of cancer at his home in Pittsburgh. He was 79. Safar was known as the father of modern-day CPR for developing, in the 1950s, a method of mouth-to-mouth resuscitation which he combined with chest compression. He was a founding member of the U.S. National Research Council's committee on emergency medical service, establishing guidelines for ambulance design and emergency medical technician and paramedic training. Safar established anesthesiology departments in Baltimore, Pittsburgh and Lima, Peru. He was chair of anesthesiology at the University of Pittsburgh Medical Center and established the International Resuscitation Research Center (now the Safar Center for Resuscitation Research).

Thomas E. Shaffer, M.D., HS '37, of Columbus, Ohio, died on July 31 at the age of 94. Shaffer was a clinical instructor in pediatrics at Yale until 1942 and had a private practice in New Haven and Farmington, Conn. After serving in the Army Medical Corps during World War II, he joined the faculty at the Ohio State University Medical Center. Shaffer also was director of adolescent services at Children's Hospital in Columbus, Ohio, until 1983, and he was the medical director for the Juvenile Diagnostic Center in Columbus from 1960 until 1964.

SEND OBITUARY NOTICES TO
 Claire Bessinger, *Yale Medicine*,
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 06519-0612, or via e-mail
 to claire.bessinger@yale.edu



Settling down in Pittsburgh

A little over three years ago, fourth-year students Tanya Smith and Jose Prince embarked on a complicated venture and entered the residency placement process leading up to Match Day as a couple ["A Match Made in New Haven," Summer 2000]. It meant finding one desirable location that also had two desirable residency programs, in ob/gyn for Smith and surgery for Prince. They settled on Pittsburgh and matched at the University of Pittsburgh Medical Center, their top choice.

Now, three and a half years later, they're convinced they made the right decision. "It's been a really good place to do training in ob/gyn," said Tanya Prince (the couple married two years ago). "It has tremendous clinical volume so you get lots of experience. It's a great place in terms of balancing clinical research and operating experience." She's looking for a private practice position in Pittsburgh to join when her residency ends in June.

Jose Prince is temporarily trading the care of humans for the study of mice. He recently began a two- to three-year research fellowship. "I'm working on a project that looks at early molecular signaling that takes place in hemorrhagic shock," he said. After his fellowship, he must complete two more years of clinical work.

Though still earning residents' wages, the couple has been able to buy a house, a 1930 red-brick duplex in the Squirrel Hill neighborhood just a mile and a half from work. For a young couple, Pittsburgh has been a wonderful place to live. "It has a small-city feel, but it has all the good things of a big city," said Tanya Prince. City attractions include the local symphony and opera and touring Broadway shows. For outdoor enthusiasts, skiing is only 45 minutes away. Sailing and hiking are also close at hand. The only downside for the couple is the distance from family and ocean. She is from San Francisco; he's from New York City.

Nevertheless, Tanya concluded, "It was a really good choice for us." They plan to stay in Pittsburgh for the foreseeable future, but as Jose said, "You never know. We would like to be closer to our families."

—John Curtis

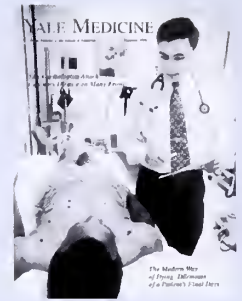


OCTOBER 1958

Alumni Bulletin

"Discovery of the first hormone ever isolated from the pineal gland has been reported by Dr. Aaron B. Lerner and his associates in the Section of Dermatology. The new hormone has been named Melatonin.

"The laboratory technique developed by the Yale investigators for isolating Melatonin was worked out during three years of exhaustive research. More than 250,000 beef pineal glands were supplied by the Armour Laboratories. Chemically, the new hormone belongs in the class of compounds known as hydroxyindoles. Although the function of Melatonin has not yet been determined in humans or in animals, tests in frogs reveal that it lightens the skin shade and reverses the darkening effect of other hormones."



SUMMER 1994

Yale Medicine

"At a medical school so steeped in tradition, Dean Gerard N. Burrow, M.D. '58, knows full well how difficult it is to start a new one. But with the dean's gift of a replica of John Radcliffe's gold-headed cane, the school now has another tradition.

"After my first Yale Commencement as dean last year, I realized that we were the only school within the university not to have a standard to carry,' the dean explains. So he presented to the school his own gold-headed cane, a gift from his chief residents when he left Toronto General Hospital. This cane was first carried May 23 at the Yale University Commencement. ...

"The original cane was carried by John Radcliffe, an outstanding British physician. A year before he died in 1714, Dr. Radcliffe passed the cane on as a token of friendship to Dr. Richard Mead, a rising physician. The tradition of passing the cane continued until 1823, when the widow of Dr. Matthew Baillie presented the cane to the College of Physicians in London."



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Yale Medicine

spring 2004

Marie Curie's historic
day at Yale

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Memories from the
heart of Harkness

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A research partnership
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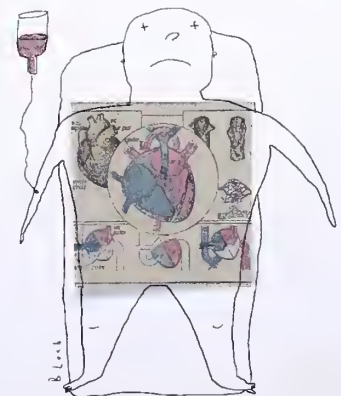
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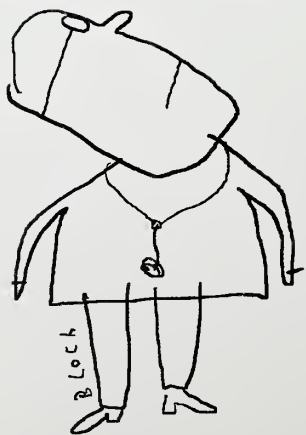
question of ethics.

page 30

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Ethical quandaries can leave clinicians and scientists uncertain as to the best way to proceed. Starting on page 30, Yale faculty experts in bioethics respond to real dilemmas posed by our readers. *Illustration by Serge Bloch*

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 A collaborative bridge between Yale and Iran spanning the genetics of cardiovascular disease is a two-way street for science.
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On the Web

info.med.yale.edu/yymm

On our website, readers can submit class notes or a change of address, check the alumni events calendar, arrange for a lifelong Yale e-mail alias through the virtual Yale Station and search our electronic archive.

yale medicine



Closing the gender gap There are extraordinary male patients, surgery is improving as women fill the void of academic medicine in some women's pain (Daily Care).

HOW TO REACH US

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"I loved medicine but do not miss it"

The following is a response to a letter from Howard Spiro, M.D., that appeared in the Autumn 2003 issue of Yale Medicine.

Dear Howard,
That you should respond to my essay with a letter half again as long as that to which you responded ["Knowing When It's Time to Quit," Summer 2003] brings to mind G.B. Shaw's coda to a letter, "Forgive me for writing a long letter but I did not have time to write a short one." My response to you will be shorter.

My two main reasons for retiring are relevance to my medical community and lack of an adequate intellectual schema in which to incorporate new knowledge. I was bothered by the impending irrelevance that I had seen afflict older physicians. Friends of mine, particularly doctors and attorneys, concur in the recognition. Does being troubled by that prospect reveal inadequate ego strength or simply an accurate perception of reality? Choose one!

The problems of understanding and incorporating new knowledge and its effect on how I wanted to practice are linked to your statements about continuing to practice in a changed capacity and the wisdom that comes to some with age. All the kindness and wisdom in the world are not, in my opinion, worth much if not backed by up-to-date knowledge. I suspect that doctors who practice part time in clinics after retiring are not offering first-rate medicine.

You take me to task for not being a "mid-1930s liberal." I plead guilty. The implication

that somehow it was immoral to retire and deprive the world of my (supposed) talents is a bit harder to take. Perhaps I should have spelled out my thoughts more clearly. For me to continue to practice and encounter the loss of respect of my colleagues—and your colleagues know you better than you know—and be unable to use new information properly would have been to practice under false pretenses.

Do I think everyone should retire at a specific age? Of course not. With rare exceptions, however, there comes a time when older physicians should make way for younger ones. I chose what I chose. I make no apologies. I loved medicine but do not miss it. I am very happy in my current state.

Your longtime friend and student,
Herbert J. Kaufmann, M.D. '59
Bedford, N.Y.

For more on this topic, see the online Yale Journal for Humanities in Medicine at info.med.yale.edu/intmed/hummed/yjhm/.

Strong support from chief helped female surgeons

I read with interest the article on the growing number of women in surgery ["Closing the Gender Gap," Winter 2004] and was pleased that Barbara Kinder mentioned William Collins as one of those who strongly supported women in the surgery program. As the first woman resident in neurosurgery at Yale (and the third to be board-certified in the country), I was fortunate that Dr. Collins literally "took a chance" and accepted me on the resident staff. I recall early in my residency when the chairman of one of the major neurosurgery departments in the country said to Dr. Collins (in a voice calculated to reach me), "Bill, I thought you came here to build a first-rate program. How do you expect to do that after you bring a woman on staff?" Dr. Collins' support was invaluable not only during residency and when I was a faculty mem-

ber, but later in my career as well. Thanks, Barbara, for remembering.

I would also like to echo Dr. Kinder's reservations about the reduction in resident duty hours. As one who attended a medical school in New York with a county hospital affiliation, I know it was not necessarily the fatigue of house staff that caused the errors that aroused the concern of legislators, but the inability to get senior staff to respond to night call. For example, in my third-year obstetrics rotation I delivered more than 30 babies, and I was "taught" to do pudendal blocks (among other things, like breaking a clavicle for a shoulder dystocia) by the night nurse. I agree with Dr. Kinder that the diffusion of responsibility that occurs with the shortened hours is a significant negative. And perhaps more importantly, it will do little to solve the problem.

Joan Venes, M.D., HS '67
Sacramento, Calif.

Cos, not Ephesus, was Hippocrates' birthplace

In reference to the caption under the photo of a sycamore tree on Harkness Lawn ["A Nurturing Vision," Winter 2004], Hippocrates was not born in Ephesus, but rather on the island of Cos off the Ionian coast.

William B. Radcliffe, M.D. '58
Mitchellville, Md.

Dr. Radcliffe is correct. Due to an editing error we stated the incorrect birthplace for Hippocrates.

yale medicine

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Connective tissue

I still have vivid memories of my first day of dorm life. The year was 1977, the city was Baltimore and the weather was what you'd expect in late August: hot and very humid. Music filled the quad, and there was a communal air that endured long after we had moved off the Hopkins campus for the thrill of living on our own.

That was Maryland, not Connecticut; college, not med school; but the experience held the same charm for me that Jenny Blair conveys in her memoir of life in Harkness Hall ("That College Feeling," page 18). Dorm life has its downside, but it's the one time many of us will live elbow to elbow with so many of our peers.

The "connective tissue" linking physicians is a thread in our cover story about the dilemmas doctors face. The values instilled by institutions such as Yale and reinforced by the relationships that begin here form the basis for ethical decision making for years to come. Our third feature describes yet another kind of connection, this one a collaboration between physicians in New Haven and Tehran that revealed the genetic cause of a cardiac disorder.

To meet our goal of keeping the Yale family in touch, we rely on you, our readers, to share stories of interest to your colleagues, friends and former classmates. Whether it's a brief note for the Alumni section, a profile suggestion for *Faces* or a larger story, we'd like to hear about it. Drop us a line the next time you feel like connecting.

Michael Fitzsosa
michael.fitzsosa@yale.edu

SECOND OPINION BY SIDNEY HARRIS

Health care van rides a road less traveled

For city residents with limited access to medical services, Yale's mobile clinic fills a critical void.

The Community Health Care Van parks in front of an apartment house with plywood nailed over the windows. Orange spray paint on the Congress Avenue tenement demands, "Whose Livable City Is This?"—a reference to New Haven's anti-bligh initiative. It is cold and rainy, the kind of weather that discourages patients from venturing out to the mobile clinic. But enough people show up to make for tight quarters.

Joel stoops to walk inside.

"It's a good day because we're alive to see it," the lanky man says with a grin as he brushes raindrops from his jacket.

This is an optimistic time in Joel's life; with the assistance of the van staff, he has just signed up for substance abuse treatment. But first he needs a physical and a tuberculosis test, and the van takes walk-ins. Waiting weeks

or even days for an appointment at a clinic would be difficult and risky for a man who says he is "just trying to find the strength one day at a time."

Entering its 10th year of service to New Haven, the van has always emphasized free, immediate and dignified care, says Frederick L. Altice, M.D., HS '89, associate professor of medicine (AIDS Program) and director of the Community Health Care Van initiative. Altice got the idea for a mobile clinic a decade ago while working with New Haven's needle exchange program. He saw people come in with abscesses that went untreated until they were acute enough to land the client in the emergency room.

With a small van borrowed from Yale-New Haven Hospital's Primary Care Center, Altice began following the needle exchange van once a week. Along with a social worker and HIV counselor, Altice provided primary care, mostly to injecting drug users. Today, a newer, 36-foot van serves patients 11 hours a day, five days a week throughout the city. The rotating

staff includes senior physicians, residents, HIV specialists, a nurse practitioner, a physician associate, an HIV counselor, a drug treatment coordinator, a case manager, outreach workers and a number of volunteers. Usually four staff members ride on most trips. Many others are immediately available by cellular telephone.

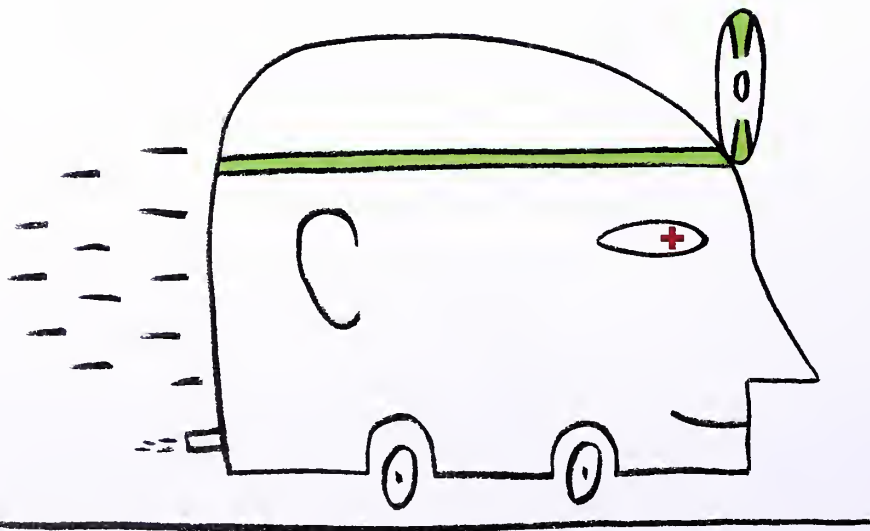
The van's impact on the community is well-documented: a 41 percent reduction in emergency department visits for clients who are injecting drug users, a 66 percent success rate in getting drug users to complete all three shots in the hepatitis B series, and promising results using buprenorphine to reduce heroin cravings. For clients who do not qualify for entitlements, the van may be their only treatment option. Where possible, the aim is to move the patient toward a community health center or some other fixed source of primary care. In 41 percent of the cases, that transition is successfully made. The van has done promising work on TB screening with undocumented residents, says Altice, which he expects to publish soon. Similar work is going on with the homeless.

About half of the 500 to 600 patients who visit the van each month arrive with issues unrelated to drugs. On the same morning that Joel needs a physical to get into treatment, a teenage girl with seashells braided into her hair, powder-blue tennis shoes and a handbag that says "Princess" takes a seat in the van. "I'm here for two reasons," she announces with studied nonchalance, "a pregnancy test and an HIV test."

Within minutes, she has seen a mental health counselor, a physician and an HIV counselor. She is relieved to get test results quickly and without a lecture. As she leaves with condoms she smiles and says, "I'll be seeing you."

"Everybody I meet on the van is always nice," says Michael, 28, who takes his daily HIV medications here. "This gets my morning going."

Much of the ongoing care the van provides also is the basis for research



TOMASZ WALENTA

that might help patients far beyond New Haven. Some clients take their HIV medications in the van as part of an effort to increase adherence. Data collected so far show that the directly observed medication program works, according to Robert Douglas Bruce, M.D., clinical instructor of medicine. Some patients, he says, have seen their viral loads fall and their T cells rise substantially. The research project is funded by the National Institute on Drug Abuse.

Research funding has largely sustained the van, says Altice. The mobile clinic is an ideal setting for many other investigations. For example, he is eager to monitor HIV therapy for inmates released from prison. HIV tends to be well-managed in prison, but viral loads often rise after release.

Aside from research grants, fundraising efforts have been difficult, Altice says, in part because the clientele arouses little public sympathy. It is precisely that lack of sympathy that the van staff is determined to combat. For example, many patients say they have been treated terribly by other health care providers, which makes them reluctant to seek treatment. Charly began coming to the van for primary care after her release from prison. Though she found work immediately after returning to New Haven, her job provides no health benefits. Charly says that on the van she gets a measure of respect she rarely finds elsewhere: "You don't have to be afraid to tell them about nothing," she says. Perhaps that's the secret of the van's success.

—*Colleen Shaddox*

Biomedical engineering becomes a department, uniting several disciplines

In eight years, biomedical engineering at Yale has grown from a fledgling undergraduate major to the university's newest department.

The Yale Corporation approved the formation of the interdisciplinary Department of Biomedical Engineering last summer with the participation of the medical school as well as the faculties of engineering and arts and sciences and the John B. Pierce Laboratory. Yale has offered an interdisciplinary program in biomedical engineering since 1996, led by James S. Duncan, Ph.D., professor of diagnostic radiology, biomedical engineering and electrical engineering, but the decision to create a department signals how far the field has come. "I see a whole new set of symbiotic capabilities coming out of this partnership," said Paul A. Fleury, Ph.D., dean of the Faculty of Engineering. These include the marriage of computer modeling of tissue mechanics with clinical practice, the application of computer technology to enhance imaging data from MRI, and techniques for using biologically compatible materials to deliver drugs or cells.

The department already has 70 undergraduate and 30 graduate students. There are nine primary and four secondary faculty members, with plans to fill three more primary faculty positions. Ongoing research projects include bioimaging and intervention in neocortical epilepsy, modeling of drug transport for brain tumor therapy, motor control in low-back injuries, and fMRI for neurosurgical planning in

epilepsy. The department is now housed in the Becton Science Center, but ground was broken in December for its new home in the Engineering Research Building on the corner of Prospect and Trumbull streets.

Fleury says the department is fully interdisciplinary, with several faculty members appointed in both the medical school and the Faculty of Arts and Sciences. "We expect that this arrangement will enable seamless relationships among the departments," he said.

W. Mark Saltzman, Ph.D., chair of the new department, says the interdisciplinary environment and potential for collaboration are what drew him to Yale. Saltzman, who was previously at Cornell University, is working on drug delivery and tissue engineering. He says his top priorities as chair are to enlarge the faculty and to add new courses.

Fleury says the Yale program will succeed because it is closing a cultural gap. "Medical doctors often see engineers merely as gadgeteers who can supply methods or devices, but are not interested in or capable of engaging in the deeper roots of clinical and medical challenges," he said. "Conversely, engineers are often skeptical of doctors' scientific interests and depth. I am glad to say that these gap characteristics are vanishingly small here at Yale."

—*Jennifer Kaylin*



W. Mark Saltzman, chair of the new biomedical engineering department, and Erin Lavik, an assistant professor, with a sample of a polymer wafer capable of delivering therapeutic agents in the brain after surgery.

MICHAEL MARSLAND

Renewed “vows” herald a stronger link between Yale and London

When a trans-Atlantic group of psychiatrists and psychologists gathered at Yale in early December, it was as much a reunion of old friends as an academic symposium at the Child Study Center. Many in the group have known each other for years. They have written papers together, mentored and trained each other and collaborated on research and interventions.

The reason for the symposium, “Developmental Science and Psycho-



A symposium in December at the Child Study Center brought together an international group of psychologists and psychiatrists.

Peter Fonagy, Mary Target and Yale professor Linda Mayes are the new directorial team at the Anna Freud Centre in London, which has long-standing ties to Yale's Child Study Center.



analysis: Integration and Innovation,” was to formalize three decades of largely informal ties between Yale and the Anna Freud Centre in London. The symposium also celebrated the launching of the Anna Freud Centre Program at Yale and a revitalization of the Centre in London.

Alan E. Kazdin, PH.D., director of the Child Study Center, likened the celebration to the renewal of wedding vows. “There has already been a very enduring marriage that has worked out very well,” he said. “Let’s go through the ceremony and vows again and chart the future.”

What the future holds for Yale’s participation in the program is a series of exchanges that will bring students and scholars across the Atlantic for training, research and study. Linda C. Mayes, M.D., the Arnold Gesell Professor of Child Psychiatry, Pediatrics and Psychology in the Child Study Center, will head the program at Yale and is one of three members of a new directorial team that will lead the Freud Centre.

According to Mayes, the program at Yale will offer training that includes exchanges for scientists and scholars, a master’s program, an undergraduate program and an international visiting-scholar program. The program will also include joint research projects focused on the science of early attachments and emotional development. “The idea is to have a continual exchange of ideas and very active collaborative clinical research,” she said.

The exchanges between London and New Haven go back three decades. In the early 1970s, the late Albert J. Solnit, M.D., HS ’52, who headed the

Child Study Center from 1966 until 1983, forged a strong friendship with Anna Freud and introduced his Yale colleagues to her.

The Anna Freud Centre, which was established during World War II as the Hampstead War Nurseries to treat traumatized children, had become one of the leading centers for the treatment and study of children with a range of serious developmental and psychological disorders. The Centre’s collaborations with Yale involved professors at the medical and law schools as well as colleagues in the community and on the clinical faculty. The ties between these two institutions continued with the leadership of Donald J. Cohen, M.D. ’66, who led the Child Study Center from 1983 until his death in 2001 and who, like Solnit, served on the Centre’s board of trustees.

Last July, the Centre appointed a new directorial team that includes, in addition to Mayes, Peter Fonagy, PH.D., and Mary Target, PH.D. Fonagy is the Freud Memorial Professor of Psychoanalysis and Director of the Sub-Department of Clinical Health Psychology at University College London. Target is a senior lecturer in psychoanalysis, also at University College London.

—John Curtis

An 1810 issue of the *Connecticut Mirror* announces the establishment of the Medical Institution of Yale College.

—
PUBLIC ACTS,
Of October Session, 1810.
—

An Act in addition to and alteration of an Act, entitled "An Act to incorporate the Medical Society."

§ 1. **B**e it enacted by the Governor, and Council, and House of Representatives, in General Court assembled, That the President and Fellows of the Medical Society be empowered, to unite with the President and Fellows of Yale-College, for the purpose of forming a Medical Seminary, to be styled The Medical Institution of Yale-College; agreeably to the following articles, agreed upon by and between the committee of the corporation of Yale-College, and the Medical Society of the State of Connecticut; as follows, viz.

ART. 1. That there shall be a medical institution established in Yale-College, to be known and acknowledged by the name of The Medical Institution of Yale-College.

2. That said institution, to include a complete circle of medical science, consist of four Professors: First, of Chemistry and Pharmacy: Second, of the theory and practice of medicine: Third, of Anatomy, Surgery, and Midwifery: Fourth, of Materia Medica, and Botany. And that there shall be a joint committee of an equal number of persons, appointed by the convention of the Medical Society and corporation of Yale-College, who will make a nomination; from which nomination, the aforesaid Professors shall be chosen by the corporation.

3. That a Cabinet of anatomical preparations, including all things usually found in collections of this nature, be provided as speedily as the college funds will allow.

4. That there be a collection of specimens, in the Materia Medica: And that a botanical garden be established, as soon as the funds of the college can afford such establishment.

5. That every medical student be required to attend to the study of physic, or surgery, with some medical or surgical professor, or practitioner, who is in respectable standing, for two years; provided he shall have been graduated at some college: otherwise to study three years; and to have arrived to the age of twenty-one years. And that every medical student, who shall commence the study of physic, or surgery, after the foregoing articles shall be complied with, and lectures commenced, upon the several branches abovementioned, shall at-

Newspaper heralds a new day in medical education—almost two centuries ago

Stop at medical grand rounds on any given Thursday morning and you're likely to encounter Samuel D. Kushlan, M.D. '35, HS '37, a retired gastroenterologist who has served on the faculty for 65 years and who turned 92 in February. Kushlan graduated from Yale College in 1932 and from the School of Medicine three years later, and his view of the school's history is a long one.

Kushlan's appreciation of the medical school's earliest days recently grew larger, however, when he was given a copy of a 19th-century newspaper documenting the school's establishment by an act of the Connecticut legislature. The slightly yellowed but well-preserved copy of the *Connecticut Mirror*, from November 5, 1810, includes the text of the act creating the Medical Institution of Yale College. The new school was the joint responsibility of Yale College and the Connecticut Medical Society, which today has its headquarters on St. Ronan Street in New Haven.

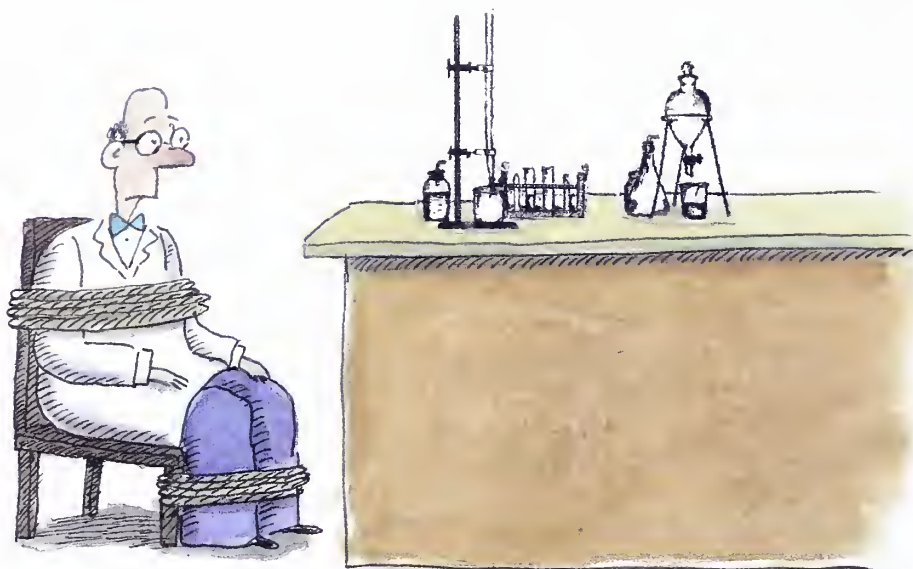
Yale's first medical students could expect to draw on the expertise of an initial faculty of four and core facilities consisting of "a Cabinet of anatomical preparations," "a collection of specimens, in the Materia Medica" and a botanical garden to be planted "as soon as the funds of the college can afford such establishment." Medical students who had finished college were required to study medicine for two years before entering the profession; those who hadn't would spend three years in class. In addition to attending lectures,

the students were expected to apprentice under a local physician or surgeon in good standing.

Kushlan came upon the newspaper through the good graces of Richard Lodish, principal of the lower school at Sidwell Friends in Washington, D.C., where Kushlan's granddaughter chairs the school's parents' organization. A collector of education memorabilia, Lodish thought of Kushlan when he saw the copy of the *Mirror* advertised on the Internet. Lodish has another New Haven connection: his daughter, Maya B. Lodish, M.D. '03, received her medical degree from Yale last May and is now a resident in pediatrics at Johns Hopkins.

While some early features of academic medicine remain unchanged (the act describes in detail the responsibilities of various committees, for example), recent graduates will be amused and possibly dismayed by one provision of the 1810 legislation noted below its description of the curriculum: "The price of the ticket for the whole of the above courses of lectures shall be fifty dollars," the act stated. But students had other expenses to take into account as well. Before passing their exams, they were required to pay \$10 to the treasurer of the medical society, \$4 to each of their examiners and \$8 to the president of the university. Full freight is likely to be a great deal more when the medical school marks its 200th anniversary six years from now.

—Michael Fitzsosa



GARY CLEMENT

Limits on stem cell research may preclude development of key therapies, panelists say

Nobody knows whether stem cells, the body's so-called "master cells" that can differentiate into other cells, will ultimately be useful for repairing diseased or damaged tissue. Current knowledge about possible therapeutic uses remains so limited, according to speakers on a panel on potential applications of the technology, that commercial development remains a distant hope in most cases. And panelists warned that medical applications may never occur because of current restrictions on research involving human embryonic stem cells.

According to Marc D. Beer, chief executive officer of ViaCell, a Boston-based company that banks stem cell-rich blood from umbilical cords for study and possible therapeutic use, "Stem cells have the potential to cure." But because of federal limits on the use of human embryonic stem cells, he said, "research is being curtailed. I'm watching basic research leave this country."

Beer was one of the panelists taking part in the third annual Yale and New Haven Biotechnology Reception in October. He pointed to recent successes in experimental clinical trials in which insulin-producing islet stem cells from donor pancreases have completely cured type 1 diabetes in some patients. "Lack of cells," said Beer, "is the biggest problem" for wider application of the transplant procedure.

Panel moderator Erin Lavik, SC.D., assistant professor of biomedical engineering, studies the use of stem cells for repairing damaged spinal cords. She said government restrictions, coupled with a possessiveness on the part of those who developed a few approved stem cell lines, are hampering research despite the fact that "we do not know the potential of these cells."

"When you don't know," said fellow panelist Earl M. Collier Jr., executive vice president of Genzyme Corp., "that's not the time to legislate."

—Marc Wortman

For undergrads, mentor program offers a glimpse of a physician's life

Five times during the fall semester, Shannon Gulliver, a Yale College senior majoring in microbiology, traveled from central campus to the medical school to observe Ali K. Abu-Alfa, M.D., as he tended to his patients. And her role at times went beyond mere observation. After palpating for edema on a dialysis patient's ankle, for example, he turned to Gulliver and asked: "What is the significance of this finding?"

The pairing of Gulliver and Abu-Alfa, an associate professor of medicine and director of the Peritoneal Dialysis Program, came as part of a new program, Yale Medical Professions Outreach (YMPO), designed to introduce undergraduates to the world of medicine. "I've always been very interested in science, but I didn't know much about patient relations," said Gulliver. "I was lucky enough to get a doctor who could talk about what aspects are fun, what aspects are harder, lifestyle sacrifices you have to make, time commitment and emotional commitment. I asked him very direct questions, and he was really into explaining."

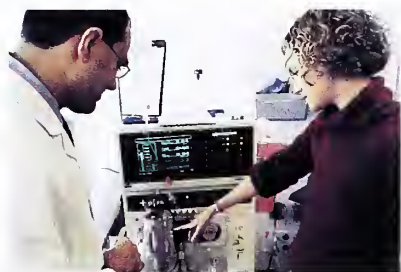
YMPO was launched by students in January 2003 to create opportunities for undergraduates to observe physicians in their daily activities. "It's absolutely one of the most important things we can do for undergraduate students," said neurosurgeon Dennis D. Spencer, M.D., HS '77, the medical school's interim dean and a YMPO participant. For years as a Yale College freshman advisor, Spencer invited his advisees to observe his interactions with patients, but it was always "hit-or-miss" for other undergraduates seeking physician contact, he said.

Yale seniors Steven Hsu and Jason Choi started YMPO to fill what they saw as a lack of premed preparation for undergraduates. "Yale has so many programs for students but nothing like

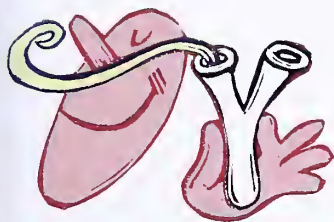
this,” said Hsu, who contacted Undergraduate Career Services and the medical school for guidance. A previous attempt at such a program ended when the founding students graduated. YMPO’s new leadership includes students from all classes to ensure continuity and growth. YMPO also started a lecture series, and in September added a Big Sibling/Little Sibling program that matches undergraduates with medical students. YMPO students must fill out an application and write an essay, and those selected are trained to comply with federal HIPAA regulations on patient confidentiality. Each student-physician pair sets its own meeting times for the semester. Sixty physicians are signed up, and last fall 70 students participated.

“I was immediately attracted to the program,” said Abu-Alfa. “Undergraduates are a body of students we don’t usually get to interact with. If you’re in love with what you do, to transmit that to a new generation is very exciting.”

—Mary Anne Chute Lynch



Yale College senior Shannon Gulliver shadowed nephrologist Ali Abu-Alfa over the course of the fall semester to learn about careers in medicine.



YALE RANKED AMONG BEST PLACES TO WORK

It’s often said that Yale is a highly collaborative institution, but how does one measure collegiality? *The Scientist* magazine did just that last fall in an international survey of 38,000 full-time U.S. faculty and researchers and found Yale among the best places to work in academia—third, actually, just behind Fox Chase Cancer Center in Philadelphia and Purdue University. Relationships with colleagues and the availability of resources were among the most important criteria for Yale respondents. “It is greatly rewarding to see our culture and investments acknowledged,” Provost Susan Hockfield, Ph.D., said of the October 20 report, which can be viewed online at www.the-scientist.com.

—Michael Fitzsosa

et cetera...

NEW PARTNERSHIP IN CHINA

On a recent trip to China, President Richard C. Levin and other university officers cemented a program of exchanges between Yale and Fudan University in Shanghai. The Fudan-Yale Center for Education Cooperation, one of several programs between Yale and Chinese universities, will build on educational exchanges that began in 1996.

The new center will promote exchanges among scholars in history, East Asian languages and literature, genetics, biology, law, medicine and management. The centerpiece of the agreement is the Fudan-Yale Biomedical Research Center. Tian Xu, Ph.D. ’90, vice chair of genetics and special advisor to Levin on science and higher education in China, will direct both the education center and the biomedical center. Xu received his undergraduate degree at Fudan and his doctorate at Yale.

Xu said Yale has three goals—to help establish a world-class research center, to help Chinese educators reform their educational system and to promote understanding between the two countries.

—John Curtis

ONE PAPER, MANY IMPLICATIONS

A Yale geneticist is among the authors of an article deemed by *The Lancet* last winter to be the most important biomedical research paper of the previous year.

The authors of the article, “Genetic Structure of Human Populations,” published in *Science* in December 2002, used genotypes of more than 1,000 people from 52 populations around the world to study human population structure. “The paper quantifies the degree to which biomedical research findings based on one group of individuals may be applicable to individuals from other populations,” said co-author Kenneth K. Kidd, Ph.D., Yale professor of genetics, psychiatry and biology. Kidd and colleagues in the United States, France and Russia identified six main genetic clusters and additional subclusters. They concluded that genetic risks of disease can be assessed with standard study designs if self-reported ethnic background is also considered.

—J.C.

At Liver Center, a vital organ gets its due

The nation's oldest liver research center sees a five-year renewal and expanding targets for therapies.

Poets and philosophers may rhapsodize about the human heart, but James L. Boyer, M.D., Hs '67, says it's actually the liver that is the body's most fascinating organ.

"The ancients thought of the liver as the seat of the soul," says Boyer, director of the Liver Center at the School of Medicine and Ensign

Professor of Medicine. "Babylonians would consult a sheep's liver before going into battle, and even today, a Frenchman who is not feeling well is said to have *mal au foie*. European societies have much more respect for the liver than we do."

But at the Liver Center, the oldest research facility in the country devoted exclusively to liver research, this essential and complex organ gets its due. Roughly 40 scientists, all with independent funding totaling about \$15 million, study the liver.

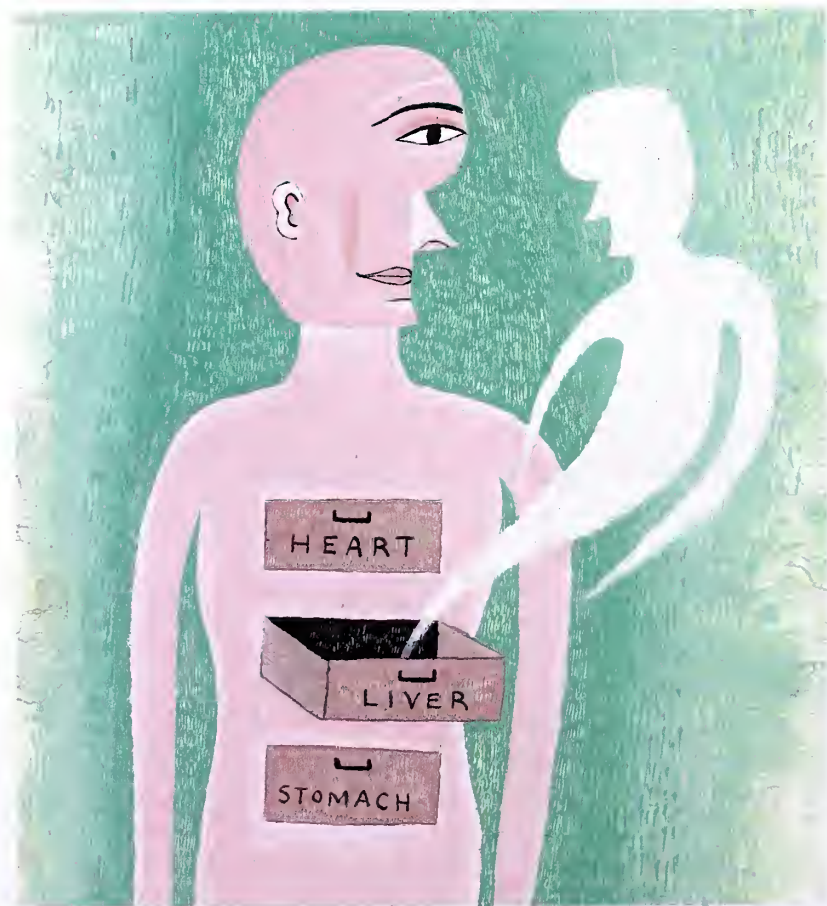
The value of the 20-year-old center was confirmed in December, when the

National Institutes of Health (NIH) renewed the center's funding for a fourth consecutive five-year term starting in September 2004. "We received the highest score in the history of the center," Boyer says of the NIH's evaluation. The center will receive \$3.75 million, with the university getting an additional 62 percent of that in indirect NIH support.

Hepatology has existed as a medical subspecialty for only 50 years, and as recently as 20 years ago there were still very few treatments for liver disorders. But Boyer says that is changing. He points out that hepatitis B and C and biliary cirrhosis can now be treated with medications. There is a vaccine for hepatitis A and B, and liver transplantation is now a viable option. In fact, Yale is expanding its transplant program with the recent arrival of David Cronin, M.D., a liver specialist, in the Department of Surgery.

But while some liver disorders are treatable, new challenges loom. The biggest, Boyer says, is fatty liver disease related to obesity. Gerald I. Shulman, M.D., Ph.D., is a researcher in the Liver Center who has been studying liver diseases associated with insulin resistance. "Our work suggests that one of the earliest findings in type 2 diabetes is the presence of insulin resistance," Shulman says. "That starts to happen years before the development of diabetes."

Shulman's research has also found that insulin resistance occurs in the liver and the muscles, and that it is caused by a transport deficit triggered by the presence of fatty acids. "Fatty acids build up in the liver and lead to deficits in insulin signaling," he says.



MARLENA ZUBER



Shulman is now looking into the correlation between age and the onset of type 2 diabetes, even in adults who are not sedentary or overweight. "I'd say every third or fourth patient I see has adult-onset diabetes, which can have devastating complications," Shulman says. "We're working hard to sort it out." Many of these patients have fatty liver disease.

Other groundbreaking work being done by researchers at the Liver Center includes:

- Discovery of the gene responsible for isolated autosomal dominant polycystic liver disease and description of the clinical characteristics of this inherited disorder, by a group led by Stefan Somlo, M.D., FW '91.
- Fundamental discoveries made by a team led by Roberto J. Groszmann, M.D., at the VA Connecticut Health-care System in West Haven and William C. Sessa, PH.D., which have paved the way for therapies that will control the complications from portal hypertension in cirrhosis, such as intestinal bleeding.
- Demonstration that bone marrow cells are capable of migrating and establishing themselves in other tissues, such as the liver, by Diane S. Krause, M.D., PH.D. This pioneering work is central to the future of gene therapy for genetic liver disorders.

"When I started out, we were mainly diagnosticians. We couldn't cure many liver diseases," Boyer says. "The changes have been enormous. It's an exciting time to be working in this field."

—Jennifer Kaylin

Spike in blood pressure may make weight lifters vulnerable to aortic aneurysm

In a research letter published in *JAMA: The Journal of the American Medical Association* in December, a team of Yale researchers reported that some weight lifters may be at risk of rupturing the aorta's inner lining.

"We had seen a couple of patients in a row who had been weight lifting when this phenomenon occurred," said John A. Elefteriades, M.D. '76, HS '81, FW '83, chief of cardiothoracic surgery. Looking through his research projects, he found other cases. "I noticed that two or three of them were young people who otherwise wouldn't have been expected to have an aortic dissection and were lifting weights at the time."

They found that systolic pressure during heavy weight lifting can rise from a normal reading of 120 to highs of 280 and even 300. "If your aorta is weak due to your genetics and if it is mildly enlarged, weight lifting might be what puts you over the brink," Elefteriades said.

The danger of a potentially fatal aortic dissection, which splits the artery in two, results from a confluence of events, starting with that genetic predisposition.

Elefteriades is working to pinpoint the genetic links in association with Celera Genomics, the company involved in the mapping of the human genome.

Those at risk include people with aneurysms, connective-tissue diseases and hypertension, as well as people with a family history of aneurysms or dissections and those above age 40.

—John Curtis

OBESITY BIAS A PROBLEM FOR DOCTORS

Health professionals surveyed at an obesity conference in Quebec last year learned something surprising about themselves. The survey revealed a significant bias against overweight people among almost 400 physicians, researchers, pharmacologists and psychologists who treat and study obesity.

"The stigma of obesity is so strong that even those most knowledgeable about the condition infer that obese people have blameworthy behavioral characteristics that contribute to their problem, i.e., being lazy," said Marlene B. Schwartz, PH.D. '96, a research scientist in the Department of Psychology and lead researcher of the study published in September in *Obesity Research*. "Furthermore, these biases extend to core characteristics of intelligence and personal worth."

For the study 389 clinicians and researchers took the Implicit Association Test and filled out a questionnaire that assessed attitudes, personal experiences with obesity and demographic characteristics. The results were not all dispiriting, however. Those who work directly with obese patients showed less bias than those who do not.

—J.C.

SAME CHEMICAL, DIFFERENT REACTION

Drugs designed to improve memory consolidation in the elderly may also worsen working memory, according to a study by Yale researchers published in the journal *Neuron* in November.

The difference stems from the brain regions needed for different kinds of memory processing, according to Amy Arnsten, PH.D., associate professor and director of graduate studies in neurobiology. The hippocampus handles long-term memory, while the prefrontal cortex is responsible for working memory. The two brain areas, Arnsten found, respond to chemicals differently.

Medications in development to improve long-term memory often try to enhance the activity of protein kinase A (PKA), an enzyme inside of cells. Arnsten and her colleagues found that when this protein was activated in the prefrontal cortex it worsened working memory.

—J.C.

A partnership that aids cancer's migration

When *Ras* teams up with cell polarity genes, mutations are found to produce metastatic tumors.

In the world of cancer-causing genes, *Ras* is a celebrity. Mutated versions of this gene appear in more than half of all human cancers, including metastatic cancers, in which cells from a primary tumor disperse to other organs or systems of the body and there give rise to new tumors. Clearly, *Ras* is a culprit in many terminal cases. But since a large number of *Ras*-based tumors are benign and never spread beyond their original site, it was thought that the oncogenic *Ras* triggers only tumorigenesis. Now, research demonstrates that *Ras* also contributes to metastasis and it collaborates with a partner to do so. Tian Xu, PH.D. '90, professor and vice chair of the Department of Genetics and an associate investigator for the Howard

Hughes Medical Institute (HHMI), has identified five genes that interact with *Ras* to cause metastasis.

Each of these "cell polarity genes" normally fills an important role in maintaining the orientation of the cell with regard to the inside or the outer surface of the body. The normal version of *Ras*, meanwhile, transmits signals that aid in development by controlling the rate at which various cells reproduce and differentiate. Although neither a mutation in a cell polarity gene nor a mutation in *Ras* leads to malignancy on its own, Xu and graduate student Raymond Pagliarini have shown in an animal model that when tumor cells have both mutations, they invariably produce metastatic tumors.

The scientists arrived at these findings by creating a genetic screen in *Drosophila melanogaster*, the fruit fly. If *Drosophila* seems at first to be an unsuitable model for humans, it is only because our outer forms look so different. Inside we have a great deal in

common: for instance, 70 percent of the disease-causing genes in humans also appear in the fruit fly. Xu and Pagliarini first used fruit flies with mutant *Ras* genes to create noninvasive tumors in developing larvae, then added other mutations to see whether the tumors become metastatic. Although only a handful of these combinations produced the results they were looking for, Xu and Pagliarini's observations are likely to spur the development of new drugs for cancer treatment, targeting genes that collaborate with *Ras* to deadly effect.

As for *Ras* itself, this gene has been in the sights of pharmaceutical companies for some time now, and Xu points out that it still represents a good target for anti-cancer drugs. "Inactivating the tumor-producing effect of mutant *Ras* genes," he says, "will likely be simpler than re-creating the tumor-suppressing effect of genes that are no longer normal, but mutated."

As Xu sees it, "cancer is generally a late-stage disease—but in most of human history, longevity was much lower than it is now. People didn't live long enough to get cancer." What then was the original function of these genes? "We believe they are normally involved in regulating development, especially the size of cells and tissues, and ultimately the size of whole animals," Xu says.

The most exciting aspect of Xu's work on the metastatic partners of *Ras* is undoubtedly its clinical potential, but in Xu's eyes this series of experiments offers another far-reaching benefit as well. "This work really showed the power of model organisms like fruit flies, because we can use them to do a lot of experiments that would not be possible in humans," he says. It was this painstaking, gene-by-gene screening that allowed researchers to find the specific gene interactions that lead to metastasis, and thus to identify the drug targets that look so promising today.

—Sandra J. Ackerman



MICHAEL BARTALOS

Divining the scent of a human: for mosquito, it's a molecular event

To most people perspiration ranks low on lists of attractive features, but one creature finds the smell of human sweat irresistible: the female of *Anopheles gambiae*, commonly known as the mosquito. Just what makes our perspiration so alluring to this ruthless predator is a question that intrigues not only the companies that make insect repellents and the people who use them, but most of all the epidemiologists trying to reduce the toll of mosquito-borne diseases.

Now scientific research is beginning to reveal an answer. John R. Carlson, PH.D., professor of molecular, cellular and developmental biology, Elissa Hallem, a graduate student in the Interdepartmental Neuroscience Program, and colleagues have developed a transgenic technique that allows them to identify the functions of specific odor receptors in the mosquito antenna. Their paper, published in the January 15 issue of *Nature*, describes how the researchers pinpointed the receptor gene, *AgOr1*, and the compound to which this receptor responds, the odorous molecule 4-methylphenol.

The scientists used a "knockout" fruit fly lacking one of its odor-receptor genes. They substituted the mosquito gene *AgOr1* and then measured the animal's response to various odors; the only molecule to produce a strong response was 4-methylphenol. A similar gene, *AgOr2*, used as a control, showed no such response. This observation, together with previous findings that *AgOr1* is present only in female

mosquitoes and that the expression of this gene tends to diminish after the mosquito has had a blood meal, suggests that the *AgOr1* receptor plays an important role in the mosquito's hunting and feeding behavior.

According to Carlson, this work puts researchers "on the right track" toward developing a truly effective mosquito repellent. "If we can find each of the odor receptors and identify the specific compounds they're responding to, the next step would be to come up with inhibitor or blocker compounds, which would bind to the receptors but not activate them," he explains. The mosquito would thus be unable to perceive the odors that normally lead it to a human banquet. Large numbers of people might be protected from bites, or from life-threatening infections. (The mosquito-borne disease malaria kills an estimated one million people each year, most of them children.)

The research on odor receptors may also have a direct application in insect control: the odors most attractive to mosquitoes could be used to lure the insects away from human populations and into traps where they could be destroyed. In principle, says Carlson, the same techniques might even be used against crop pests. But he cautions that "the system we have created, a system that can identify odor-receptor genes, has not yet been applied in other insects." With the work on mosquitoes yielding such promising results, progress on dealing with other insects is probably not far behind.

—S.J.A.

GENE MUTATION LINKED TO OCD

A mutated gene's link to a rare form of obsessive compulsive disorder (OCD) is the strongest proof yet that neuropsychiatric disease can result from a malformed neuronal protein.

In studies published last October and August in *Molecular Psychiatry* and *Molecular Pharmacology*, researchers at Yale and the National Institute of Mental Health found that a rare form of OCD is associated with a mutation in the serotonin transporter gene that disrupts the normal regulation of transport.

"There are not a lot of established connections between genes and behavior," said Gary Rudnick, PH.D., professor of pharmacology, who conducted the research with Fusun Kilic, PH.D., of the University of Arkansas for Medical Sciences. "Our finding focuses on the role of the serotonin transporter in mood and behavior and ties it to a specific behavioral disorder."

The researchers found in two unrelated families a gene mutation that increases uptake of serotonin by the transporter. Further study could lead to a better understanding of how OCD develops and how medications might affect the serotonin transporter.

—John Curtis

HONORS FOR IMMUNOLOGIST

Scientists from around the world gathered in November to honor the late Richard K. Gershon, M.D. '59, 20 years after his death and 30 years after his discovery of suppressor T cells.

Gershon started his career as a pathologist and switched his focus to immunology when he began working on a tumor model in hamsters. His discovery was initially greeted with skepticism, but suppressor T cells, which reduce the immune response of other cells to antigens, are now seen as vitally important in a variety of diseases. In recognition of his work, Gershon was elected to the National Academy of Sciences in 1980.

A lecture has been held in his honor each year since his untimely death in 1983, but this year the Section of Immunobiology and his family noted his passing with a symposium that featured leaders in suppressor T cell research.

—J.C.



Suicide in Children and Adolescents

edited by Robert A. King, M.D., professor of psychiatry and a member of the Child Study Center, and Alan Apter

Cambridge University Press (Cambridge, United Kingdom) 2003; 334 pages

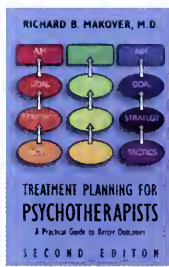
Experts from psychiatry, epidemiology, neurobiology, genetics and psychotherapy bring together the most recent findings in their fields to address important questions about suicide. How can these deaths be prevented? Can they be anticipated? Are there perceptible patterns? What role do families and gender play? What are the treatments for and outcomes of suicide attempters?

Treatment Planning for Psychotherapists: A Practical Guide to Better Outcomes, 2nd ed.

by Richard B. Makover, M.D., lecturer in psychiatry

American Psychiatric Publishing (Washington) 2004; 208 pages

This handbook offers a clear, concise explanation and clinical-case examples of practical treatment plans from initial assessment, through diagnosis and formulation, to the critical decisions about objectives, methodology and technique.



Dementia: A Practical Guide

by Marc E. Agronin, M.D. '91

Lippincott Williams & Wilkins (Philadelphia) 2003; 272 pages

This latest addition to the *Practical Guides in Psychiatry* series is a pocket manual written for everyone from medical students to fellows to psychiatrists, neurologists and internists in practice who want a concise guide to dementia at their fingertips.

A Practical Approach to Transesophageal Echocardiography

by Bessie L. Marquis; edited by Scott T. Reeves and Albert C. Perrino Jr., M.D., HS '87, associate professor of anesthesiology

Lippincott Williams & Wilkins (Philadelphia) 2003; 352 pages

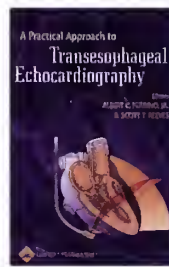
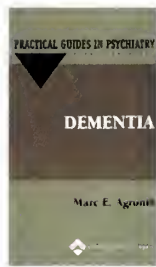
This text offers a concise guide to the current practice of transesophageal echocardiography and includes discussions on its uses in surgical procedures and on data derived from Doppler studies.

Clinical Neuroanatomy, 25th ed.

by Stephen G. Waxman, M.D., PH.D., chair and professor of neurology and professor of pharmacology and neurobiology

McGraw-Hill/Appleton & Lange (New York) 2002; 400 pages

This text links basic concepts in neuroanatomy with clinical correlations. The new edition reflects the state-of-the-art in the pathophysiology, diagnosis and treatment of neurological disorders and discusses the latest advances in molecular and cellular biology in the context of neuroanatomy.



Ellenberg and Rifkin's Diabetes Mellitus, 6th ed.

by Daniel Porte Jr., Robert S. Sherwin, M.D., C.N.H. Long Professor of Medicine, and Alain Baron

McGraw-Hill Professional (New York) 2002; 1,047 pages

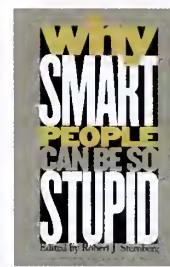
This text is a comprehensive reference on diabetes mellitus, covering basic biochemistry, physiology and pathogenesis, as well as clinical diagnosis and treatment. The sixth edition includes five new chapters, plus new material on the genetic basis of the disease, new hypoglycemic drugs, mechanisms of hormone action and regulation of hormone secretion.

Child and Adolescent Psychiatric Clinics of North America: Psychological Aspects of Chronic Disease

by Lawrence A. Vitulano, PH.D., and Melvin Lewis, M.B.B.S., F.R.C.Psych., HS '59

W.B. Saunders Co. (New York) 2003; 598 pages

Chronic illness in childhood presents many challenges for the child and adolescent mental health clinician. This book examines several major chronic illnesses in depth to provide a better understanding of the physical demands, medical treatment requirements, social limitations and general prognosis for the child.



Why Smart People Can Be So Stupid

edited by Robert J. Sternberg, PH.D., IBM Professor of Psychology and Education

Yale University Press (New Haven) 2003; 272 pages

This book investigates the psychological basis for stupidity in everyday life. Experts shed light on the nature and theory of stupidity, whether stupidity is measurable, how people can avoid stupidity and its consequences and more.

The Perfect Fit Diet: Combine What Science Knows About Weight Loss With What You Know About Yourself

by Lisa Sanders, M.D. '97, HS '00, clinical instructor in medicine

Rodale Press (New York) 2004; 358 pages

Building on her research analyzing more than 700 weight-loss programs, Sanders has "uncovered a fundamental truth about dieting," according to the publisher, that "sustainable weight loss is only possible on a diet that fits [one's] food preferences, satiety signals, lifestyle and medical profile." Sanders, who also writes the monthly "Diagnosis" column in *The New York Times Magazine*, offers a plan for tailoring eating habits and activities to lose weight and keep it off.

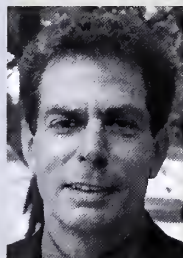


The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to cheryl.violante@yale.edu



MICHAEL MARSLAND



MICHAEL FITZSOUSA



MICHAEL RONNEN SAFFIE



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Bill Clinton

In global cooperation "... every human being counts"

Long-term stability for the United States depends on fostering international cooperation, not as a last resort but as a priority, former President Bill Clinton told an enthusiastic crowd of more than 2,000 at Woolsey Hall last fall. In an explicit critique of the Bush Administration's foreign policy, Clinton said Americans should "cooperate whenever we can and act alone only when we have to, and not the other way around."

A multilateral approach is vital to combat AIDS and other diseases: "You cannot zap a microbe with a missile," said Clinton, who was in New Haven for his 30th law school reunion in October. And by reaching out to help struggling nations, the United States also serves its own interests. "This is not rocket science, but every time we do it, we build a world with more friends and fewer terrorists."

The foundation of global cooperation, Clinton said, is the idea that every human being counts. And that means leaving ideology aside, he said. "Because once you believe you have the absolute truth, then it's not possible for everyone to count. ..."

—Cathy Shufro

Michael Fitzsosa

Encouraging physicians to speak "the appropriate language"

Media consultant Andrew Gilman once coached a NASA engineer who was part of the effort to repair the Hubble Space Telescope. Preparing him for a television interview, Gilman winced at the engineer's description of the evening's mission: "At 23:50, we'll effect an EVA and recalibrate the module."

Did that mean, Gilman asked, that an astronaut would take a space walk at 10 minutes to midnight and adjust the telescope by a few millimeters?

"Yes," the engineer said.

"Jheesh," replied Gilman. "No wonder you can't get money from Congress!"

Speaking at psychiatry grand rounds in October, Gilman advised faculty members who speak to the press to keep their messages simple and focused. Three points repeated three times during an interview communicate more than nine points made once, he said. It also pays to find out a little about the reporter and the story angle before launching into an interview, and to keep the school's media relations staff in the loop.

Gilman also dismissed the notion that science is too complex to be conveyed to the public. Citing the example of the NASA engineer, he urged his audience to use plain English. "It's not dumbing down," he said. "It's speaking the appropriate language."

—Michael Fitzsosa

Jerome E. Gropman

Keeping hope alive for the seriously ill

As a physician caring for seriously ill AIDS and cancer patients, Jerome E. Gropman, M.D., has learned that doctors need to temper their prognoses with humility, regardless of how bleak the patient's outlook may appear. "We should not sit like a judge and hand down a death sentence," he said during a visit to Yale in November. "Never write someone off a priori."

Delivering the Iris Fischer Lecture, the bestselling author, Harvard Medical School professor and chief of experimental medicine at Boston's Beth Israel Deaconess Medical Center recounted some of the stories and themes from his recently published book, *The Anatomy of Hope: How People Prevail in the Face of Illness*. In the context of illness, he said, hope and science are often in conflict. "There's a tension in how to be truthful to patients and ourselves and not take away hope," he said. "We have to be careful about slamming the door on hope."

His patients' efforts to derive meaning from their illness, he said, offered a lesson about hope. "Hope arrives," he said, "when you believe you have real choices to make, when you believe the future can be different than the present."

—Marc Wortman

Nga Lien Tran

Examining how a chemical enters the food supply

Health and safety experts are trying to solve a fast-food mystery: why does a probable human carcinogen appear in such foods as French fries and potato chips, and how much of a health risk does it pose? Nga Lien Tran, DR.PH., M.P.H. '85, senior managing scientist at Exponent and adjunct assistant professor at the Bloomberg School of Public Health at Johns Hopkins University, discussed the puzzle at the November 2003 Interdisciplinary Risk Assessment Forum sponsored by the Institution for Social and Policy Studies at the Peabody Museum. According to Tran, studies conducted by the Swedish National Food Administration and researchers from Stockholm University confirmed in April 2002 that unexpectedly high levels of acrylamide—a chemical used in making cosmetics, plastics and adhesives—were found in some starchy foods after frying or baking at high temperatures. The darker and crispier the food, the more acrylamide was present.

The good news, Tran said, is that neurotoxicity resulting from acrylamide exposure—which has been known to kill fish and paralyze cows—doesn't appear to be a concern. However, people who consume a lot of these foods may increase their lifelong cancer risk by an order of one in a thousand. "We've let the public know, and we're continuing to monitor and measure," she said. "At this point that's all we can do."

—Jennifer Kaylin

Marie Curie at Yale

Despite her scientific eminence, a warm welcome and an honorary degree, the Nobel laureate endured a few slights during her 1921 visit to New Haven.

By John Curtis

MELONEY-CURIE PAPERS, RARE BOOK AND MANUSCRIPT LIBRARY, COLUMBIA UNIVERSITY LIBRARIES



Although Marie Curie tended to shy away from journalists, she hit it off with Marie (Missy) Mattingley Meloney, left, editor of a women's magazine called *The Delineator*. Meloney organized Curie's 1921 American tour and promised to raise \$100,000 to buy a gram of radium. Curie's daughters Irène and Eve, right, joined her on the tour.

When Marie Curie came to Yale in 1921 to receive an honorary degree, opinions among the faculty were decidedly mixed. Although six women had already received honorary degrees from Yale, she was the first to receive an honorary SC.D. Her nomination had come not from the Faculty of Arts and Sciences, but from physicians at the School of Medicine, who had corresponded with the Nobel laureate about the uses of X-rays and radium. Some chemists and physicists on the faculty thought the award was a mistake.

Among them was Bertram B. Boltwood, PH.D., a Yale professor and a leading radiochemist, who felt that the physicians' recommendation was a bit hasty. "When he learned Curie wished to visit him, he told the Yale administration he had no desire to have the honor thrust upon him," said Daniel J. Kevles, PH.D., the Stanley Woodward Professor of History. "He considered it the duty of the institution to entertain her."

Kevles was one of three panelists to discuss the "Intellectual Journeys of Marie Curie" at a three-day symposium in November to celebrate the centennial of Curie's first Nobel Prize and to honor women in science. An exhibit at the Cushing/Whitney Historical Library also examined Curie's life and legacy.

Curie seems to have been destined to lead an unconventional life. She was born into a Polish family that included a grandfather who harbored the revolutionary notion that the children of peasants and nobles should go to school together. Her father was demoted from his job as a school headmaster for consorting with "radicals." Marie Curie herself was illegally taught the Polish language, history and literature as a child and got around the ban on higher education for women in occupied Poland by attending an illegal, clandestine university. She later courted exile to Siberia for the crime of teaching peasant children to read and write.

Years later in Paris she would meet and marry an equally unconventional

man. Pierre Curie was an outsider to the French scientific establishment who had not attended the right schools. In 1903, when he and a colleague were under consideration for a Nobel Prize, his sense of fairness demanded that a third collaborator in their studies of radiation also be included. So it was that Marie Curie received her first Nobel Prize, in physics. Her second, in chemistry for the discovery of radium and polonium, came in 1911, several years after her husband died in an accident.

Their strongly held beliefs would not allow the Curies to profit from their discoveries. "They made a deliberate decision not to patent the process for purifying radium, believing it belonged to the public," said Sara Rockwell, PH.D., professor of therapeutic radiology and director of the office of scientific affairs at the medical school, who also spoke at the symposium.

The United States that Curie visited in 1921 offered a bleak landscape for women in science. They were paid less than men and promoted more slowly. Most found jobs in women's colleges that lacked the resources of larger schools. "Coeds could celebrate Marie Curie, but in the 1920s, few wanted to emulate her," Kevles said.

Her tour culminated in a visit to the White House, where President Harding presented her with a gift of a gram of radium.

Yet even as a Nobel laureate and guest at the White House, Curie was not immune to discrimination on her American tour. The physics department at Harvard blocked an honorary degree for her, and rather than address the question of whether to admit women, the National Academy of Sciences declined to accept her as a member. And there was her reception at Yale.

Despite Boltwood's antipathy toward her, the citation that accompanied Curie's honorary Yale degree was warm and effusive. "It is superfluous to mention her discoveries in science and now she has discovered America. She has often encountered dangers in scientific experiments, but nothing so dangerous as American Hospitality; it is to be hoped that she will not be a Woman Killed with Kindness. She is unique. There is only one thing rarer than genius, and that is radium. She illustrates the combination of both."

And eventually, Curie won over even Boltwood.

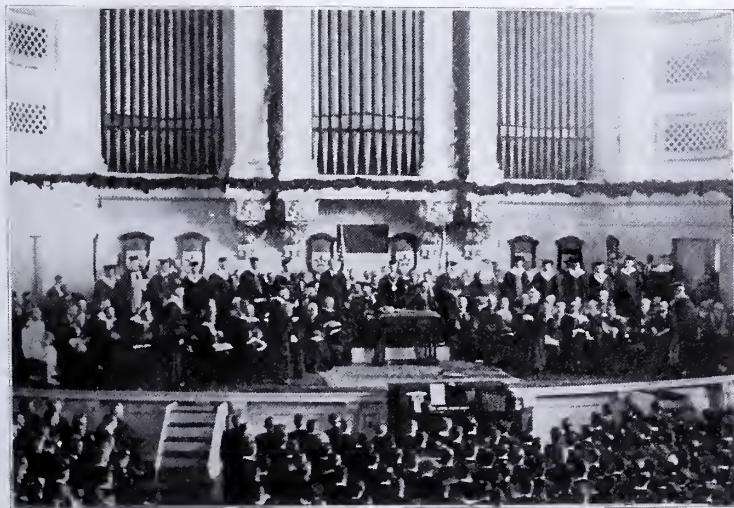
"In the end," Kevles said, "Boltwood did receive Curie in his laboratory and was in fact impressed by her keenness in scientific matters and also her personal amiability."

John Curtis is the associate editor of *Yale Medicine*.

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THE YALE ALUMNI WEEKLY

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MADAME CURIE RECEIVES HER YALE DOCTORATE OF SCIENCE.

Although six women had previously received honorary degrees from Yale, at the 1921 Commencement Curie became the first to receive an S.C.D.



Bertram Boltwood, a leading radiochemist, initially balked at a request to receive Curie in his laboratory at Yale. When Curie did visit him, he was impressed by her keenness in scientific matters.



Jenny Blair likens her Harkness apartment's quirks to those of an old friend. The bathroom door sticks, layers of paint cover everything and her oven overheats by 100 degrees. But, she says, "these are all part of the charm of the place."

By Jenny Blair
Photographs by Terry Dagradi



“That college feeling”

What student in her right mind would choose to live in a dorm for all four years of medical school? Ask Jenny Blair, who enjoyed a gym in the basement, a piano in the Harkness ballroom and snowball fights right outside the door.



idtown, Hyde Park, Brookline. Match Day is upon us, and I am looking for a neighborhood in the cities whose hospitals I've applied to. Soon I will be looking for an apartment. Strange though it sounds,

it will be hard to improve upon the one I have on the medical school campus.

Our class moved into Harkness Dormitory in August 2000, after renovations had polished it back to new. The doors swung smoothly. The floors were so clean that it felt like sacrilege the first time your bare feet felt the crunch of dirt on them. The low-pitched, constant whoosh of building ventilators coming from the courtyard—or the ripping decibels of motorcycles on the Frontage Road side—became our lullabies. We had sinks in our rooms, clean tiled bathrooms down the hall and windows generous enough to help the building shed its old nickname (“You don't live in Darkness Hall, do you?” asked a smart aleck I met through an online dating service).

Though I'd known the freedom of apartment life during my years at Yale College, I initially opted for the dormitory for social reasons. Ask almost anyone who chooses Harkness and they'll say the same thing, though they'll mention the location and the in-house cafeteria and the relief of not needing to look for an apartment in a strange city. New Haven was no novelty to me; I could have picked out a porch-and-yard in the Grad Ghetto in the East Rock neighborhood or on Prospect Street with

English and physics students as neighbors. But I wanted to start medical school with my very own class. So I wedged belongings from the three-bedroom shared apartment I'd occupied during a post-college year into a tiny room beside the elevator, on the eighth floor. It was small, but near everybody else, including students from the other health schools, and you couldn't beat the commute—though that didn't keep us from trotting down Cedar Street late for morning lectures, slinking into the back of Hope 110 with coffee in hand.

A room with a view

I nested quickly, decorating the door with photos from magazines and the obligatory message board, and coming to relish the view from my window: food-cart picnickers on the grass, day-care kids playing and always the stately Sterling Hall of Medicine, with odd windows lit at night. The eighth floor was all-female, and peaceful. The happenin' floor was the ninth. It was there that we threw our parties; people strung black bags over the ceiling lights, and someone DJ'd with his own equipment and we all felt like college freshmen again, only much cooler. These days, first-year students use the ninth floor's kitchen to get together for a weekly dinner they cook themselves.

But no one, it seems, wants that college feeling for long. My classmates, almost to a person, stopped living on the med school campus after their first year. The many perks—Tuesday-night *Queer Eye for the Straight Guy* (or, when we were first-years, *Temptation Island*), instant access to food carts, laundry machines, Ethernet, even the lack of any commute to Yale-New Haven Hospital (which can mean an extra half-hour of sleep during tough rotations)—don't seem to overcome the stigma of a dormitory. Most people moved into high-rises two blocks away, or up to the Science Hill neighborhood, where they walk their dogs and jog past lawns, bushes and postdocs out with spouse and stroller. After four years, though, I'm one of the few die-hards still living here, though I switched to the apartment side of Harkness during second year. (Harkness Apartments is Harkness Dormitory's endearingly scruffy neighbor.

Whether for reasons of convenience, aesthetics or sociability, Harkness has always lent my medical school experience something inimitable.

Living in an apartment overlooking Harkness Lawn keeps Blair connected to the school and classmates. “Friends walk by and wave for me to let them in, and I always know when impromptu snowball scrimmages are on.” Edward S. Harkness Hall turns 50 in 2005; see *Archives* on page 48.



Positioned at right angles to the dormitory—the two buildings hug the courtyard—it is only four stories high, and its units are one-bedroom apartments instead of studio-style dorm rooms. Together they are Edward S. Harkness Hall.) Whether for reasons of convenience, aesthetics or sociability, Harkness has always lent my medical school experience something inimitable.

On the happenin' floor, communal meals

I wondered how other students felt about it. On a recent Sunday evening I revisited the ninth floor to check out the fabled communal meals. When I arrived, a dozen or so students were watching football on TV and eating a pepper-speckled Caesar salad from a big bowl. Two women hovered over great pots of chili on the stove. Empty cans and packages of guacamole littered the counter. A keg waited expectantly in a corner.

Eyeing the generous bowls of corn chips, I sat down beside a first-year named Brendan Jackson who, as it turned out, was a member of a mysterious sixth-floor Frat. “It’s very unofficial—Ru-Rah-Rigma,” he explained mysteriously. “There’s a fraternity on the sixth floor?” asked a classmate. (It’s an all-male floor.) “Yeah. Live on the sixth floor and you’re in.” Jackson is also the Harkness Dorm Liaison. He had recently been elected by his classmates, though he ran unopposed. His duties include presenting the dorm dwellers’ complaints to the Powers That Be. Complaints like what? “The water pressure!” he answered. “None of the TVs work except the one on the ninth floor,” put in a woman who was standing by. Maybe that’s how the ninth floor got so popular.

The home-cooked dinners began because the dining hall is closed on weekends. They were the brainchild of

first-years Caryn St. Clair and Misaki Kiguchi. When I first saw Misaki, words like “brisk” and “efficient” came to mind. As students slipped into the lounge, she swung between kitchen and tables as if on a hinge, handing off bowls of chili topped with blue corn chips, purple onions, guacamole, sour cream and shredded cheese to one eater after another. The room grew happy and noisy, and soon people were wading through the crowd to the keg and helping themselves. I stretched like a cat and enjoyed the atmosphere.

Tired of eating at Subway every weekend, Misaki convened a group of students willing to take turns catering for each other. She makes up the schedule and e-mails it to everyone involved. When people who aren’t part of the circuit show up to mooch, she publicly assigns them a night to cater for the group, trusting in the potential wrath of 40 hungry classmates to exert the necessary social pressure. Dishes served in weeks past have included chicken Marsala, pancakes and caramel apples. As I chatted with the diners, an arm reached into our midst and set down a big pan of

sliced blueberry cornbread. I took a piece, ate it, then took another. Though I was too afraid of being forced to cater for 40 people to sneak a bowl of chili, resistance to cornbread was futile.

Remembering what it was like trying to fit my complicated mess into one room, I asked the general assemblage if anyone had decorated really creatively. One of their number was pushed forward, protesting feebly. "You'll see what can be done with a Harkness room," they promised me. The student in question, willing but abashed, led me to his room and unlocked it.

This man had a gift. Red curtains, sleek pine bookshelves, delicate fabric lamps shaped like Platonic solids, a tidy futon, a patterned rug instead of the standard ratty Persian knockoff, a graceful easy chair. It was Urban Outfitters, it was Ikea, it was glorious. It even smelled good.

Yet even he is planning to leave, as is every current first-year I asked.

I stayed. I love living in Harkness. Friends walk by the window and wave for me to let them in, and I always know when impromptu snowball scrimmages are on. The basement gym is too close for excuses. I can walk downstairs with a folder of music and practice the piano in the ballroom. In late evening I can slip across the lawn to the computer lab or library—the lack of psychological distance between work and home life doesn't bother me, for some reason. Here on the apartment side, the dormitory gods even provide free furniture. My couch and easy chair began life as seating for interviewees in the Office of Student Affairs. Tacit neighborly trades go on all the time, as when a bookshelf or night table turns up in a hallway and a day later is eased, skittering, into someone else's room.

I prefer the apartments for a few reasons. For one thing, I'm not an elevator person. As anyone who has watched me can tell you, I tend to stride purposefully toward my destination. Elevators interrupt the vector. The Harkness elevators were particularly irksome because they were often out of order. This happened so often that I learned to build it into my day, leaving extra time to get up and down the stairs on days when the building was competing for a single elevator. Living on the eighth floor, it was just barely worth it to wait rather than take the stairs, but I never learned patience. Apologetic signs appeared on the elevator doors over and over again, and soon we all knew where the first-floor stairwell door was. When I moved into Harkness Apartments, I chose a second-floor unit. Suddenly it was possible to run home from the hospital and pick up a forgotten stethoscope or heat up some lunch.

A decided advantage to the apartment side of Harkness, indeed, is the kitchenette. Though I'm no chef, it can be hard to transition back to a meal plan after having lived in an apartment. The dormitory's common-room kitchens come complete with sink, stove, microwave and

freezer ("NOT A REFRIDGERATOR [sic]," a sign reminds us). But their public location creates a certain tension between the shared and the owned. Some people take their chances and leave things there. When I was a first-year, one student used to leave her carton of eggs out on a shelf. I doubt anyone stole an egg, but I remember slices gone missing from the loaves of bread I stored in the freezer. Annoyed, I piled breakfast fixings onto a cart every morning—pot, oatmeal, eggs, plate, fork, spatula—and wheeled it into the elevator to ride one floor up. Ding. But the dumpy little cart dampened any culinary ambitions I might have had after managing breakfast. Now that I have a kitchen of my own, I've upgraded to soups and stir-fries.

Like an old friend

It's taken some practice, though. In contrast to the spanking-clean Harkness dorm rooms, the apartment side hasn't been renovated. I like it that way; my apartment's quirks are like an old friend's. It's the type of place where everything is covered with layers of paint—radiators, light switches, coat hooks. Every piece of furniture is an orphan. Several generations of curtain rods grace each window. The window in the bedroom is stuck slightly open year-round, while the bathroom door, if fully closed, traps guests inside (if I forget to warn them, I have to kick it open while they cower behind the sink). The oven reliably overshoots by 100 degrees, and the markings wore off the burner dials ages ago. But these are all part of the charm of the place, and I've mastered the workarounds. With vigilance and a thermometer, I can even wrest pie from the oven.

Do fourth-year medical students get "senioritis"? As part of final-semester lassitude, I spend a lot of time daydreaming about my next place, as well as reminiscing. I've lived in a lot of apartments. There was a New Haven summer sublet on Bishop Street, with hardwood floors that sloped and roaches so ubiquitous that I kept dishes buttoned into Tupperwares to keep them clean. There was a carpeted one in Ann Arbor, an easy walk from downtown, that smelled of the downstairs neighbor's ferrets. At night a freight train hustled by, waking me, then soothing me back to sleep. There was a flat in Fort Lauderdale that huddled in a patch of downtown jungle. I remember wet heat, ants streaming across the windowsill to the spot of jelly on the counter, peacocks strolling outside. The year after graduating from Yale College, I lived in New Haven in a place memorable more for its roommates—a bread-baking astrophysicist, an Orthodox Jew who knew six languages and a geologist obsessed with bunnies and Renaissance Fairs—than for its physical plant. Then I was accepted to Yale Med. For four years, Harkness has welcomed me home, and I could hardly ask for better. **YM**

Fourth-year student Jenny Blair will begin a residency in emergency medicine this summer at University of Chicago Hospitals.

A bed at Ma Levin's, dinner at Nick's and nary an e-mail in sight.

It's been more than half a century since Arthur C. Crovatto, M.D. '54, HS '61, was a first-year Yale medical student living in Ma Levin's boarding house on Howard Avenue, but he can tick off the names of his housemates as easily as if he were telling you who was at last Saturday night's poker game: "Let's see, there were 11 of us. I roomed with Bob Joy. Buzz Lind, John Rose and Lowell Olson were down the hall. Then there was Harry Miller ... Bill Elliott. ..."

Residential life for medical students in the early 1950s fostered a camaraderie that has endured well beyond that triumphant moment when they received their diplomas. Despite, or perhaps because of, arduous studies and living conditions that can best be described as austere, graduates of 1954 recall those days with the warm affection of soldiers bonded by the rigors of boot camp.

Recollections of that time, which ended with the opening of the Edward S. Harkness Memorial Residence Hall in the fall of 1955, live on in a class book assembled by the Class of 1954 in preparation for their 50th reunion next spring. Robert P. Hatch, M.D. '54, edited the class book.

"We loved the place," Crovatto says of his first New Haven domicile. (When her boarders told her about a broken toilet seat, Ma Levin responded that it was for "half-assed doctors. The name—'home for half-assed doctors'—stuck.") Ma Levin's boarders may not have known their host's first name, but the house rules were never in doubt. "She wouldn't tolerate women. Wouldn't let them in the front door," Crovatto recalls. Everyone knew Ma hoped her niece Jackie would marry a medical student, so whether this prohibition was a reflection of her moral code or just a desire to lessen Jackie's competition was not known. "Only once in my life have I found a bottle of wine so bad that I couldn't drink it. It was a bottle of something Ma Levin's niece tried to share with us," recalls Lowell E. Olson, M.D. '54. "But it was a nice place to live. We all got along well."

For \$8 a week, Levin's tenants got a room, housekeeping service, clean sheets and Sunday breakfast. They ate the rest of their meals at Nick's or one of the other greasy spoons that lined Congress Avenue. Dinner cost about 50 cents, and students often worked in the restaurant in exchange for food.

But the big treat for those who stayed at Ma Levin's was access to something rare and wonderful—television on Sunday evenings. "I'd never seen TV before. We'd all get together and watch *Your Show of Shows* with Sid Caesar," recalls Harry C. Miller Jr., M.D. '54. "She was like a surrogate mother to us."

Although Ma Levin's boarders enjoyed the homey atmosphere, they were usually eager to move into one of the medical school dormitories farther down Howard Avenue (where the children's hospital now stands). The cost was between \$5 and \$8 per week for a single room and between \$3 and \$5 per person for a double. But the main allure was a chance to interact with the more advanced students and to learn from their experiences. Plus, there were fewer rules. "I liked it better," says Crovatto. "You were absolutely free to do what you wanted, as long as you didn't burn the place down," which probably wouldn't have been hard to do. Adds Miller: "I remember a guy was locked out of his room, so he just broke through the wall."

Some students had radios or phonographs for entertainment. "I brought a stack of very precious first-edition 78s I'd collected: Glenn Miller, Tommy Dorsey," says Miller. "When I left med school I foolishly didn't take them with me. Somebody probably used them as Frisbees." As for access to telephones, "It wasn't a big deal in our lives," says Miller. "I can't even remember. There may have been a pay phone somewhere." One thing everybody remembers vividly was the formal tea hosted by faculty wives four days a week. "The tea was poured from a samovar, with cups, saucers, spoons, little cakes, the whole bit," says Crovatto. "Everyone came—faculty, nurses, students, house staff. It was a wonderful tradition." Less charming, but arguably more timeless, were the loud parties on the back porch of the dorm. Crovatto recalls



Members of the Class of 1954 gathered outside a rooming house on Howard Avenue, sometime in the 1950s.

a particularly boisterous gala involving fireworks after the board exams. "There was a convent right behind us. Usually the sisters were very tolerant, but this time they called the police."

The Class of 1954 included three women. Two lived off campus, and one, Eva H. Henriksen, M.D. '54, lived with women from the public health program in a dormitory next to the men's building. Consequently, dormitory life for her was significantly different than it was for the men.

"We were allowed to study together, to help each other, so the guys would get together in their dorm," Henriksen says. "But I wasn't going to go next door to study with them. You just didn't do that in those days. I wasn't a great med student, but I did it all myself." Henriksen did find a way to "visit" with one student in the men's dorm. "The space between his window and mine was just close enough that if we both leaned out, I could hand him a cup of tea," she recalls. "Then he'd hand me his mother's home-baked black walnut cookies."

Also outside the mainstream housing experience were World War II veterans, who lived with their wives and children in Armoryville, a village of metal half-cylinder Quonset huts built by the Army near the Yale Bowl. Two couples occupied each hut, one couple at each end, with the two apartments separated by a thin wall. "In the winter, whether you were warm or cold depended on which way the wind was blow-

ing," says Richard D. Pullen, M.D. '54, a Navy veteran. The apartments, which rented for \$37 a month, were heated with a pot-bellied coal stove and cooled by a sprinkler on the roof. "Silvia Heap, the wife of Walker Heap, put a can of frozen orange juice on the counter to thaw," recalls Hatch. "When she came back a few hours later, it had exploded in the heat." Hatch's other vivid recollection is that "the walls were quite thin, so you pretty well knew what activity was going on next door. It was kind of intimate that way."

While football games at the Bowl provided entertainment for veterans and their wives, they could also be a hardship. Either the couples were hounded by tailgaters wanting to use their bathrooms, or the roads leading to their homes were blocked off by traffic police. Getting to and from the medical school was also a challenge. Hatch remembers commuting for a while on an "old rusty bike I'd picked up somewhere." Armoryville couples usually walked, biked, took the bus or used vintage Plymouths or Fords. "It might have been hard, but I remember it as a happy and fulfilling time," Hatch says.

Indeed, whether home was a Quonset hut, a dormitory or a rooming house, the memories of former occupants have acquired the patina of nostalgia. "Things happen in your life that are life-changing. My going to the Yale Medical School was one of them," says Crovatto.

—Jennifer Kaylin

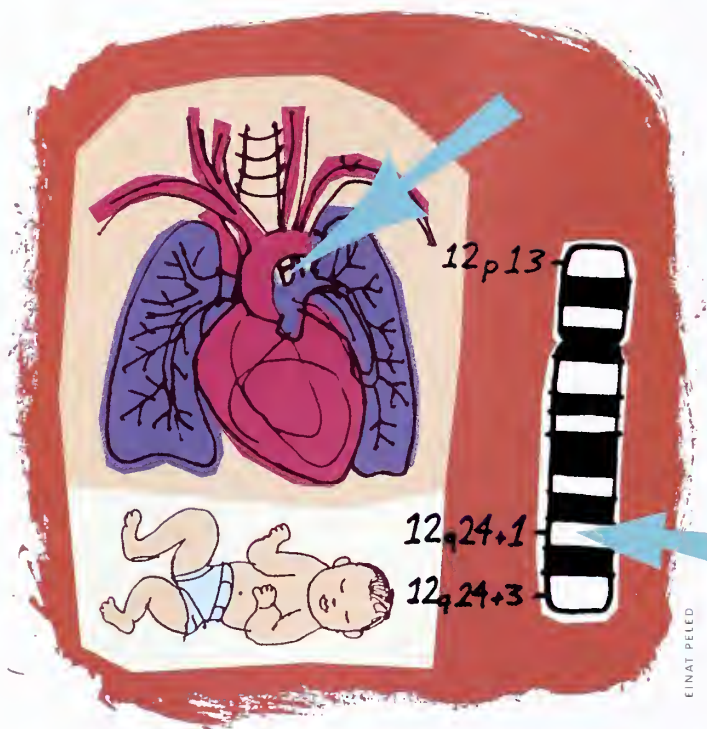
Journey of the heart

By Trisha Gura

A collaborative bridge between Yale and Iran spanning the genetics of cardiovascular disease is a two-way street for science.

Children in Iran face an elevated risk of patent ductus arteriosus, a congenital heart defect in which a critical blood vessel in the heart does not fully seal after birth.





Researchers from Yale and the Iran University of Medical Sciences in Tehran believe a gene mutation on chromosome 12 causes at least one-third of patent ductus arteriosus cases in Iran and may be responsible for as many cases in other populations throughout the world.

Every medical student must struggle to fight off distractions, but Arya Mani, M.D., had to contend with more than his share. Just before he began medical school in his native Iran in the late 1970s, the nation's capital, Tehran, was rocked by a massive, student-led uprising that made headlines around the world. The Ayatollah Khomeini ousted Mohammad Reza Pahlavi, who had ruled the nation as the Shah of Iran for nearly 40 years. Khomeini rose to power on the wings of an impassioned revival of Islamic fundamentalism, and toward the end of 1979 he began a nail-biting 444-day stand-off with the United States over the capture of hostages from the American embassy, an incident which continues to have profound political repercussions today.

Mani did his best to keep his mind on his studies against the increasingly tense political backdrop in Iran, but in the midst of the upheaval his university was closed, and he fled to the Johannes Gutenberg-University of Mainz in Germany to complete his training. In the last leg of a long journey, he arrived at Yale as a hospital resident in 1992, and he has made New Haven his home ever since.

Mani, now a cardiologist and assistant professor of medicine, had long been convinced that genes play a critical role in many forms of heart disease, but he hadn't had an opportunity to do serious research in the area until he became a chief resident at Yale in 1993. He then found an enthusiastic and like-minded mentor in Richard P. Lifton, M.D., PH.D., who has spearheaded an innovative series of genetic research projects around the world, including groundbreaking research on the genetic basis of hypertension. Mani returned to his homeland in 1998 as part of a globe-spanning collaboration between New Haven and Tehran. By bringing Yale's state-of-the-art genomics initiatives to bear on the time-honored marriage customs of Iran, Mani's work has put the Lifton lab within striking distance of an elusive gene or genes that act to cause a common congenital heart condition.

A novel approach

In his science, Lifton, the chair and Sterling Professor of Genetics, believes in going to extremes. Find genetic culprits at the pathological and geographical edge, he says, and you can apply your insights to the norm. Thus he has investigated families with the very highest and lowest blood pressure to find clues to treat the everyday hypertension that affects the rest of us.

Populations in which marriages between close relatives are common are particularly ripe for study, says Lifton, a Howard Hughes Medical Institute investigator, because inter-marriage keeps the same genes circulating within the group, and genetic diseases occur more frequently. For example, first cousins are much more likely to carry identical defective recessive genes passed down from a grandparent. If these cousins marry, their children run a higher risk of genetic dis-

ease than children in more diverse populations. And the more such illnesses arise in a small, discrete population that practices intermarriage, the easier it is to spot recessive genes that may be responsible. On any given day in his third-floor lab in Yale's new Anlyan Center, Lifton might be found poring over pedigrees of a Saudi Arabian village, a family in the Italian Alps or a close-knit clan in the South Pacific.

The approach has paid off: to date, members of Lifton's lab have unearthed more than a dozen genes involved in the regulation of blood pressure and several other genes underlying conditions ranging from osteoporosis to vascular disease of the brain.

Mani knew that 25 percent of live births in Iran arise from parents who are closely related, so he thought that the country could provide a uniquely valuable setting to apply Lifton's methods. He proposed to travel to Iran to conduct a systematic study of disease patterns in families with closely related marriage partners. Lifton advised Mani to first identify any diseases that are markedly more common in the general Iranian population than would be expected from his clinical experience at Yale, and to then look for a subset of those illnesses that occurs frequently among children of closely related parents.

To prepare for the journey, Mani searched the medical literature and discovered a research paper written by Shahrokh Naderi, M.D., an Iranian gynecologist, in 1979. Naderi had catalogued several diseases that were more common in Iranian children of closely related parents, including congenital heart disorders. Neither Mani nor Lifton was aware of any other reported association between intermarriage and cardiovascular disorders, so Mani contacted Naderi, who has also emigrated to the United States, for advice on following up this work in Iran. Mani also consulted with Iranian-born Tayebeh M. Rezaie, M.Sc., at the University of Connecticut Health Center in Farmington, who had been studying genetically based illnesses in Middle Eastern populations. Rezaie provided Mani with a list of candidate illnesses, including the congenital heart defect called patent ductus arteriosus, or PDA.

The ductus arteriosus is a normal fetal structure that joins the aorta to the pulmonary artery; since the fetus obtains oxygen from the placenta, the ductus arteriosus allows blood to bypass the lungs to supply the rest of the body. In PDA, the ductus arteriosus does not fully seal off after birth, and some oxygenated blood in the aorta returns to the lungs via the pulmonary artery instead of entering the general circulation. Many children with PDA experience nothing more than a mild heart murmur or tiredness and are not properly diagnosed for two years or more, but some infants with PDA must be rushed to emergency rooms, where surgeons repair the defect to prevent congestive heart failure.

Mani had seen patients with severe PDA symptoms in his rounds at Yale. But American physicians weren't certain that the condition had a genetic cause because it appears so

sporadically in the United States and, more often than not, does not seem to affect PDA patients' relatives. Though this clinical picture is typical of recessive illnesses masked by a genetically diverse population, the consensus was that PDA is caused by unknown environmental triggers.

Politics often trumps science, and there were particularly worrisome political hurdles facing Mani in his quest to do research in Iran. Relations between the United States and Iran were severely strained by the 1979 hostage crisis, and have been mixed at best since then. Though there have been instances of cooperation, such as the recent U.S. aid to Iran in the aftermath of the earthquake in the city of Bam (See sidebar, page 29), President Clinton instituted a strict trade embargo against the country in 1995, and President Bush famously named the country in his 2002 State of the Union address as part of an "axis of evil." Fortunately for Mani, Asghar Rastegar, M.D., associate chair for academic affairs in the Department of Internal Medicine, had been building medical partnerships between Yale and countries in need, including Iran, for a dozen years.

After the fall of the Soviet Union, Rastegar, an Iranian by birth, organized collaborative efforts with Russian educators, arranging faculty exchanges and trips to Russia for Yale researchers. With the announcement of Clinton's trade embargo, Rastegar again sought to build scientific bridges. "I felt that Iran was being isolated politically," he says, "but that such isolation should not extend academically." For example, Rastegar has sponsored Iranian faculty members to spend sabbaticals at Yale and more recently he has helped to set up partnerships between Iranian physicians and two Yale researchers—Richard S. Schottenfeld, M.D. '76, professor of psychiatry and master of Davenport College, and David A. Fiellin, M.D., associate professor of medicine—to study issues related to substance abuse and HIV in Iran.

Introductions in Tehran

Rastegar, who had known Mani from his student days during the Iranian revolution, acted as Mani's go-between with Iranian physicians and scientists, so when Mani arrived in Iran he was able to quickly team up with internist and nephrologist Behrooz Broumand, M.D., at the Iran University of Medical Sciences in Tehran. Broumand was keenly interested in genetically based kidney diseases and was eager to learn techniques to ferret out the precise genetic defects underlying these conditions. However, he says that he and other physicians at Iran's top hospitals are handicapped by the country's economic struggles and political isolation. "We have a shortage of basic science knowledge in Iran because of the lack of facilities," Broumand says.

According to Broumand, only about 5 percent of Iran's gross national product goes toward health care (compared to 13 percent in the United States), and many hospitals do not have essential medical equipment such as CT or MRI

machines, let alone facilities for basic research. The physicians who staff Iran's hospitals carry very heavy patient loads but are usually paid only about one-tenth the salary of their colleagues in private practice.

"They really had to be devoted to work in the hospital," Mani says. But the doctors he met at Tehran's Shahid-Rajai Cardiovascular Medical Center at the Iran University of Medical Sciences were anxious to help him with his work, and appeared to be motivated more by a thirst for knowledge and a desire to train with new technology than by financial compensation. Such physicians formed the Iran-based part of Mani's team, and once they provided him with patient records and recounted their clinical experience with Iran's close-knit families, it didn't take long for him to conclude that the University of Connecticut's Rezaie was right—PDA in Iran had all the earmarks of a promising candidate illness for genetic analyses.

Lifton still recalls a phone call Mani made to Yale from Tehran. "He told me, 'I have seen 20 cases of PDA here in two weeks but only half a dozen in my entire clinical experience at Yale.'" The patient records painted a startling picture: at Shahid-Rajai, PDA accounted for 15 percent of 13,000 congenital heart defects, while the best estimates say that PDA makes up only 2 to 7 percent of congenital heart disorders in the United States. And the disease showed up far more frequently in children whose parents were first cousins. When the researchers looked closely at 338 recent cases of babies born with PDA, nearly two-thirds had closely related parents.

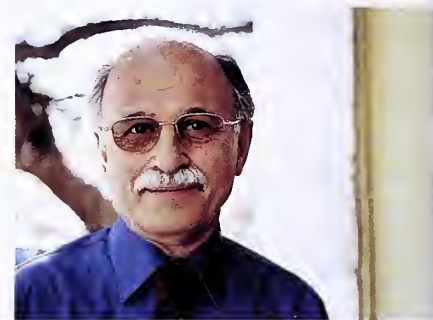
These data indicated that, at least in Iran, the disease is almost certainly caused by a defect in one or more recessive genes.

Mani collected blood samples from 21 PDA patients born to parents who were first cousins for genetic analysis back at Yale. Members of Lifton's lab combed through the patients' DNA and compared it to samples from unaffected children, performing analyses that mark stretches of the genome where genetic defects might lie. The lab's preliminary analyses pointed toward three chromosomes as culprits, but more intensive number crunching eventually steered the group toward a section of chromosome 12; nine PDA patients had sequences in this region that were so similar that the odds of the matches occurring by chance are less than one in a million. In a November 2002 paper in the *Proceedings of the National Academy of Sciences*, Mani and Lifton proposed that a gene mutation somewhere in this section of chromosome 12, which they have christened PDA1, causes at least one-third of the PDA cases in Iran, and may be responsible for as many cases in other populations throughout the world. The study is further vindication of the cross-cultural methods that Lifton has so profitably used thus far.

"This is a very interesting approach, and one that will be even more powerful in the near future," says molecular geneticist David M. Altshuler, M.D., Ph.D., of the Broad Institute in Cambridge, Mass. In particular, Altshuler says that the approach of Mani and Lifton benefits from a new genetic tool called a haplotype map—in essence, an exhaustive inventory of common DNA variations within human



TERRY DAGRADI (2)



KENNY BRAUN

LEFT TO RIGHT Arya Mani returned to his native Iran to seek out diseases with a genetic cause. Back at Yale, Richard Lifton's analysis of DNA led to a section of chromosome 12. Behrooz Broumand teamed up with Mani in Iran to seek out genetic underpinnings of disease.

populations. Knowing those variations will give geneticists such as Lifton a head start in identifying DNA patterns that might be linked to diseases.

Putting science over politics

Members of the Yale-Iran PDA collaboration still work together, but they are also heading in different directions. Lifton and his colleagues are whittling away at millions of base pairs on chromosome 12 to find the gene that carries the mutation that causes PDA. So far, they have ruled out three promising candidates, but there are 31 more to test. Lifton is also applying his methods to other diseases found in different isolated populations; for example, he is now on a hunt for the genes that confer a high risk of heart attack among the people of the Kosrae Islands in the South Pacific. Meanwhile, Mani and Lifton have begun work to uncover the genetic underpinnings of the high risk of early heart attack in Indian men, which seems to persist even if these men leave India to live elsewhere.

As for Broumand and his Iranian colleagues, they are building on the training Mani gave them by collecting tissue samples from adult heart disease patients born of closely related parents in the hopes of finding genes related to that ailment. In the end, the New Haven-Tehran collaboration was a win-win situation, Broumand says—America has cutting-edge genomic technology, and Iran has unique study populations. If the two countries continue to join forces, he says, science can more rapidly find the treatments that patients so desperately need.

But Broumand does voice one note of caution. Many of the Iranian patients who participated in the study did so, he says, because they hope that they or their descendants will eventually benefit from any treatments that emerge. Similarly, Iranian physicians donated their time to expand their knowledge and to better treat their patients. Broumand fears that those in poorer nations who help to make cross-cultural medical collaborations possible could be forgotten once the necessary data are gathered. “If the studies stop at the point when the paper is published, then the fruit is dead and nothing else will happen,” he says. For his own part, Lifton has been inviting researchers from Iran and other countries to spend time training in his lab and to take knowledge back to their home countries.

Broumand believes that everyone can benefit if Western researchers maintain strong contacts with colleagues in other regions, not simply by reading each others’ papers, but by engaging in regular discussions with each other. And this is particularly true where the United States and Iran are concerned. “I believe that if we go through cooperation in science,” he says, “we will create an environment to soften the politics and the violence, which is based on politics. That is the hope.” **YM**

Trisha Gura is a science writer in Brookline, Mass.



In earthquake’s aftermath, Yale physician makes a journey back to Iran

Five days after an earthquake devastated the Iranian city of Bam in December, Asghar Rastegar, M.D., professor of medicine and associate chair for academic affairs in the Department of Internal Medicine, was on an AmeriCares cargo plane carrying 80,000 pounds of emergency supplies. His mission was to help deliver the supplies and assess the city’s medical needs for the next two to three months. Rastegar was asked to help because he is originally from Iran and had worked with AmeriCares on relief efforts after a 1990 earthquake there. And he’s familiar with the area, having taught at the medical school in Kerman, the provincial capital 120 miles from Bam.

“It was a very peculiar feeling,” he said of the approach to Bam.

Roads were open and there were no immediate signs of devastation. “You enter the city and after two blocks everything is destroyed.”

The earthquake, which struck at 5:30 a.m. on December 26, destroyed most of the city, including its two hospitals. The death toll was at least 43,000. Most of the city’s health workers were killed, leaving no one to treat the injured during the crucial eight hours following the earthquake. Although physicians and nurses from Kerman and other nearby cities filled the gap heroically, Rastegar said national planning for the earthquake was missing. “Iran sits on a major earthquake fault,” he said. “This is going to happen again.”

Now Iranian officials, working with Iranians who live in the United States, are planning meetings to prepare an emergency response plan.

—John Curtis

Two alternatives, each a little wrong

With that definition of a dilemma in mind, Yale's cadre of bioethicists waded into our mailbag and weigh in on readers' questions from the front lines of medicine.

By Marc Wortman

Illustrations by Serge Bloch

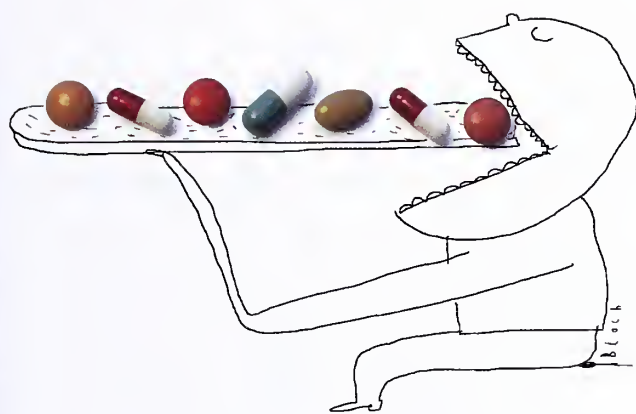
In the 1980s, neurosurgeon Dennis D. Spencer, M.D., HS '77, was a leader in an investigational effort at Yale to transplant fetal cell tissue in the brains of Parkinson's disease patients. Animal studies had shown that implanting the cells might reverse the tremors and other neurological problems caused by the disease. His research team applied for a grant from the National Institutes of Health (NIH) to carry out some of the first studies in humans. Unlike other teams applying for the grants, Spencer's group refused to include placebo surgery as part of their study. The sham surgery would have required him to carry out all the steps of the transplant surgery—drilling a hole through a patient's skull and inserting a needle into the hole—but without delivering any fetal cells. "My reading of the literature," he now says, "showed that any placebo effect from surgery would have been short-lived. We believed that over time you could clearly judge the efficacy of the procedure without subjecting patients to an unnecessary risk. We felt to do so would be unethical." NIH insisted on the placebo surgery. "We didn't get funded."

For Spencer, who is now interim dean of the School of Medicine, that experience marked the beginning of his need to study bioethics in a more focused way. "I started reading the literature on the ethics of using surgery as placebo. I read what happened in the past and that helped crystallize the issue for me." He and his colleagues began a series of debates on the subject at NIH and neurosurgical society meetings. "For scientists, study controls and placebos are important, but you need to consider the ethical issues." While no formal policy on placebo surgery resulted, "We got people to think about it."

The need to think about, explore and, when possible, resolve such complex issues has increased at Yale and elsewhere as medicine has become more complex. Spencer is one of many Yale physicians who regularly encounter ethical challenges in their work. They have a number of resources available to advise them when necessary. The Yale-New Haven Hospital Bioethics Committee—a panel of physicians, nurses, lawyers, social workers, clergy, ethicists and community members—reviews dilemmas, sets guidelines for care and also looks into issues about the quality of hospital services and physician conduct. "As professionals," says Thomas P. Duffy, M.D., professor of medicine and a founding member of the Bioethics Committee, "we have an obligation to monitor how all of us are performing as physicians. The actions of one reflect on all of us."

When urgent bioethical dilemmas requiring swift, high-level decision making arise, physicians can turn to the hospital's chief of staff, Peter N. Herbert, M.D. '67, HS '69, and attorneys for final arbitration. Any Yale investigator seeking to carry out experiments involving human subjects must file an application with one of four university institutional review boards that oversee the studies, based on federal guidelines. A variety of other departmental committees and individual experts are also available to help resolve disputes when they occur. "Ethics," says Robert J. Levine, M.D., HS '63, professor of medicine and a co-founder of the hospital ethics committee, "is civilized society's alternative to violence in dispute resolution."

Levine is co-chair of Yale's Interdisciplinary Bioethics Project and director of the Donaghue Initiative in Biomedical



Dilemma 1

Is it ethical to help a patient against his will or when he doesn't know or understand his situation?

and Behavioral Research Ethics at Yale. He points to the Greek origins of medical ethics as what he terms “a field for developing standards for behavior that is praiseworthy or blame-worthy.” However, he also defines an ethical dilemma as one in which there are “two alternative courses of action, each of which is a little wrong.”

Disputes arise because opposing responses are possible. Nonetheless, dilemmas require resolution if the needs of individuals and society are to be met. Last autumn, *Yale Medicine* invited its readers to submit biomedical dilemmas they have encountered in the course of their work, and many of you responded with issues where a proper course of action was not necessarily obvious. Issues ranged from a family that insisted for religious reasons that a loved one who was suffering not receive pain medication to concerns about the professionalism of colleagues.

Working with Levine, Contributing Editor Marc Wortman and the editors of *Yale Medicine* selected four provocative and difficult-to-resolve dilemmas. Individual faculty members with relevant expertise were invited to reflect on one of the dilemmas and to present their views of the logic of a resolution. The dilemmas are presented anonymously but are based on real situations described by readers from around the country. **YM**

Marc Wortman is a contributing editor of *Yale Medicine*.

A young man with schizophrenia and a history of non-compliance with treatment was admitted to my outpatient practice in a severely psychotic condition. He was completely lacking insight into his condition, and all approaches to gain compliance—most importantly, taking medications that could reduce his psychotic state—failed. His mother convinced me to prescribe medication, which she secretly placed in the patient's food for nearly two years. I saw the patient for medication checks regularly, but he was unaware of his “compliance” throughout this time. This strategy resulted in slow, steady and quite remarkable improvement in all areas of functioning. The only untoward event, if you will, was the patient's return to a pattern of partial compliance and eventual return of some symptoms several weeks after I chose to tell him the entire story. I had simply grown too uncomfortable with the situation, realized that this could not go on forever, and hoped that his clinical improvement just might allow him to embrace a proven, efficacious treatment (which was the ultimate plan discussed with his mother prior to embarking on treatment). Despite some decline in his condition and only partial compliance, the patient continues today improved from admission and much more amenable to inducements to adhere to his regimen. I believe I have given this individual a fighting chance where there was none—yet I have been acutely aware of the ethical dilemmas in his treatment along the way. Was I right to pursue this course? “A person with schizophrenia, such as this patient during psychotic exacerbations, may not be capable of making a variety of decisions and may require guardians to look after their interests. Guardians, however,

may not force medications on outpatients in Connecticut,” says Howard V. Zonana, M.D., professor of psychiatry and head of that department’s forensic psychiatry residency program. “Patients frequently don’t like to take medications. They have some unpleasant side effects. As part of their illness, some patients don’t believe they’re sick.” Zonana chaired the YNHH Bioethics Committee from its inception in 1985 until 1999.

He notes that psychiatrists are not alone among health care providers in receiving requests from one family member that they deceive another about care being given. For instance, physicians in family practice may encounter patients with sexually transmitted diseases who request that the doctor treat their spouses surreptitiously because they are afraid of threatening their marital situation. To hide information from one patient for the sake of another, he says, “is putting the needs and beliefs of the person who wants to keep the secret first and is conspiring in a deception. The doctor who does so is making complicated value judgments and is being co-opted. Sometimes, as in a case like this, it may work out, but there are many more times when it won’t, and the price for a betrayal of trust is very high, threatening both the present and future physician-patient relationships.”

Zonana, medical director for the American Academy of Psychiatry and the Law, helped to write the state of Connecticut’s civil commitment statutes. Psychiatrists, he points out, operate under extensive legal regulation because they have powers akin to those of the police to detain a mentally ill person involuntarily. He says, “There are many chronic schizophrenics on the street, and we don’t go around surreptitiously injecting them with syringes of medications. There’s always a balance between individual autonomy and social needs and health. If somebody becomes gravely disabled or dangerous, the person loses some autonomy. There is always a dilemma about what values the individual and a community hold more primary. In this case, I don’t see the clinical situation compelling enough to justify this deception.” He contends that there are other ways to help someone gain insight into his or her condition. “The doctor’s intent was clearly humane, but I think in the long run honesty trumps health outcomes. I would not have been willing to do this.” ■

Dilemma 2

Human subjects research:
when is use of a placebo
ethical?



There are several standard drug therapies that can help prevent vertebral fractures in some women with osteoporosis, a potentially serious problem associated with a condition common among aging women. A pharmaceutical company asked me to design and direct a study of a new medication that shows promise of preventing fractures in many more women. I designed the study to compare the new drug with placebo, in which neither the clinician nor the patient would know whether she was receiving the drug or a pill having no effect. Based on statistical analysis, the proposed trial could not show the new drug's effectiveness until the number of new fractures in the placebo group exceeded by 150 the number in the group receiving the new drug.

Our hospital's institutional review board, or IRB, rejected the study, claiming it would be unethical to treat patients with a placebo when there are standard therapies that are known to be at least partially effective. The review board suggested that, instead of placebo, we give the control group one of the standard therapies. I disagreed because most women who have osteoporosis do not receive such treatment, particularly when they have no symptoms. (The women to be recruited for this study will have no symptoms of osteoporosis.) Furthermore, most vertebral fractures complicating osteoporosis have no symptoms, and the women who have such fractures often don't even know it; it's not as if they have serious pain or disability. Moreover, it will still be necessary to continue the trial until the number of new fractures in the control group exceeds by 150 the number in the group receiving the new drug. The same number of women will experience this injury; it will just take a lot longer to reach that number. In other words, there would be a substantial loss in efficiency of the trial with no compensating benefit. Was the review board's action right in this case? As chair of the Human Investigation Committee at the School of Medicine for 30 years until 2000, Professor of Medicine Robert J. Levine, M.D., HS '63, was called upon to review hundreds of applications for testing new therapies. He is the author of the widely used book *Ethics and Regulation of Clinical Research* and founding editor of the journal *IRB: A Review of Human Subjects Research*. He agrees with the review board's decision. "When a therapy known to be effective already exists, even if only partially beneficial, and withholding the effective standard may result in serious complications, it is unethical to use placebo."

Levine suggests that the physician consider an alternative study using what he terms an "add-on" design for the trial. This is possible when a new drug acts by a different mechanism than the standard drugs currently used in medical practice. In osteoporosis, one of the standard therapies, a combination of vitamin D and calcium, is partially effective in the prevention of new fractures, according to Levine. Since vitamin D/calcium works differently in the body than the new drug, he believes it would be appropriate to give this combination to all patients and also give half of the patients the new drug and the other half the placebo. "In this way," he says, "the trial has the advantages of being a placebo-controlled study without depriving the women of a known, partially effective therapy." Although it will still be necessary to continue the trial until the number of new fractures in the control group exceeds by 150 the number in the group receiving the new drug, Levine believes the loss of efficiency will be compensated by the therapeutic benefits to the participants getting the placebo. "If I were on that IRB, I would approve such a study." ■

Reunion program highlights ethics

"Bioethics in the 21st Century," a discussion focusing on the contributions of alumni, faculty and students at the School of Medicine, will be the subject of an Alumni Reunion Weekend program June 5 from 9 to 11 a.m. in the Anlyan Center Auditorium, 300 Cedar Street. The panel will be moderated by Robert J. Levine, M.D., HS '63, co-chair of the Interdisciplinary Bioethics Project at Yale.

The panelists and their topics are: Thomas P. Duffy, M.D., "Ethical Aspects of Medical Professionalism in the 21st Century"; Rupali Gandhi, J.D. '00, M.D. '04, "Children as Research Subjects: Ethical and Legal Issues"; Tia Powell, M.D. '87, "Cultural Competence in Medical Ethics: Notes from Japan"; and Philip R. Reilly, J.D., M.D. '81, "Emerging Ethical Issues in Genetic Medicine."

Dilemma 3

When is extraordinary life-saving care appropriate?



A baby boy was born at full term but via an emergency Cesarean section, with a mysterious, intense skin reddening. Immediately following birth, he was put into the pediatric intensive care unit in the hospital where I work. Over the next three days, he had multiple organ failures—of the myocardium, lung and liver. On his fourth day of life he had a major seizure. Studies showed intracranial bleeding, described by the pediatric neurologist called in to see him as “the worst I’ve ever seen.”

The baby was transferred to a medical center where he received extensive evaluation and supportive care. The family decided on a “No Resuscitation, No Extraordinary Measures” order and made that clear to the doctors. No cause for the bleeding or other aspects of his condition was ever found. The outlook presented to the family by pediatricians was very grim, and he was not expected to leave the hospital.

Still in the first week of life, the boy was not swallowing well and was regurgitating so often that a Nissen operation was considered. This procedure cinches up the esophageal-gastric junction to prevent gastric reflux. The family approved the surgery, but unknown to the family, the surgeon also inserted a gastric feeding tube brought out through the upper abdomen. Given nourishment via the feeding tube, the child began to hold his own and gradually improve over a period of several weeks.

Today the child is a couple of years old and weighs around 30 pounds. He is still fed through the tube, never swallows, has no excretory control, has never rolled over, cannot sit up, receives anti-seizure medication, makes no purposeful movements other than occasional random arm waves, does not crawl, does not speak or respond to commands and basically has an IQ of zero. His medical bills have totaled nearly \$1 million so far, with the local county government bearing most of that cost. The family is responsible for the insurance copayments, incidental care and other costs amounting to more than a third of the family’s income.

A young family is blessed with a son, but burdened with that son being a clearly nonfunctioning human being. “Miracles” do occasionally happen in medicine, but there is no miracle for this unfortunate family. The question is, what should have been done and what should not have been done? “There is no legal or theological basis, in Catholicism, Judaism or the majority of Protestant faiths, for keeping alive by artificial means someone for whom there is no possibility of recovering,” says Sherwin B. Nuland, M.D. ’55, HS ’61,

At Yale, a growing focus on bioethics

A biting wind blows through the darkened Yale campus on a cold December night. The irony of the end-of-the-year gloom is not lost on the 25 members of the End-of-Life Issues working research group meeting in a seminar room at the Institution for Social and Policy Studies (ISPS). This night, four staff members from the Connecticut Hospice in Branford speak about the stresses faced by caregivers for the dying. The audience is composed of students; faculty from the medical, divinity and nursing schools, as well as faculty from other academic institutions; and local community members.

During the discussion that follows, Fred A. Flatow, M.D., a former oncologist who is now a hospice physician, notes the challenge that doctors newly arrived from traditional hospital settings frequently encounter switching from one mode of care to another. "They are always looking to treat a disease," he said. "We tell them they have to treat the patient, not the disease." The group then launched into a debate over the differing and sometimes conflicting emotional qualities and approaches to patients that caregivers need to succeed in each medical setting.

That sort of investigation into the nature and impact of

medical care and research goes on somewhere on campus almost every day. The group meeting this evening is just one of 15 different working research groups, in bioethics that hold monthly meetings on topics ranging from technology and ethics to allocation of health care. The various groups as well as publications, seminar and speaker series and visiting professors, are part of the burgeoning Interdisciplinary Bioethics Project at Yale.

Launched in the summer of 1997 by the ISPS to bring together the swelling numbers of people interested in the field, the bioethics project has drawn more than 500 participants to its programs from departments across the university, the local community and the larger world of academia and health care. "The project is fluid and that accounts for its popularity," says Carol A. Pollard, associate director of the bioethics project at the ISPS, who coordinates the project's many activities. "People come to ask why we don't do something in an area with an underlying ethical question. They can then work with us to make it happen."

Those efforts received a major boost last year when the Patrick and Catherine Weldon Donaghue Medical Research Foundation awarded the Bioethics Project a five-year, \$2.1 million grant. According to Robert J. Levine, M.D., HS '63, professor of medicine, and Divinity School Professor Margaret A. Farley, PH.D., co-chairs of the Bioethics Project, part of those funds will go toward community outreach, including a statewide network of institutional review boards, the hospital and medical center ethics watchdog committees that oversee biomedical and

behavioral research. The grant also helps to bring a prominent bioethicist-in-residence to Yale each school year. This year's visiting faculty member is David H. Smith, PH.D., a professor of religious studies at Indiana University, where he is immediate past director of the Poynter Center for the Study of Ethics and American Institutions. He is currently at work on a book on religion and the morality of care for the dying. At Yale, he is teaching popular courses to undergraduate and graduate students on bioethics and also directs the End-of-Life Issues working research group for the year.

Many of the working groups focus on policy issues and have become voices in wider public debates. "It is in the nature of biomedical ethics," says Levine, "that almost anything is potentially related to public policy."

Several of the Bioethics Project's groups have taken on a life of their own, developing their own visiting-speaker series and seeking outside support for their efforts. One of the larger groups, the Stem Cell Interest Group, was founded in May 2002 by medical student Rajesh Rao with stem cell scientist Diane S. Krause, M.D., PH.D., associate professor of laboratory medicine and pathology, as an advisor. The group has grown from 15 to 150 members

from a wide range of disciplines. It has brought speakers to Yale including leading stem cell investigators and Christopher Reeve, an advocate for more research in the field. The group now hopes to establish a multidisciplinary program, with medical and ethical research and education as components.

Most of those involved in the working groups are not formally trained as bioethicists. Interim Dean Dennis D. Spencer, M.D., HS '77, who attends meetings of various study groups, has spoken on bioethics as part of an annual guest lecture series on the field held at the Joseph Slifka Center for Jewish Life at Yale. "I am not a bioethicist per se," he says, "but as a neurosurgeon, I'm engaged in it in the trenches. Most of us consider ethics to be common sense. All you need to do is ask a resident a tough ethical question and you see that it is not just common sense. We all bring baggage and a set of beliefs that you have to get rid of in approaching these issues. You have to acquire a basis to argue your views rationally."

A member of the End-of-Life Issues group, Stanley H. Rosenbaum, M.D., professor of anesthesiology, medicine and surgery, agrees. "I spend so much energy dealing with acute medical problems. This helps me step back and consider the justice and ethical aspects of what we do."

—Marc Wortman

clinical professor of surgery and author of *How We Die: Reflections on Life's Final Chapter*. He points out that in the landmark 1976 Supreme Court case of Karen Ann Quinlan, who was in a persistent vegetative state and whose parents had sought for her to be removed from life support, her priest and the local bishop believed that she should be allowed to die. (Removed from life support, she lived on in that state until her death in 1985.)

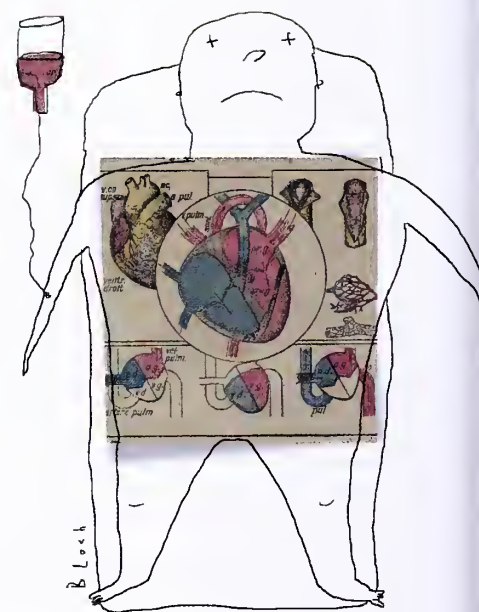
A founding member of the Yale-New Haven Hospital Bioethics Committee, Nuland notes that fear of legal ramifications often drives doctors to pursue extraordinary means to keep their patients alive, sometimes even in violation of expressed patient and family wishes. The courts have consistently supported patients, their families and physicians who choose not to have "heroic" measures taken to keep a loved one alive. "I think fears of legal repercussions are unfounded," he says. "The medical team needs to make clear the various scenarios if they do or do not intervene. Then it all gets down to the wishes of the patient or the closest kin. This was a violation of the family's hope, and of their intentions for their child."

He believes that the physicians erred at many levels. "There is no way for people of any knowledge to disagree about what this child's outcome would be. There is no possibility that the physicians did not know this." Nuland believes that, by pursuing surgical procedures, the pediatric surgeon violated several moral and ethical principles. "The only criterion for a treatment decision should be the patient's welfare." He suspects that the surgeon may have operated on the patient because the "case was a rare opportunity to improve his or her technical skills in operating on a tiny baby. He was prolonging this poor child's life by carrying out procedures that make no sense whatsoever. The physicians knew this. This seems morally and ethically reprehensible."

He believes that a physician must look at the goals of any therapy he or she undertakes. "They seem to have decided the goal was to discharge the patient from the hospital. To me the goal is what makes most sense for this family and this child." ■

Dilemma 4

Is it ethical to continue life support in brain-dead patients so others may live?



I was working in a trauma room. A patient was brought in who had been shot through the head. Although he had vital signs, he was hemorrhaging rapidly through the wound. There was wide destruction of his brain tissue; much of it had spilled out on the stretcher. My immediate reaction was, "This poor person has died." Any intervention at that point seemed futile. Then another doctor who was present ordered blood. I was shocked and asked, "Why?" The doctor replied, "Perhaps he will be an organ donor."

We aggressively resuscitated a person who was demonstrably beyond saving with large volumes of blood, ventilator support and other means on the chance that we would find a family member in time to ask if he would be a donor. Was it right to treat the patient in front of us—who was functionally dead and moments from being without vital signs—as a potential source for an organ harvest? If the two physicians agreed that the patient could clearly not be saved, it would be ethically acceptable to stop treatment, according to Mark R. Mercurio, M.D., HS '85, co-chair of the Yale-New Haven Hospital Bioethics Committee and associate clinical professor of pediatrics, who also co-directs a bioethics seminar series for pediatrics residents. "However," he adds, "that does not mean that continuing aggressive treatment with the goal of enabling possible organ donation was unethical."

According to Mercurio, there are several ways of looking at the question. The patient-centered approach is perhaps the one most widely favored by medical ethicists. It holds that in the absence of any knowledge of the patient's wishes, decisions should be guided by his or her best interest. To determine this, physicians must weigh the relative benefits and burdens imposed on the patient by a particular course of action. "Pain should always be considered as a potential burden," he says. "Also, perhaps his family will be left with a much larger financial burden, which might be viewed indirectly as a burden to him."

It may also be valid to consider the interests of others, including family members or society at large. While it may seem wrong to treat the patient just to serve someone else's interests, keeping the patient alive for a period of time while important information is gathered might be appropriate. "Some ethicists feel that we do not need to restrict the analysis to the patient," Mercurio states, "but can consider the interests of others affected by those decisions as well. Perhaps his family will draw some measure of comfort from organ

donation, and just as their cost may be perceived as his cost, their consolation may be seen as a benefit to him." Such an analysis could, he suggests, be expanded still further to incorporate potential organ recipients or even a much wider set of people. "It seems the questioner sought adherence to a patient-centered ethic, but perhaps the other physician thought it reasonable to consider the interests of others. Ultimately it is a matter of opinion, not medical fact, which approach is more appropriate."

Mercurio concludes that while the physicians may not have been ethically required to continue the treatment, "I do think it was ethically permissible for them to do so, at least until the patient's status as a possible organ donor could be clarified. If they learn that he had not chosen to be an organ donor, and the family did not choose that for him, at that point I would then recommend ceasing further efforts to maintain vital signs."

One final point: "When the correct course between two options is not clear, it seems to me the wiser choice is the one that is potentially reversible when more information becomes available," says Mercurio. "This would also favor attempts to maintain vital signs until the patient's and family's wishes regarding organ donation could be clarified." ■

What do you think?

The responses provided here by Yale faculty members address four problems that troubled readers of *Yale Medicine* because a proper course of action was not easily decided. What would you have done, faced with the same dilemmas? Send your thoughts to Letters, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to yymm@yale.edu.



Pietro de Camilli



Daniel DiMaio



Steven Hebert



Arthur Horwich



Stefan Somlo

Five faculty members honored with endowed professorships

PIETRO DE CAMILLI, M.D., FW '79, professor of cell biology, has been named the Eugene Higgins Professor of Cell Biology. De Camilli, who is also a Howard Hughes Medical Institute investigator, leads a research program exploring the molecular basis for synaptic transmission.

DANIEL C. DIMAIO, M.D., PH.D., professor of genetics, has been named the Waldemar Von Zedtwitz Professor of Genetics. DiMaio is vice chair of the genetics department and director of the Yale Cancer Center's Molecular Virology and Oncology Training Program.

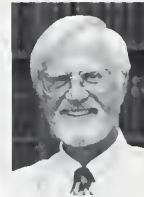
STEVEN C. HEBERT, M.D., chair and professor of cellular and molecular physiology and professor of medicine, has been named the C.N.H. Long Professor of Cellular and Molecular Physiology. Hebert studies the mechanisms and regulation of potassium, sodium and chloride transport by cells.

ARTHUR L. HORWICH, M.D., HS '78, professor of genetics and pediatrics, has been named the Eugene Higgins Professor of Cellular and Molecular Physiology. Horwich, a Howard Hughes Medical Institute investigator, studies proteins known as molecular chaperones and the mechanisms by which they assist in protein folding in the cell.

STEFAN SOMLO, M.D., FW '91, professor of medicine and genetics and chief of the Section of Nephrology, has been named the C.N.H. Long Professor of Medicine. Somlo heads a multidisciplinary research center at Yale that investigates polycystic kidney disease.



Myron Genel



James Jamieson



Keith Joiner



Becca Levy

Myron Genel, M.D., professor emeritus of pediatrics, has received the Joseph W. St. Geme Jr. Leadership Award, presented annually by the seven societies that constitute the Federation of Pediatric Organizations. The international award recognizes Genel's contributions to pediatrics and to the advancement of national health policy for children. Last year Genel was named chair of the Governing Council of the American Medical Association's Section on Medical Schools. The section, which has 600 representatives, gives U.S. medical schools a voice in the formulation of the association's policies. It has been involved in recent discussions on implementing the new clinical-skills portion of the national board exams.

James D. Jamieson, M.D., PH.D., was awarded the William Go Award by the American Pancreatic Association. The award is given to individuals who have made outstanding contributions to pancreatic studies. Jamieson, professor of cell biology and director of the M.D./PH.D. program at Yale, was honored for his leadership in national organizations, his academic achievements and his abilities as an educator.

Keith A. Joiner, M.D., M.P.H. '03, the Waldemar Von Zedtwitz Professor of Medicine, became dean of the University of Arizona College of Medicine, on March 1. At Yale Joiner was the associate chair of medicine, chief of the Section of Infectious Diseases and director of the Investigative Medicine Program. Joiner's group studied two parasites, one that causes central

nervous system infections in patients with AIDS and another that causes malaria. He joins the University of Arizona at the start of a major expansion, including a bioresearch institute and a medical research building.

Becca R. Levy, PH.D., assistant professor of gerontology, was named the 2003 recipient of the Margret M. Baltes Early Career Award in Behavioral and Social Gerontology by the Gerontological Society of America. This annual award recognizes outstanding early career contributions to the field. Levy's research focuses on psychosocial influences on aging.

Robert W. Makuch, PH.D., professor and former head of the Division of Biostatistics in the School of Public Health, was named a fellow of the American Statistical Association in June. Makuch was honored for his statistical consultations to government and the pharmaceutical industry, for his contributions to the design and analysis of clinical trials and for his administration of an academic biostatistics division.

SEND FACULTY NEWS TO
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The bigger questions in science

For a whopping 360 students, bioethics course tackles problems at “the core of our existence.”

By Cathy Shufro

When Political Science 309b — “Leading Issues in Bioethics”—met for the first time a year ago, Arthur W. Galston, PH.D., the Eaton Professor Emeritus of Botany and lecturer in political science, expected that the 125-seat Mason Laboratory would be the right size for the undergraduate course. But on Day One students were “hanging from the rafters,” said Galston. The class moved to the 250-seat auditorium in the Whitney Humanities Center, but even there, a hundred students were left standing in the aisles. The course had to move again, this time to the cavernous law school auditorium. Class size: 360 students, making Poli Sci 309b one of the largest courses offered at Yale College last spring.

Although Galston was surprised by the huge turnout, he’d known that there was “pent-up demand” for a course in bioethics, the study of the ethical consequences of advances in biology. For 12 years, he had turned away 60 students each time he’d offered a bioethics seminar that was limited to 18.

“These are human interest problems. They get to the very core of our

“Syllabus” is an occasional feature in Yale Medicine profiling courses of special interest at the School of Medicine and throughout the university.

existence,” said Galston, a member of the Institution for Social and Policy Studies. Galston assembled his course by calling in experts from every corner of campus—from the law school to the divinity school, from forestry to genetics—and including what he called “the superstars from the medical school.” They gave 26 lectures on topics ranging from the ethics of stem cell research, to the Judeo-Christian attitude toward nature, to why Jehovah’s Witnesses seek the right to deny blood transfusions to their children.

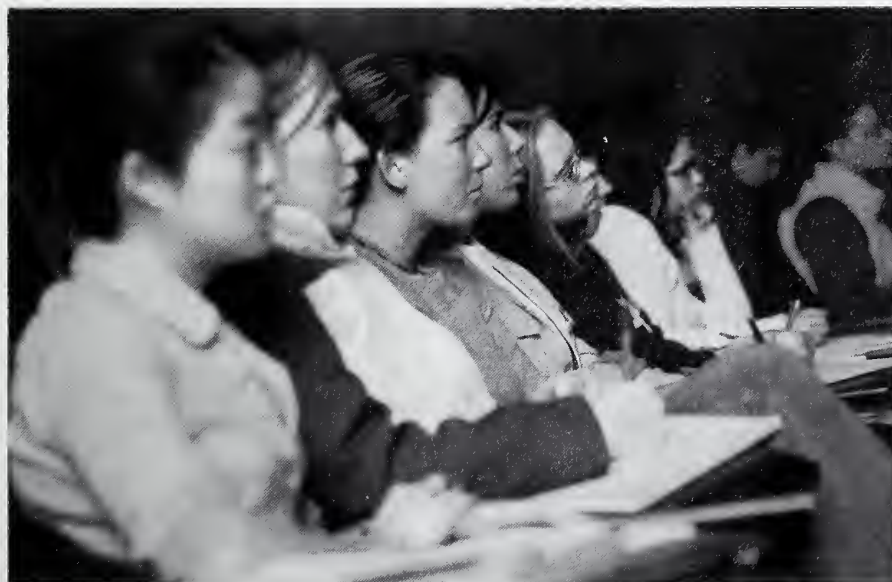
“You have some large questions,” said Galston. “Is it fair that Mickey Mantle got a liver when he ruined his liver through excessive alcohol? Does nature have intrinsic value? Does it matter if a species goes extinct?”

“The best thing about the course was all the different voices we heard,” said Robert Fisher, a divinity school student who has worked as a hospital

chaplain. Among the voices were those of Kenneth K. Kidd, PH.D., professor of genetics, who discussed ownership of the human genome sequence and whether, from a geneticist’s perspective, race exists; author Sherwin B. Nuland, M.D. ’55, HS ’61, clinical professor of surgery, talking about the end of life; and Marc I. Lorber, M.D., professor of transplant surgery, on the ethics of obtaining organs for transplantation. Other speakers discussed topics ranging from world population growth to the potential hazards of genetically modified foods.

Suzana Zorca, a Yale College senior last spring who is now attending medical school, said the course complemented her biotechnology course. “You can’t help but be in [biotech] class and think of the ethical controversies that must be raging around these issues.”

“The course attracted people of literally every conceivable major,” said



An undergraduate course in bioethics has become one of the most popular classes at Yale.

Andrew J. Read, a biology major. (The course is cross-listed as Molecular, Cellular, and Developmental Biology 130b.) Although Read said that in some courses discussion sections can be tedious, the give-and-take was lively in his bioethics section, led by genetics doctoral student Stacey Thompson. "People were very much awake, with the discussions becoming so heated that we almost didn't want to leave when the buzzer signaled the end. ... I found myself re-evaluating some of my own opinions on the subjects, with the realization that most ethical dilemmas have no clear-cut answers."

Galston's interest in bioethics dates to the mid-1960s, when a chemical



Arthur Galston led a fall course on issues in bioethics that ranged from the ethics of stem cell research to the Judeo-Christian attitude toward nature.

he'd developed to improve soybean production was combined with another and used as a defoliant in the Vietnam War. Galston was alarmed: the defoliant, the infamous Agent Orange, could cause birth defects. He and some colleagues eventually managed to convince President Richard Nixon to suspend the use of Agent Orange. "This is what catapulted me into activism and started me into bioethics," said Galston.

The course was offered again this spring, and this time Galston reserved a large auditorium.

Reading list: Poli Sci 309B/MCDB 130b

Students taking the course bought three textbooks: *Ethical Issues in Modern Medicine*, sixth edition, edited by Bonnie Steinbock, John D. Arras and Alex John London (McGraw-Hill); *Environmental Ethics: Readings in Theory and Application*, third edition, edited by Louis P. Pojman (Wadsworth); and *The Human Embryonic Stem Cell Debate: Science, Ethics, and Public Policy*, edited by Suzanne Holland, Karen Lebacqz and Laurie Zoloth (MIT Press). Students also read "The Oath of Hippocrates" and articles including "Dying Words" by Jerome E. Groopman (*The New Yorker*, Oct. 28, 2002); "Financial Compensation for Cadaver Organ Donation: Good Idea or Anathema," by A.L. Caplan, C.T. Van Buren and N.L. Tilney (*Transplantation Proceedings*, Vol. 25, No. 4, 1993); and "Psst! Sell Your Kidney?" by Nicholas D. Kristof (*The New York Times*, Nov. 12, 2002).

A week of fund-raising nets \$20,000 for the hungry and homeless

Thursday usually finds Interim Dean Dennis D. Spencer, M.D., HS '77, in the operating room. But last November 20, he was on the stage in Harkness Auditorium, trying to raise money for the 11th annual Hunger and Homelessness Auction.

"I grew up on a farm," he said. "I'm used to auctioning off cattle. We started at \$2,000."

Rather than cattle on the block that day, bidders could vie for weeklong stays at Vermont ski condos, dinners with deans, afternoon sloop sails in New Haven Harbor, or airplane rides over Connecticut.

Among the more offbeat items this year were break dance lessons by second-year student Edward Teng and a polar bear swim offered by second-year student Duncan Smith-Rohrberg, who agreed to plunge into the bidder's choice of body of water and stay in for five minutes plus another minute for each \$2 donated—to a maximum of \$20. A group of his classmates offered \$100 if he went in naked.

The auction has expanded over the years. What was once concentrated in a rowdy two hours in the auditorium now takes place over a week and includes several new events. First- and second-years hold a fund-raising football game on Harkness Lawn; there's a "hunger banquet" to introduce people to the world of the food-deprived; a party at the weekly "Club Med" gathering in Harkness Dormitory benefits the auction fund; and for three days preceding the live auction there's a silent auction in the Sterling Hall of Medicine.

This year's auction netted more than \$20,000, which will go to Loaves and Fishes, LifeHaven, Youth Continuum, New Haven Home Recovery, Community Health Care Van, Downtown Evening Soup Kitchen and St. Thomas More, the Chapel and Catholic Center at Yale.

—John Curtis

Art class gives students of medicine, anatomy another resource to draw upon

On occasional Thursday afternoons throughout the academic year's first semester, students returned after hours to the gross anatomy lab armed not with scalpels, but with brushes, paints, sketch pads and cameras. There, Mark R. Depman, M.D., a clinical instructor in medicine who works part time in the emergency room at Lawrence & Memorial Hospital in New London and spends part of each week in his Fair Haven art studio, encouraged the students to examine the human body with an artist's eye. This was not a drawing class—he offered no instruction on the fine points of charcoal or watercolors. Students could, he said, “use drawing and photography as a tool to stop and look again” at the human body.

Erin Kiehna, a second-year student, said the art class gave her a renewed appreciation for not only the body but the spirit that once occupied it. “It’s nice to sit in silence with a sketch pad in hand and really appreciate the donor,” she said. In anatomy class, she added, “You feel like you’re ransacking it, as you try to find everything.”

Depman, a member of the arts subcommittee of the Program for Humanities in Medicine, proposed the elective course last year and opened it to students at all levels of study. “I am hoping that over the coming year,” Depman said, “students will use this as an opportunity to look at the history of how we examine the body and how technology has changed the learning process.”

Although he started painting with oils and watercolors in his youth, Depman now creates images on film. (Depman’s latest work, two series of Cibachrome photographs and one of digital photographs, opened at the Nancy Hoffman Gallery in Manhattan’s Soho district in December.)

In the Thursday afternoon art class, students cluster around a cadaver or

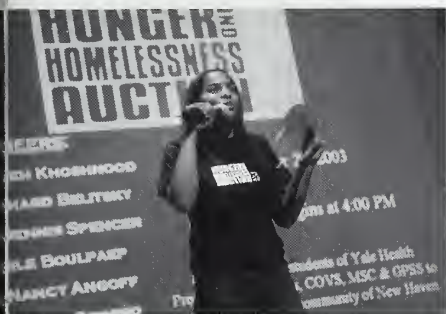
skeleton and draw with charcoals, paint with watercolors or set up cameras as they pursue an image. They come to the class with a mix of goals.

“After you’ve gone through the wards and spent time with patients you’re able to look at anatomy in a different way,” said Vernee Belcher, a fourth-year student who found the course an artistic way to become reacquainted with the human body two years after taking the gross anatomy class. Said Tina Dasgupta, in her third year of the M.D./PH.D. program, “Every patient has a story. There is something more to a patient than a chief complaint and history of present illness.” She also found the course a way to take a fresh look at the human body. “Form meets function in a fantastic way.”

Depman, a Cornell medical graduate who studied drawing at Oxford, is fine-tuning the course and, sometime in the future, may also teach technical skills. For now, though, he’s satisfied to let students pursue their own ideas.

“It is a very important message for the medical school to put out there—that this is available and it can help you mature as a health care professional and a human being who practices medicine,” he said. “There is such a danger of losing the human impetus and human contact in practicing medicine.”

—J.C.

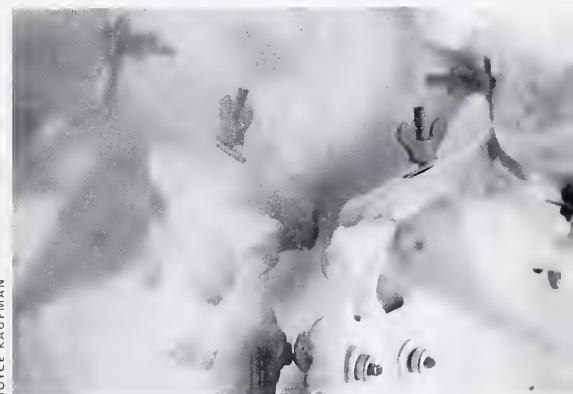


TERRY DAGRADI (2)



TOP Natasha Archer, one of the emcees from the second-year class, urged students and faculty to spend money at the Hunger and Homelessness Auction in November.

ABOVE Interim Dean Dennis Spencer enjoyed his debut as an auctioneer at the annual event.



JOYCE KAUFMAN

Joyce Kaufman, a second-year student, chose photography as her medium for the study of the skeleton.



MARTIN KLIMEK

As chief of California's Division of Chronic Disease and Injury Control, Donald Lyman has successfully campaigned to reduce tobacco use. His next target is obesity.

Speaking the language of prevention

Building on success with smoking, California's top public health official turns state's attention to obesity.

When **Donald O. Lyman**, M.D. '68, oversees a media blitz against smoking in California, he draws upon his training in medicine, his years in public health and his knowledge of the differences between Spanish dialects. In California, you have to know whom you're talking to: an anti-smoking ad in the dialect spoken in El Salvador won't go over big with Mexican-Americans. And vice versa.

Lyman picked up a sensitivity to linguistics along the way as chief of the Division of Chronic Disease and Injury Control, a post that his colleagues say is California's equivalent of surgeon general. "California has become to this nation what New York was a century ago. It's the port of entry to immigrants," says Lyman. "You drive down the street in LA with the windows open and smell the wonderful smells that change from block to block." He describes the state's 36 million residents as "a wonderful collection of well-motivated people who came here looking for a better life." Helping to provide that life is Lyman's mission as the state's highest-ranking civil service physician. Under Arnold Schwarzenegger, he's serving his fifth governor since taking the job in 1978. This year he heads a staff of 375 employees and oversees a \$200 million budget.

His agency's biggest victory has been its anti-smoking campaign, which

reduced cigarette consumption in California by 64 percent between 1988 and 2003, based on cigarette sales, according to California and federal data. (During the same period, consumption fell 36 percent nationwide, excluding California.) "It's huge," says Lyman. A 2000 analysis in *The New England Journal of Medicine* found that California's anti-smoking program resulted in 33,300 fewer deaths from heart disease between 1989 and 1997 than would otherwise have been expected.

That \$1 billion program was funded by California's Proposition 99, a 1988 law that increased the cigarette sales tax to fund the nation's largest-ever tobacco control program. Lyman claims its success cost the tobacco industry \$2.9 billion in California sales in the decade beginning in 1989, and he cheerfully reports that the industry views California as "Public Enemy Number One, with a well-funded program that works."

How did they do it? As in all public health campaigns, from promoting seat belts to discouraging teen drinking, they did it partly by changing society's "ethos." They challenged the assumption that smoking is a neutral, strictly personal choice, both "from the top down," with anti-smoking billboards and public service announcements, and also from the ground up, by approaching community groups and civic leaders. This grass-roots strategy aimed to get communities to adopt the battle against smoking as their own. The Division of Chronic Disease and Injury Control hired public health educators to visit neighborhood groups, schools, city councils and workplaces to discuss how smoking contributes to disease.

Lyman explains that although public service announcements and educational campaigns have clearly conveyed the dangers of smoking, “very few people come together and sit down and talk about smoking. ...When you actually sit down and look someone in the eye and ask, ‘What can we do about this?’ you’re likely to get a response.” Billboards and other anti-smoking ads make people receptive, but “you’ve got to engage people personally. That’s the key to the program.” That process would be called “community norm change” by liberals or “social engineering” by conservatives, “but ... it’s all the same,” says Lyman. The health educators introduce a shift in perspective by explaining how tobacco companies cynically target vulnerable preteens and young teens. “The smoker is no longer portrayed as the villain,” says Lyman. “The smoker’s the victim.”

Lyman is unperturbed by Gov. Schwarzenegger’s penchant for cigars. “I worked with him when he was our chair of the Governor’s Council on Physical Fitness and Sports, and he was consistently supportive of all the ‘health stuff’ we did,” recalls Lyman. “The other council members ribbed him about the cigars, and he was appropriately sheepish in reply.”

Young people have proven the most resistant to anti-smoking efforts, and Lyman credits tobacco industry advertising with creating “the Joe Camel generation,” in which nationally one in four 18- to 25-year-olds smokes. But the end result—which is the point for a utilitarian like Lyman—is that smoking among California adults dropped from 23 percent to 17 percent between 1985 and 2002, and the California

rates among teens are now among the lowest in the nation. Lyman’s department kept track of smoking rates using a series of surveys overseen by the University of California, San Diego.

The American Cancer Society’s California division, of which Lyman is the current president, reported that the state lung cancer rate dropped 14 percent from 1988 to 1997, based on the records of the state’s cancer registries. That compares to declines of 2 to 3 percent nationally, according to data collected by the National Cancer Institute. “To see the lung cancer rates go down is really quite amazing,” says Diane J. Fink, M.D., medical director of the California cancer society. “Don’s leadership has been paramount.”

His agency’s biggest failure? “We’ve been doing a miserable job on nutrition and physical activity,” he says. Like smoking, says Lyman, obesity, bad food choices and sloth all contribute to cancer and cardiovascular disease, which account for two-thirds of deaths and illnesses in the state. “We have an epidemic of obesity and a startling lack of physical activity,” says Lyman. Lyman said the adult obesity rate in the state (a body mass index of 30 or more indicates obesity) rose from 10.6 percent in 1991 to 18.9 percent in 2000, and type 2 diabetes in children is burgeoning.

Lyman says his agency is using the same “sandwich approach” (a low-fat sandwich, no doubt) that it used successfully against smoking: pairing a top-down media campaign with a foundation of grass-roots policy changes. In the policy realm, the mammoth Los Angeles school district voted in 2002 to ban soft drink sales to its

748,000 students by this year. Sensitive planning, like linking bicycle trails to subway lines, can make exercise more convenient. Messages to eat well derive in part from the state’s huge agriculture industry and its grocery store chains, which push produce with the catch phrase “five a day.”

As for Lyman himself, living a busy life that includes a third of his time on the road, he manages to eat “four or four and a half” of the five recommended daily servings of fruits and vegetables and to fit in an hour of combined aerobics and weight training five days per week. He and his wife, Elisabeth Blakeslee Hall Lyman (who also works in public health, as California’s assistant administrator for health services for children), both have centuries-old ties to Connecticut, including to Connecticut’s well-known Lyman Orchards. Elisabeth spent her childhood in South Hadley, Mass., down the street from the Giamattis, whose son grew up to be president of Yale. Despite Yankee roots, the Lymans and their two children consider themselves Californians.

Lyman finds inspiration by viewing his job as the promotion of social justice. He is fond of an aphorism from the *Talmud* that he remembers hearing in a speech by former Yale President A. Bartlett Giamatti: “You are not required to complete the work, but neither are you free to desist from it.”

—Cathy Shufro



BOSTON RED SOX

For another public health trailblazer, a tobacco control milestone in the Bay State

Howard K. Koh, M.D. '77, M.P.H., is another Yale medical alumnus who has won a major battle in the tobacco wars as a top state health official. When asked to name the most memorable moment in his five-and-a-half-year stint as Massachusetts commissioner of public health, Koh barely hesitates. "I'll never forget pulling down the last tobacco billboard in Massachusetts with the attorney general, Tom Reilly," Koh says. "That was a very public, concrete example of how much progress we had made."

Koh's experience as a clinician (he's board-certified in internal medicine, hematology, medical oncology and dermatology) inspired him to join Massachusetts' fledgling anti-tobacco campaign in 1992 as a volunteer for the American

Cancer Society and the Massachusetts Coalition for a Healthy Future. "I saw for myself what happens when prevention isn't addressed or is overlooked, particularly with respect to cancer," he says. During his watch as commissioner, he saw the state's aggressive efforts pay off: Massachusetts reported the fastest decline in cigarette smoking in the nation—adult cigarette consumption dropped 4 percent per year while most states saw a 1 percent annual decline. "People said the industry was too strong and the addiction was too strong, and it was impossible to make a difference," Koh says. "We showed that we could change the social norm and prevent addiction, especially for kids."

For Koh, who left his post in January 2003 to become professor and associate dean for public health practice at the Harvard School of Public Health, the victories in the tobacco wars are part of a larger legacy. "Just before I stepped down, a national report ranked Massachusetts as the third healthiest state in the country," Koh recalls. "We had risen from number 10. It was a tremendous honor to be commissioner and see that level of progress being made."

However, the events of September 11, 2001, presented Koh and other state public health officials with an unexpected and daunting set of challenges; foremost among his goals at Harvard is to prepare students to grapple with bioterrorism and other 21st-century hazards. "The essence of public health is protecting people from threats and preventing suffering," he says. "In the post-9/11 age, public health has been broadened dramatically in its scope, and we have a critical function."

Howard Koh, former commissioner of public health for Massachusetts, saw tobacco use decline dramatically in his state. He also had the chance to throw out the first pitch at a Red Sox game at Fenway. Koh now teaches public health and is an associate dean at Harvard.

Accomplishment and a dedication to public service run in Koh's family, along with strong ties to Yale. Koh's brother, Harold H. Koh, J.D., a renowned expert on human rights, was recently named dean of the law school, where his sister, Jean Koh Peters, J.D., is a clinical professor. Koh's mother, Hesung Chun Koh, PH.D., one of the world's leading East Asian scholars, retains an emeritus appointment at Yale. She and her late husband, Kwang Lim Koh, PH.D., a lawyer and democracy activist, founded in 1952 what is now known as the East Rock Institute, the oldest Korean cultural institute in the United States. (Howard and Harold Koh and their parents have been named to the K100, a list of 100 leading Koreans and Korean-Americans in the first century of Korean immigration to the United States.) Koh says his parents were an inspiration to all of their children. "Both of them viewed life in a very broad, societal way, if not a global way," he says. "When people ask where this commitment to serve came from, I tell them—it's in my blood."

For his Boston-area neighbors, though, one honor among the many listed on Koh's CV surely arouses the greatest envy. After being named a "Medical All-Star" by the Boston Red Sox for his work on melanoma, Koh, with his wife and three children standing by, threw the first pitch in a game at Fenway Park last May. "That," Koh says, "was a magical public health experience."

—Peter Farley

Roaming the world's hot spots, ensuring that care reaches those who need it

Almost two decades after completing his residency in internal medicine at Yale, **Michael V. Viola, M.D., HS '66**, was doing the kinds of things that serious-minded doctors do: treating patients, teaching students, heading the cancer center at the State University of New York at Stony Brook. But then something happened to alter his sure-footed career path.

While he was at Stony Brook in the early 1980s, a large influx of Salvadorans and Guatemalans arrived to escape homelands rocked by civil wars. "It was an extraordinarily unfortunate situation," recalls Viola, who received his medical degree from McGill in 1964. "Most of them were illegal, and they had no health care. They weren't designated as refugees escaping an oppressive government, because the United States was supporting their governments."

Viola started collecting and sending medicine to villages in El Salvador. As that effort grew, he was joined by other doctors, and a small nongovernment relief organization was born. The group crystallized into Medicine for Peace, with Viola as its founder and director. He continues to direct the group from his home in the Washington area.

Today, Medicine for Peace, an all-volunteer organization run by a five-member executive board, has about 50 affiliated physicians and nurses from around the country. During and after the first Gulf War, members of the group spent five years in Iraq, filming the destruction, teaching Iraqi physi-

cians, studying children's nutritional needs and delivering medicine. In 1993, members helped negotiate the release of American oil executive Ken Beaty, who was arrested by Iraqis after he strayed across the border from Kuwait. The group's involvement in the rescue put an end to their efforts in Iraq.

"Once that happened, the Iraqis never quite looked at us the same way again," Viola said. "We'd done a lot of work with children, so they kind of trusted us. But once we were critical of their government, and it looked like we were working with the U.S. government, things changed, and we were kicked out in 1995."

While Medicine for Peace maintains a presence in Haiti and Bosnia, its involvement in the current war in Iraq has been minimal because of the danger and restricted access. "There's not much we can do," Viola said. "We were told we need to have armed escorts at all times. We can't operate like that." The group hopes to send a team to Baghdad "to locate a large group of Iraqi children we brought to the U.S. for surgery in the 1990s. We hope they have survived all of the violence."

Unlike larger, better-known relief organizations, such as Doctors without Borders, Medicine for Peace (www.medpeace.org) won't take government funding (it relies on private donations) and will criticize U.S. policy. "We're smaller and more freewheeling," Viola said. "We tend to go to controversial places and take controversial stands." But that renegade approach has risks. Noting that by the end of 2003, 57 relief and diplomatic workers had been killed since the current Iraq war began in March 2003, Viola said, "Humanitar-

Michael Viola traveled to Iraq in the 1990s, where the organization he leads, Medicine for Peace, trained Iraqi physicians, delivered medicine and studied children's nutritional needs.



DOUG HOSTETTER

ian workers used to be protected, but the nature of war has changed. Now civilians are targeted. If belligerents kill civilians, they certainly don't mind killing relief workers." In August a bomb at United Nations headquarters in Baghdad killed 17 people.

Still, despite the danger, Viola, who runs the U.S. Department of Energy's Medical Sciences Division, spends as much time as possible working for Medicine for Peace. "I'm not saying you get an enormous reward. There's nothing rewarding about mass graves or large numbers of children dying of starvation, but you realize you're having an impact in some small way."

—Jennifer Kaylin

Familiar Faces

Do you have a colleague who is making a difference in medicine or public health or has followed an unusual path since leaving Yale? We'd like to hear about alumni of the School of Medicine, School of Public Health, Physician Associate Program and the medical school's doctoral, fellowship and residency programs. Drop us a line at ymm@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.



John Baxter



Shelley Taylor



Robert Frelick and Jane Frelick



Eva Henriksen



Robert Higgins



Liselotte Pieroth-Vinals and Antonio Vinals

Three Yale alumni elected to Institute of Medicine

Three Yale alumni were among 65 new members elected to the Institute of Medicine in October.

They are **JOHN D. BAXTER**, M.D. '66, professor of medicine in the Department of Medicine and Diabetes Center, University of California, San Francisco; **DOUGLAS R. LOWY**, M.D., HS '75, chief of the Laboratory of Cellular Oncology and deputy director of the division of basic sciences and Center for Cancer Research, at the National Cancer Institute; and **SHELLEY E. TAYLOR**, PH.D. '72, professor of psychology at the University of California, Los Angeles.

Baxter uses the tools of structural and molecular biology to determine the workings of nuclear receptors in health and disease and to design ligands with selective actions on nuclear receptors. Lowy studies the molecular biology of tumor viruses, oncogenes and tumor genes. Taylor's research explores the interaction of biology and behavior as they affect mental and physical health.

1940s

Robert W. Frelick, M.D. '44, of Wilmington, Del., liaison to the National Cancer Advisory Board for the Association of Community Cancer Centers, received the Christiana Care Health System's annual commendation for excellence in October. The award recognizes a current or former member of the medical-dental staff of Christiana, Delaware's largest health care provider, for outstanding clinical care and compassion and for distinguished achievement in education,

research, community service or leadership. Frelick, a medical oncologist since the specialty's earliest days, was honored for more than five decades of service and leadership. Frelick and his wife, Jane, met while he was in medical school and she was a nursing student at Yale.

Robert H. Furman, M.D. '43, FW '45, writes to say: "We're enjoying retirement at La Posada, a continuing care retirement community in Green Valley, Ariz." Furman attends a medical journal club and weekly grand rounds at the University of Arizona School of Medicine. He also participates in a weekly lecture series called "The Forum at La Posada."

Roslyn L. MacNish, M.P.H. '41, of Wethersfield, Conn., is retired and enjoying photography and attending camera clubs and councils. During her career MacNish was a statistician in public health at the Hartford Hospital Tumor Clinic and for the state of Connecticut's tuberculosis control program.

1950s

Eva Henriksen, M.D. '54, writes to say that "in Los Angeles, I quilt, visit with daughter Liz and granddaughters Ryann, 8, and Addison, 5, and e-mail daughter Mary, who with husband Reggis has been in South Africa, Thailand and Australia as part of an around-the-world tour. I do anesthesia consultations on operating room-related deaths for the LA coroner's office."

1960s

Robert L. Johnson, M.D., HS '64, clinical professor of otolaryngol-

ogy at the University of California, San Francisco, for more than 30 years, writes to say that "almost 40 years have passed since I was an otolaryngology resident at Yale. Married for 42 years to Barbara, a staff pediatric nurse, with three adult children all living in the Bay area. My younger daughter recently received her doctorate in psychology. My wife and I returned from Thailand, Bhutan and Laos, where I gave lectures on sinusitis."

1970s

Ian B. Berger, M.D., M.P.H. '74, is president of Houston-based InFOCUS, a nonprofit organization promoting eye care for all, and director of the InFOCUS Center for Primary Eye Care Development, whose domestic programs in poor and rural areas provide eye care for migrant farm workers, Native Americans and other populations in need. InFOCUS has promoted a new paradigm, the Vision Station, to deliver primary eye care. Berger, with colleague Larry Spitzberg, PH.D., O.D., has also created the Focometer, a hand-held refracting instrument that measures visual errors and determines prescriptions. It was designed for use in remote or poor areas and is used in 40 countries.

1980s

Robert S.D. Higgins, M.D. '85, the Mary and John Bent Chair of Cardiovascular-Thoracic Surgery at Rush-Presbyterian-St. Luke's Medical Center, was honored as a leader in public health and medicine by the Gift of Hope Organ & Tissue Donor Network and its African American Task Force at a ceremony in Chicago

in November. Higgins was honored for establishing a standard of excellence, improving the health of communities and supporting efforts to save and improve lives through organ and tissue donation.

Marie (Ciacco) Tsivitis, M.P.H. '86, staff associate at the Long Island State Veterans Home in Stony Brook, N.Y., is teaching a new course titled "Issues in Public Health" at Stony Brook University as an adjunct staff associate in infection control. Tsivitis also writes that she and her husband have two children, Alexandra, 8, and Christopher, 4.

1990s

Antonio F. Vinals, M.D. '93, writes to say that he and his wife, Liselotte Pieroth-Vinals, M.D., are enjoying living in Manhattan. Vinals is an ophthalmologist at the Manhattan Eye, Ear and Throat Hospital. He and Pieroth met at Yale in 1992. She was a visiting international medical student and intern at Yale and completed her ophthalmology training at Columbia University and a fellowship in oculoplastic surgery at the New York Eye and Ear Infirmary, where she is now on the staff. They are the proud parents of Matilde Beatrix, who was born at Columbia-Presbyterian Hospital on December 12 and weighed seven pounds.

SEND ALUMNI NEWS TO Claire M. Bessinger, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to claire.bessinger@yale.edu

VISIT US ON THE WEB info.med.yale.edu/yymm

Robert L. Arnstein, M.D., of Hamden, Conn., whose career as a psychiatrist at Yale spanned almost 40 years, died on October 27 at the age of 84. For three decades, Arnstein was the chief psychiatrist at Yale University Health Services. Under his guidance, Yale became a national model for campus mental health programs. In 1971 he became a clinical professor of psychiatry at the School of Medicine. He retired in 1989.

Robert F. Bradley, M.D. '43, former medical director and president of Joslin Diabetes Center in Boston, died on October 12. He was 83. As president of Joslin from 1977 to 1987, he oversaw the center's expansion and championed the use of oral agents for treating type 2 diabetes. A 1941 Yale College graduate, Bradley served in the Navy after graduating from the School of Medicine and trained at the Lahey Clinic, New England Deaconess Hospital and Joslin Clinic. He served as editor of *Joslin's Diabetes Mellitus* and as an expert witness in the Claus von Bulow murder retrial in 1985.

Mary E. Ellis, M.P.H. '48, of Decatur, Ga., died on September 27 at the age of 81. Ellis was a teacher at the McLendon Elementary School in DeKalb County, Georgia, for more than 20 years. She taught church school for more than 50 years and wrote a Christian education curriculum for the Presbyterian Church.

Knox H. Finley, M.D. '30, of San Francisco, died on September 15 at the age of 99. After graduation from medical school Finley completed a fellowship in neurology at the Kaiser Wilhelm

Institute in Germany and was subsequently board-certified in neurology and psychiatry. He practiced medicine for 45 years at the California Pacific Medical Center in San Francisco.

Julian Frieden, M.D. '48, of White Plains, N.Y., a cardiologist associated with Montefiore and New Rochelle hospitals, died on September 29 of Parkinson's disease. He was 78. Frieden published pioneering articles on peritoneal dialysis, the measurement of intracardiac pressure, the use of lidocaine to stabilize heart rhythm and the role of salt in hypertension.

Nancy G. Hildreth, M.P.H. '78, M.P.H.L. '79, PH.D. '81, of Rochester, N.Y., died on September 30 after an eight-year battle with amyloidosis. She was 54. Hildreth was an assistant professor of epidemiology at the University of Rochester.

Barry M. Kacinski, M.D. '80, PH.D. '81, Hs '83, a professor in the departments of therapeutic radiology, dermatology, and obstetrics and gynecology, died on November 20 following a heart attack. He was 50. Kacinski led groundbreaking research to define the effects of growth factors and oncogenes in the development of malignancies. He had an international reputation for his contributions to the field of DNA repair and to the understanding of dermatologic and gynecologic malignancies.

Lawrence K. Pickett Sr., M.D. '44, of Ithaca, N.Y., died on November 15 at the age of 84. Pickett was the first pediatric surgeon in the Syracuse area, where he practiced from 1950 to 1964. In 1964

he came to Yale-New Haven Hospital to establish a pediatric surgical department. At Yale he was named the William H. Carmalt Professor of Clinical Surgery and Pediatrics. He also served as associate dean of clinical affairs and chief of staff of the hospital. He retired in 1983.

Fredrick C. Redlich, M.D., former dean of the School of Medicine and a founding figure in the field of social psychiatry, died on January 1 of congestive heart failure. He was 93.

Redlich, who was born in Vienna, came to Yale in 1942 for the start of a career that lasted more than 30 years. He served 17 years as chair of the Department of Psychiatry and five years as dean of the medical school. While chair of psychiatry he was credited with transforming a foundering department into one that promoted psychiatry based on a mix of basic research, clinical work and behavioral science. As one of the earliest practitioners of social psychiatry, he studied links between mental illness and social milieu. He was co-author of nearly 100 scientific papers and six books, including one he called a "pathography" of Hitler's mental state.

Robert H. Stevens, M.D. '36, died on November 30 at Yale-New Haven Hospital. He was 96. During World War II Stevens served in the Army, in France and Germany, as a neurosurgeon. He practiced neurosurgery in Utica, N.Y., for 50 years.

Max Taffel, M.D. '31, of Barre, Vt., died on September 19 at Yale-New Haven Hospital. He was 94. Taffel, a neurosurgeon, was on the Yale-New Haven Hospital

staff for 46 years. During the Iwo Jima and Okinawa campaigns in World War II he was the only neurosurgeon on the island of Saipan, where he earned a Bronze Star Medal. His goals were to be "an honest surgeon and devoted father, to instill the love of learning into the hearts and minds of young people ... and to do harm to no one."

Joseph B. Warshaw, M.D., former deputy dean for clinical affairs and chair of pediatrics at the School of Medicine, died on December 29 from multiple myeloma. Warshaw was 67 and "an expert on fetal growth and neonatal medical care who advanced the understanding of the way organs mature in normal and diabetic pregnancies," according to his obituary in *The New York Times*. For the past three years Warshaw had served as dean of the University of Vermont College of Medicine. Among his accomplishments there was the launching of an M.D./PH.D. program. Warshaw was honored last March at the School of Medicine at the second "Joseph B. Warshaw Symposium on Developmental Biology."

SEND OBITUARY NOTICES TO
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Running for governor, again

Throughout his eight years as governor of Puerto Rico, Pedro J. Rosselló, M.D. '70, M.P.H., concerned himself with two main issues—universal health care and statehood for the island. He succeeded in one with a reform that brought health insurance to all, yet victory narrowly eluded him in the other. In two non-binding plebiscites, voters expressed a preference for commonwealth status.

In 2000, at the end of his tenure, Rosselló chose not to seek a third term. Instead he went to Washington to teach public health at George Washington University and analyze disenfranchisement and universal health care at the Woodrow Wilson International Center for Scholars. Early in 2003 Rosselló announced his return to politics, and in November he won the pro-statehood New Progressive Party's primary with 76 percent of the vote. This fall he will face two candidates in the governor's race.

Rosselló, who trained and practiced as a pediatric surgeon after earning his Yale medical degree, comes to his third race with a mixed legacy. In his previous terms he replaced state-run hospitals and clinics with an insurance program that increased access to health care for the poor ["A New Prescription for Puerto Rico," Winter 1999]. His health care reform had its critics—including physicians who found the capitated payments too low. Nevertheless, by 2001 more than 1.8 million of an estimated 2.1 million potential clients were enrolled in the ongoing program.

Despite his vigorous campaigns for statehood—which he believes will spur trade and investments on the island—Puerto Ricans have voted to maintain commonwealth status. And allegations of corruption in his administration have dogged him since he left the governor's office.

Rosselló has not been implicated in any wrongdoing, but his former education secretary and the president of the island's Chamber of Commerce were arrested in an investigation of a kickback scheme. Another executive was convicted of extorting payoffs from contractors who wanted access to cabinet members. "I know I acted in good faith at all times, not only legally, but ethically and morally," Rosselló said in a radio interview before the primary. He has pledged to crack down on corruption, if elected. He has also vowed to seek another referendum on the question of statehood.

—John Curtis



OCTOBER 1953

Alumni Bulletin

"General plans for the construction of the new Edward S. Harkness Memorial Residence Hall, generous gift of the Commonwealth Fund, have been completed as the result of several meetings of the Building Committee with the architects, Douglas Orr of New Haven and Guglar, Kimball & Husted of New York. ... It is hoped that ground can be broken early in 1954 and that the new quarters for Yale medical students can be finished and equipped for occupancy in September 1955. ...

"One wing, of eleven stories and ground floor, will provide 219 single rooms for male students, as well as ten suites for students or graduate advisors. The other wing, four stories high, will contain thirty-five small apartments. The latter will be occupied by pairs of single women students and by a few married medical students and their wives. The single rooms will include lavatories and built-in closets. Shower rooms will be provided on each floor. The apartments will consist of a living room, bedroom, bath, and kitchenette unit. The apartment wing will have its own entrance and will also communicate with the main lounge. Each wing will have its own automatic elevators. Other living quarters will include a large apartment for a resident manager and his family and a living room-bedroom-bath combination for the accommodation of visiting lecturers and other guests of the school. ...

"Comfort and convenience have been emphasized. ... The completion of the new residence hall should increase significantly the efficiency and well being of the able group of young men and women studying at the School of Medicine."



FALL/WINTER 1983

Yale Medicine

"The John B. Pierce Foundation Laboratory celebrated its 50th anniversary on November 4th, and paid tribute to Dr. A. Pharo Gagge, fellow emeritus. Dr. Gagge has been a member of the Laboratory's scientific staff since it was founded in 1933 to conduct research and educational programs 'for the increase of knowledge to the end that the general hygiene and comfort of human beings and their habitations may be advanced.'

"Dr. C.E.-A. Winslow was appointed the first director of the Laboratory while he was chairman of the Yale Department of Public Health, and he retained both offices until his retirement in 1945. Under his leadership, and that of subsequent directors, the Laboratory has gained worldwide recognition for its many significant contributions to the field of environmental physiology. In recent years of energy shortages and increasing pollution production, their work has assumed added importance as governments seek a balance between energy conservation and a healthful environment.

"The close relationship between the Pierce Laboratory and the Department of Epidemiology and Public Health has continued. ..."

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spring 2004

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summer 2004

Robert Alpern is
named 16th dean

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Mapping the social mind

The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists.

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SUMMER 2004

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ON THE COVER AND THESE PAGES

Three-year-old Hailey Lyle (cover) was diagnosed with autism at 15 months. Because her older brother, Brendan (this page), had been diagnosed with the disorder a year earlier, Hailey's parents were on the lookout for symptoms. "At a year, we thought we were out of the woods with her," says her mother, Pamela Lyle, "but very shortly after that she started to lose language and spiral down socially." Lyle and her husband, Christopher, began to intervene with guidance from the Yale Child Study Center. "We went in with full force and tried to spend as much time as possible with her," says Pamela Lyle. "It's slow going, but she's definitely improved."

Photographs by Daphne Geismar

18 Mapping the social mind

The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists. Their hope is that early intervention will help autistic children develop social ability and a better sense of their place in the world.

By Peter Farley

26 Life on wheels

Filmmaker and physician Gretchen Berland gave cameras to three disabled people and asked them to shoot their everyday lives.

Rolling, the documentary that resulted, shows us what the world looks like from the seat of a wheelchair.

By Cathy Shufro

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On the Web

yalemedicine.yale.edu

On our website, readers can submit class notes or a change of address, check the alumni events calendar, arrange for a lifelong Yale e-mail alias through the virtual Yale Station and search our electronic archive.

Ethical decisions are not always unanimous

As a former Yale house officer trained at Yale nearly 50 years ago, I want to congratulate the bioethics program described in the Spring 2004 edition of *Yale Medicine* ["Two Alternatives, Each a Little Wrong"].

In the case concerning the schizophrenic young man whose mother secretly medicated him, I agree with the attending physician. Although society does not surreptitiously medicate chronic street schizophrenics, in this case a dedicated caregiver (his mother) was available and, on balance, the medication given without the patient's permission probably contributed to his improvement. Unlike the bioethicist, I would have been willing to cooperate with the mother's wishes in this treatment of a very major medical disease.

I agree with the bioethicists in the other three cases.

Many thanks for this interesting discussion.

*Donald P. Feeney, M.D., HS '57
Rockford, Ill.*

I agree with Dr. Zonana that the physician should not have colluded with the mother who secretly placed medication in the psychotic son's food, even though the result was marked improvement in the son's condition. It is also worth asking whether there might have been an advance directive in this case, in which the son, at a time when he was competent, expressed a preference for treatment. Is it possible that he had spoken in the past about the benefits of medication? Might he have even suggested that his mother hide his medicine in his food if he again became psychotic? While these are unlikely possibilities, they highlight the importance of considering the wishes an incompetent patient may have expressed when he was not psychotic. If the son had expressed a preference for medication, the ethical balance between honesty and patient autonomy on the one hand and clinical out-

come on the other would have tilted toward treatment. In the legal realm, some jurisdictions are now recognizing health care proxies for psychiatric treatment.

*Burns Woodward, M.D. '71
Waban, Mass.*

Max Taffel, a surgeon, not a neurosurgeon

I was sad to read of the death of Max Taffel [*In memoriam*, Spring 2004].

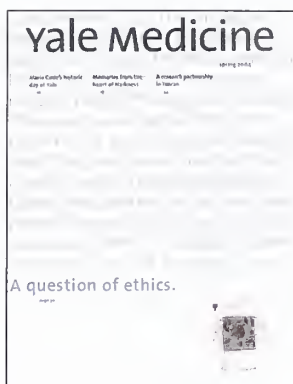
You reported that Dr. Taffel was a neurosurgeon. I believe you will find that he was a general surgeon.

Max Taffel was the most memorable of the excellent teachers I was fortunate enough to be exposed to at Yale Medical School from 1955 to 1959. He rarely missed medical grand rounds (despite the fact he was a surgeon) and he usually had something to say that was worth listening to and that demonstrated the great depth and breadth of his knowledge.

During World War II, he might well have been, as you reported, "the only neurosurgeon on ... Saipan," as a general surgeon. In my 31-year career as a military general surgeon, I did some neurosurgical cases myself (emergency head surgery for trauma) when the situation demanded it. But I think you will find that, at least when I knew him and scrubbed with him (while acting as a substitute surgical intern at Grace-New Haven Hospital), Dr. Max Taffel was a general surgeon.

*Martin L. Fackler, M.D. '59
Gainesville, Fla.*

Dr. Fackler is correct. Max Taffel was a general surgeon who had received training in thoracic and neurological surgery.



HOW TO REACH US

Yale Medicine welcomes news and commentary. Please send letters to the editor (250 words or less) and news items to *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via electronic mail to yymm@yale.edu, and include a daytime telephone number. Submissions may be edited for length, style and content.

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Seeing with new eyes

There was a moment, probably sometime in the mid-1980s, when my awareness of the politics of disability eclipsed my awareness of what it means to be disabled. The latter was never that developed, since I grew up without disability and had no close friends or relations who were disabled. But although my knowledge was second- or third-hand, I wasn't indifferent. Like many others, I had been raised to appreciate the hardships and rights of disabled people, whom we knew then as "handicapped." (The H-word had not yet been retired as politically incorrect.)

At a certain point though, I now realize, I must have lost a measure of empathy. This could have been the result of my own self-absorption or a reaction to the stridency of a particularly militant point of view I encountered somewhere; I don't recall. All I know is that somewhere between my first job and third child, a thought nested in my consciousness that said, "Sure that's hard, but life is tough all over."

Gretchen Berland's film *Rolling* changed all this.

Rolling, the subject of Cathy Shufro's article ("Life on Wheels," page 26), is powerful in the simplicity of its basic premise: Berland equipped three disabled people in Los Angeles with digital video cameras and asked them to record the events of their daily lives. The intimate, 70-minute film that resulted shows what it is like to depend on a wheelchair, and does so in a way that an objective, third-person documentary likely could not have. For me, the realization that life just *isn't* as hard for most of us came when one of the three protagonists, Vicki Elman, was obliged to roll herself off the sidewalk and into city traffic in order to get around a carelessly placed newspaper box. The obstacle would have been insignificant to another pedestrian, but Elman's solution put her life at risk. My new attitude was reinforced later in the film when Elman, who has multiple sclerosis, was stranded outside her home, alone as the sun went down, hours after a van driver, citing company rules, had refused to wheel her inside.

Rolling changed how I feel, but this was not the director's first goal. Berland, an assistant professor of medicine at Yale who began the project as a Robert Wood Johnson Clinical Scholar at UCLA, says her initial purpose in making the film was to explore a rather unconventional research tool—the documentary film—and to produce new knowledge about disability in the process. "You can use the visual medium to explore aspects of a patient's experience

that we might not otherwise be able to capture using any other kind of data collection tool," says Berland, who was a producer for *NOVA* and *NewsHour* before studying medicine. Her colleague Harlan Krumholz, M.D., calls the film a much-needed complement to huge analytical studies of clinical data that reveal patterns on a large scale but contribute little to doctors' understanding of "the tapestry of what makes up [patients'] lives."

If you get the chance to see *Rolling*, jump on it. Two short clips may be viewed on our website, yalemedicine.yale.edu, and the film is being screened at festivals. In an era when politics have become increasingly polarized and we risk categorizing people as either "us" or "them," *Rolling* reminds us in a straightforward and honest way of the common ground we all share as human beings. "There but for the grace ..."

Michael Fitzsousa

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SECOND OPINION BY SIDNEY HARRIS



"IT'S JUST A MILD HYPERINSULINISM DUE TO ISLET CELL HYPERPLASIA WITH A TOUCH OF HEPATIC INSUFFICIENCY AND GLYCOGEN DEPLETION. IN OTHER WORDS, WATCH YOUR DIET."



With President Richard Levin at his side, Robert Alpern, left, the 16th dean of the medical school, greeted faculty in the Historical Library in April. Alpern, who served as dean of the University of Texas Southwestern Medical School, started at Yale on June 1.

A down-to-earth leader who gets things done

Texas dean Robert Alpern, a distinguished nephrologist, takes the reins at Yale.

When Donald W. Seldin, M.D. '43D, HS '46, was recruiting a chief nephrologist to the University of Texas (UT) Southwestern Medical Center in 1987, one of the names on his list was Robert J. Alpern, M.D., a junior faculty member at the University of California, San Francisco (UCSF) and a rising star in the field of kidney research. "He had just barely finished his own training," recalled Seldin, a Yale alumnus who served as Southwestern's chair of medicine for 38 years and helped build the Dallas school into an academic powerhouse. "In surveying the country, I thought he was one of two people who had what I was looking for, despite his young age."

A dozen years later, Alpern was named dean of UT Southwestern's medical school, and in late April of this year he was introduced to Yale faculty members as the School of Medicine's 16th dean. He began work a month later, on June 1.

Alpern's reputation as an affable colleague and a leader who gets things done preceded him. "Bob is an extraordinary catch for us," Yale President Richard C. Levin told the faculty gathering on April 30, "He is a person who not only has a record of accomplishment [as a dean and section chief], but also one who has all the human qualities that make an outstanding leader. He is a highly accomplished scientist, a fabulous

teacher ... and a person who inspires confidence and has the support of virtually everyone with whom he works."

A native of Brooklyn, N.Y., who grew up on Long Island, Alpern attended Northwestern University and the University of Chicago's medical school before training in internal medicine at Columbia and nephrology at UCSF. At UCSF he was a solidly well-rounded academician, excelling as a teacher and clinician and launching a research career focused on the underlying mechanisms of acid-base balance in the kidney. He traces his interest in medicine to an early love of science and a desire to help others and fondly recalls the month he spent at Yale as a visiting fourth-year medical student in 1975.

It was in the lab that he met his wife and research collaborator, Patricia A. Preisig, PH.D. They began working together when he was a postdoctoral fellow and she was a graduate student in the lab of Floyd C. Rector Jr., M.D., at UCSF; since then they have focused their studies on better understanding the role of the kidney's proximal tubule in acid-base regulation. Their work has shown how two molecules, the Na/H antiporter known as NHE3 and the citrate transporter NaDC-1, mediate the kidney's ability to excrete acid and defend against a metabolic acidosis.

Preisig will be moving her lab to New Haven as a faculty member in the Department of Internal Medicine in 2005; for the coming academic year, she will remain in Dallas, where their daughter, Rachele, will be a high school senior. Their son, Kyle, is starting ninth grade.

Gerhard H. Giebisch, M.D., remembers meeting Alpern in the early 1980s

when Alpern interviewed at Yale to spend time in the Giebisch lab. They have remained friends and colleagues ever since. According to Giebisch, Alpern has become a world leader in the field of acid-base regulation in the kidney. "His work has really been fundamental and pushed the field forward," said Giebisch, Sterling Professor of Cellular and Molecular Physiology, citing Alpern's development of sophisticated fluorescence techniques for measuring acid inside living kidney cells, which previously had not been possible. Alpern also worked out key details that explain how nephrons compensate to handle an increased acid load, as might occur during kidney failure.

Search committee members said they were impressed by Alpern when he visited New Haven in February and March. "He listened effectively, he was thoughtful and he was down-to-earth," said committee member David L. Coleman, M.D., HS '80, the interim chair of medicine. (According to Seldin, Alpern was successful in Dallas because he cared a great deal about quality and is "thoughtful, composed and balanced.") In checking Alpern's references, "one of the striking things about him was that there wasn't a single call that wasn't positive," another search committee member said. "The consensus was that he is absolutely fabulous. He comes across as youthful, energetic and very, very bright." And despite his easygoing personality, he apparently has the ability to make tough decisions. "The story we heard more than once is that you go into his office to make a request, he says no—and you feel good about it. That's a rare talent."

Alpern said he is coming to Yale with major goals that he began formulating during the interview and negotiation process. "I sensed that at every level, from President Levin and Provost [Susan] Hockfield all the way down, everyone wants to make Yale School of Medicine better." He said he asked Levin for significant resources to do just that and that "we were in total

agreement on the vision for the school" regarding programs, space and faculty. "Without going into details," he said, "the university was generous in its support." Levin confirmed this when he introduced Alpern in April, noting that the economics of medical schools "are not what they were 20 years ago."

"Medical margins are tight, recoveries on grants are not fully compensatory, and we recognize that until the school develops the kind of philanthropic base that it must develop over the coming years," Levin said, "the university is going to have to step in and provide the resources that will stop it from treading water."

Alpern said his vision for the school is "to have outstanding programs in education, research and clinical care. These programs should be as good as they can be, among the best in the world. Yale already has many outstanding programs in these three arenas that are likely among the best, but no medical school is perfect in all aspects. We will identify our priorities for program improvement and then move forward."

As Alpern prepared to move to New Haven, UT Southwestern named an acting dean to see it through its coming search process for a new leader. For this post, UT chose a Yale alumnus, pharmacologist Alfred G. Gilman, M.D., Ph.D., a winner of the 1994 Nobel Prize in physiology or medicine for the discovery of G-proteins.

Levin praised neurosurgery Chair Dennis D. Spencer, M.D., HS '77, who served as interim dean for the past year, for "an absolutely spectacular job" shepherding the school and building bridges among its diverse constituencies. "He brought this faculty together in a way it hadn't been for some time and worked very hard to collaborate, not only within the medical school but also with the university and hospital, in ways that were welcomed by all of us."

—Michael Fitzsousa

For doctors, scientists, workshop series is an initiative in translation

Catalin S. Buhimschi, M.D., is just starting out on his research career studying high-risk pregnancies in the obstetrics, gynecology and reproductive sciences department. Cardiologist Albert J. Sinusas, M.D., an associate professor in the departments of medicine and diagnostic radiology, investigates diseases that typically occur at the other end of life. He looks for ways to image and model the beating heart, especially after an infarction, to improve diagnosis and treatment. Under normal circumstances, their paths might never cross, but they discovered they had much to talk about when they finally met.

The meeting of the two investigators was just one of the unlikely, and potentially productive, encounters among faculty who attended the Dean's Workshop on May 7 in the Anlyan Center Auditorium. The meeting was the first in a series of events designed to bring together basic scientists, clinical researchers and clinicians from across the School of Medicine to explore ways to move basic science advances more swiftly to patient care. The workshops are part of a larger initiative launched last academic year by Interim Dean Dennis D. Spencer, M.D., HS '77, who told the overflow audience, "This is an attempt to further focus our efforts on why we are here: patients and patients' health."

As part of that initiative, Spencer also announced a commitment by the School of Medicine of up to \$1 million in funding for pilot projects that bring basic and clinical scientists from different departments together. The two-year grants will provide up to \$150,000 with the aim of generating data that will attract additional outside funding. Said Spencer, "I visualize a research continuum where human investigators and basic researchers will focus together on a single problem."

The translational research program comes partly in response to the Roadmap initiative announced by the National Institutes of Health (NIH) last September. NIH Director Elias A. Zerhouni, M.D., had identified major opportunities and gaps in biomedical research that no single institute at NIH could tackle alone, but that the agency as a whole could address to make the biggest impact. The Roadmap also established new funding for research across institutes.

The first Dean's Workshop focused on Yale's magnetic resonance imaging core research facility and some of its applications for structural and functional studies. Three faculty members from the Magnetic Resonance Research Center, James S. Duncan, PH.D., R. Todd Constable, PH.D., and Douglas L. Rothman, PH.D., spoke about their efforts to develop new contrast mechanisms and algorithms to improve both imaging methods and understanding of the results. Much of that work results from helping basic and clinical investigators carry out their research. "We all work in a collaborative matrix," Duncan said.

Three clinical researchers—Sinusas, neuroscientist Marcia K. Johnson, PH.D., and diabetes investigator Gerald I. Shulman, M.D., PH.D., gave overviews of their studies using imaging technologies. Sinusas said findings from his 15-year effort with Duncan to model and analyze the changing shape and structure of the beating heart may help predict heart wall damage and patient prognosis following an infarct.

After the workshop, Buhimschi, an instructor in obstetrics and gynecology, spoke with Sinusas about his efforts to model the changing uterus. "I was aware of Yale's interest in new imaging techniques, but I wasn't aware of Dr. Sinusas' work," he explained later. "I hope to identify ways to pursue our idea, maybe even together with him. Ultimately, I will apply for a grant."

—Marc Wortman

An author and physician helps residents become better doctors through writing

Physicians who listen to their patients' stories—who listen as writers would—strengthen their relationships with those patients, according to physician and author Abraham Verghese, M.D., M.F.A. And doctors who forge these connections to their patients are likely to take better emotional care of themselves as well, said Verghese, speaking recently at medical grand rounds.

"To be aware of stories is to be empathetic. ... What we're talking about is imagining the patient's life," said Verghese, director of the Center for Medical Humanities and Ethics at the University of Texas Health Science Center at San Antonio. Verghese wrote *My Own Country: A Doctor's Story*, a memoir of caring for AIDS patients in Tennessee in the early days of the epidemic, which *Time* magazine called one of the five best books of 1994.

Verghese's talk, "What the Pen Teaches the Stethoscope," was linked to a writer's workshop for residents

that he'd run last fall. The workshop was part of efforts by the Department of Internal Medicine to strengthen the doctor-patient relationship, said Asghar Rastegar, M.D., the department's associate chair for medical education and academic affairs.

"Our goal is to provide a counterweight to the increasing use of medical technology, which requires less direct contact between physician and patient," said Rastegar, who developed the writing program in partnership with former Chair Ralph I. Horwitz, M.D. (Surgeon and medical writer Atul Gawande, M.D., M.P.H., this year's Commencement speaker, spent time with the residents in May.)

Fourteen medical residents, chosen on the basis of writing samples, spent two and a half days with Verghese critiquing one another's work. In teaching the residents, Verghese used techniques he'd learned at the Iowa Writers' Workshop at the University of Iowa in 1990-91. The residents compiled their stories about patients, both fictional and real, in a booklet called *Capsules*. They read from their work when Verghese returned in January as part of the program financed by a fund in memory of Fredrick L. Sachs, M.D.

Workshop participant Amy M. Nuernberg, M.D. '00, chief resident in medicine, said she experienced a catharsis while writing about a college student in her care who had died in a matter of weeks. "It made

EPH RECEIVES GRANT FOR MAPPING LYME DISEASE RISK

Durland Fish, PH.D., professor of epidemiology, has received a \$2.9 million, four-year grant from the Centers for Disease Control and Prevention to map the risk of Lyme disease infection in the eastern United States. Fish and his colleagues will focus on the prevalence and genetics of Lyme disease bacteria carried by ticks in the largest field study of tick-borne diseases conducted in the United States. Satellite imagery and geographic information systems will be applied to the project.

—John Curtis



me realize how strongly it had affected me," said Nuernberg. "She wasn't just another patient. ... It helped me sort out on paper all these conflicted emotions."

In his talk, Verghese described what he'd recommended to the residents: that they try to delineate in their patients' predicaments elements of drama—danger, desire and a crucial insight, or epiphany. For patients, a simple doctor's visit can contain all these elements, said Verghese: "When they come to see you, your patient is engaged in a story. ... There is danger lurking. There is danger and a great desire to walk away with a clean bill of health and a blessing to go on." Good news or bad, the diagnosis can be a kind of epiphany.

Verghese acknowledged that it's easy to reduce patients to labels: a ROMI becomes a MIRO who may nonetheless need a CABG (that is to say: a "rule out myocardial infarction" becomes a "myocardial infarction ruled out," possibly needing a "coronary artery bypass graft"). When doctors use "the voice of medicine," said Verghese, "they begin to lose sight of the person, and people become almost disease labels. ... Even though it's the language of medicine you record in the chart, let the voice of the patient stay alive in your imagination."

By writing, and thus bringing to the surface the feelings that patients' stories engender, physicians stay in touch with their own humanity. "It's very difficult to walk through a

life in medicine and see the carnage you and I see and not to experience intense emotions," said Verghese. But the "macho culture" of medicine encourages doctors to suppress their pain. "We're in a very secret and lonely business."

Gastroenterologist Michael C. Bennick, M.D., concurred with Verghese, saying that writing about a painful experience provides "an opportunity to listen all over again. You needn't shut out that pain; once the blinding light passes, it's often illuminating," said Bennick, an assistant clinical professor and the associate chief of medicine, who attended the residents' reading.

Verghese argued that doctors who repress their feelings not only distance themselves from their patients but also "begin to do that to themselves." Verghese noted that doctors often guard against pain in dysfunctional ways. "I think of it [medicine] as a romantic pursuit, but I have seen its seamy underbelly," said Verghese, whose 1998 memoir, *The Tennis Partner: A Doctor's Story of Friendship and Loss*, tells the story of a medical resident, a close friend, struggling with a powerful addiction to drugs.

Verghese said that reading fiction could help doctors reconnect with deep feelings. As can writing.

"I would encourage everybody to keep a journal. It keeps you healthy," said Verghese.

—Cathy Shufro

et cetera ...

NEW INSTITUTE TO EXPLORE CORTEX

The Kavli Foundation of Oxnard, Calif., has endowed the Kavli Institute for Neuroscience at Yale University to pursue multidisciplinary studies of the cerebral cortex. Pasko Rakic, M.D., PH.D., the Doris McConnell Duberg Professor of Neuroscience and professor and chair of neurobiology, will direct the new institute.

"The cerebral cortex is universally recognized as the instrument of human intelligence," Rakic said. "The goal of the institute is to understand how arrangement of the nerve cells and their synaptic circuits in the cortex embody knowledge of the outside world. We will study how molecular changes in these circuits imprint learning of something new and retain what we already know. We will also explore how our genome constructs the microarchitecture of the cerebral cortex, which is able to carry out high cognitive functions such as language and thought."

—John Curtis

HOSPITAL IMAGING GOES DIGITAL

Film and paper will become things of the past as the Department of Diagnostic Radiology begins implementing a digital archive of radiological images. The new Picture Archiving and Communication System is a filmless information system for acquiring, sorting, transporting, storing and displaying medical images.

"Imagine how much easier it will be to log on and view images and reports rather than shuffle through all that X-ray film and paper," said James A. Brink, M.D., interim chair of diagnostic radiology. According to Steve Bencivengo, director of diagnostic imaging at Yale-New Haven Hospital, the move to a digital system allows physicians to access images and radiology reports through a secure hospital network. This new system also creates a permanent, non-degradable archive. Implementation of the new system began last fall and should be complete by December of this year. The system will archive all diagnostic images.

—J.C.

Searching for a second skin

By introducing a blood supply, Yale team overcomes some of the shortcomings of artificial skin.

Before the arrival of artificial skin in the 1970s, medical options for severe dermatological damage (widespread burns, blistering diseases, trauma wounds, extensive surgical excisions) ranged somewhere between scarce and nonexistent. Bandages and ointments were applied, followed by hopes and prayers that the patient's skin, the only self-repairing organ in the body, would heal itself. The lifesaving options provided by artificial skin—human skin equivalents composed of everything from engineered porcine skin to skin from human cadavers—changed the face of dermatology.

Now, a Yale research team led by Jeffrey S. Schechner, M.D. '91, assistant professor of dermatology, is on the verge of changing the face of artificial skin.

"[Artificial skins] were originally marketed as skin replacements, but in reality they functioned as bio-

logical dressings," said Schechner. "They improve wound healing by some measurable amounts but they are not skin replacements."

Schechner's team, whose findings were published in *The FASEB Journal*, suspected that the reason these skin equivalents failed was that they did not develop perfusion—there were no blood vessels to allow blood flow after transplantation. The challenge, then, was to encourage vascularization in this artificial skin; that is, to replicate the mechanism of living skin tissue.

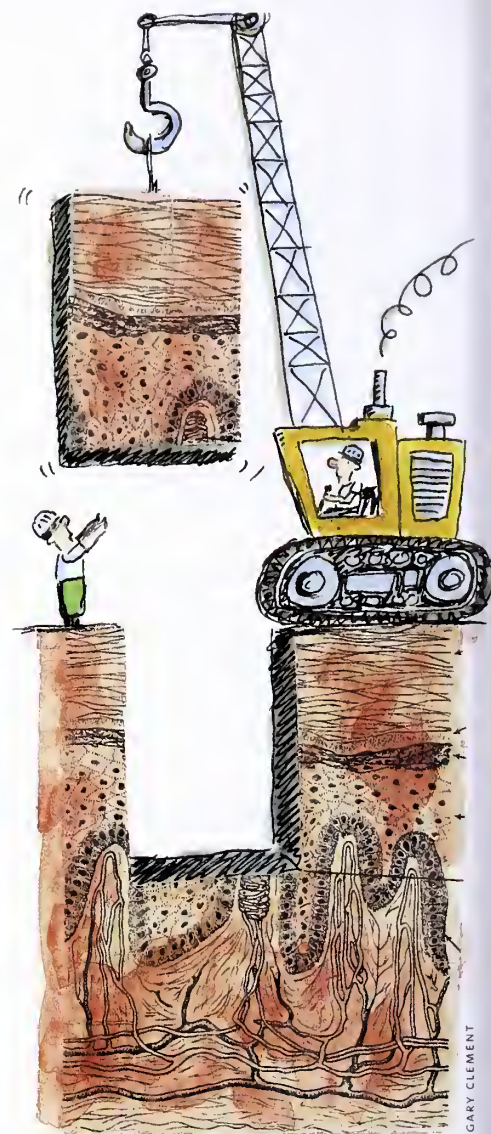
"Without a network of blood vessels, there is inadequate delivery of oxygen and nutrients in the critical posttransplantation period," said Schechner.

The team's experimental scaffold was acellular dermis (human cadaver skin), in which the cells are dead but a supportive matrix remains. This matrix was seeded with cells taken from the veins of umbilical cords which were modified to overexpress the gene *Bcl-2*, a modification that has previously enhanced blood vessel formation. (The *Bcl-2* gene produces a protein that protects cells from enzymes that trigger cell death.) The matrix was then transplanted onto mice in Schechner's lab.

It took more than two years of experimentation before Schechner had his eureka moment. "Within two weeks grafts that contained the *Bcl-2* endothelial cells consistently developed blood vessels. ... and were perfused with mouse blood," he said.

Further, these grafts held, and matured, over an eight-week period.

Schechner is quick to emphasize that theirs is "still an experimental



GARY CLEMENT

model, not a clinical model." Nonetheless, the potential benefit, if it does lead to a clinical product, will dramatically alter the role of artificial skin.

"This has been a huge area of research and clinical efforts for many in the field," said Schechner, who is also chief of dermatology at the VA Connecticut HealthCare System in West Haven. "We all want the best way to dress [burn victims and surgical patients] and decrease the mortality and morbidity associated with these conditions."

—Alan Bisbort

et cetera...

SOME VETS BETTER AFTER 9/11

After the terror attacks of September 11, 2001, veterans with pre-existing post-traumatic stress disorder (PTSD) showed fewer symptoms—including nightmares, reactions to loud noises and numbness of feelings—than veterans admitted to clinics and hospitals in the previous six months and in previous years, according to a Yale study.

“Anecdotal reports from VA clinics suggest that some veterans, far from being overwhelmed by the horrific destruction, experienced feelings of familiarity, mastery and competence as survivors who had been exposed to horror in the past, but who had experience in coping with the resultant painful memories,” said Robert A. Rosenheck, M.D., HS '77, professor of psychiatry and epidemiology and public health. His study was published last year in *Psychiatric Services*.

Although they were far from cured, these patients “seem to have benefited from the increased sense of community, patriotism and national pride across the country,” Rosenheck said.

—John Curtis

CUTTING DOWN HELPS SMOKERS QUIT

Cutting down on the number of cigarettes smoked can help older smokers kick the habit, according to a Yale study.

“Most experts will say there is only one way to quit smoking and that is to stop smoking altogether,” said Tracy A. Falba, PH.D., associate research scientist in the Department of Epidemiology and Public Health and lead author of the study, which was published in *Addiction*, the journal of the Society for the Study of Addiction. “Cutting down the number of cigarettes smoked, however, seems to promote quitting. Cutting down first may be an option for people trying to quit.”

The study used data from a national study of Americans between the ages of 51 and 61, but the concept could apply to smokers of any age, Falba said.

—J.C.

early 1970s, there were about 10 cases out of every 100,000 people in the United States. By 1990, that number had increased to 19 cases. Today it's still increasing in the United States and around the world.

The health risks of hair dye have been explored for years, but Zheng says previous studies have been contradictory and inconclusive. He and his research team conducted a six-year, case-controlled study of 601 Connecticut women between the ages of 21 and 84 diagnosed with varying subtypes of non-Hodgkin's lymphoma. The women were asked about the type of hair coloring they used, the length of time they used the products and their age when they stopped. The study included a control group of 717 healthy women matched by race, age and other factors with the case group.

Researchers found the highest risk among users of darker permanent dyes, rather than among those who used semipermanent or temporary dyes. Zheng says that's because darker dyes may contain higher levels of chemicals, and permanent dyes use an oxidizing process that creates new, potentially harmful chemicals.

The good news is that researchers didn't find any increased risk of non-Hodgkin's lymphoma among women who started using hair-coloring products after 1980. This could be because the contents of hair-dye formulas may have changed and become safer, or it could simply mean that not enough time has passed to evaluate the effects on this group. Zheng said further studies would have to be conducted to determine whether post-1980 hair dyes are indeed safer.

Noting that hair color is directly related to image—“how people are perceived and how they perceive themselves,” Zheng said that the study results need to be duplicated in different populations. Meantime, users of hair dyes should consider the trade-offs and alternatives, such as semipermanent dyes.

—Jennifer Kaylin

Increased risk of non-Hodgkin's lymphoma linked to hair dye

WARNING: The prolonged use of hair dye, especially permanent black, brown and red, may be hazardous to your health. That's the conclusion reached by Yale researchers in a study published on January 15 in the *American Journal of Epidemiology*. The scientists found that long-term users of hair-coloring products have an increased risk of developing non-Hodgkin's lymphoma, a cancer that attacks the lymphatic system, part of the body's immune system. “We found that people who used permanent dark hair dye for more than 25 years and started before 1980 will have more than twice the risk compared to people who never used hair-dye products,” said Tongzhang Zheng, S.C.D., associate professor of epidemiology and environmental health. Zheng said the study was prompted by an unexplained jump in the number of non-Hodgkin's lymphoma cases in the last 40 years. In the





JOSEPH HART

The hormonal component

A new study finds a link between stress, high levels of estrogen and certain mood disorders.

The ancients blamed women's susceptibility to mental illness on low body temperature, which made them prone to "cold" diseases caused by black bile. More recent theories blamed the pressures of balancing a career and family life. A new study suggests that the vulnerability may hinge on hormones.

High levels of estrogen amplify the effects of stress on the prefrontal cortex, an area of the brain associated with mental disorders such as depression and post-traumatic stress disorder, the Yale study found. This could explain why such illnesses occur twice as often in women as in men and why the discrepancy is most marked between puberty and menopause.

For a study published in the May issue of *Molecular Psychiatry*, neurobiology graduate student Becca Shansky and associate professor of neurobiology Amy Arnsten, PH.D., exposed rats to different levels of stress and then tested them on a working memory task that depends on the prefrontal cortex. Female rats were more sensitive than males to moderate levels of stress, but only when the females were in the high-estrogen phase of their estrus cycle. The same sensitivity was seen in females that had their ovaries removed and were then implanted with time-release estrogen capsules. It was not observed in females that received a placebo instead of estrogen.

Now Shansky is trying to sort out the mechanism underlying the effect. Previous research in Arnsten's lab offers a few hints. Stress releases excess dopamine and norepinephrine in the prefrontal cortex, which activate receptors that cause stress-related impairment, says Shansky. "It's also known that estrogen regulates the expression of these receptors. Now we're trying to see which one or ones are involved in mediating this activity."

Research by another group at the University of Pittsburgh Medical Center has added to the picture. Genetic studies of people with depression turned up an alteration in *CREB1*, a gene that encodes the regulatory protein *CREB*.

"We really perked up when we heard that, because the very intracellular pathways that impair the prefrontal cortex turn on this gene product," Arnsten said, adding that in young women with circulating estrogen, "the activity of the intracellular pathway might be sufficient to cause significant prefrontal cortical dysfunction, leading to depression." Shansky has experiments under way to determine whether female rats with high estrogen are more vulnerable to activation of *CREB1* than those with low estrogen.

"It's very important that our results are not interpreted as saying that women shouldn't take stressful jobs or expose themselves to stress," says Shansky. "It's more a matter of looking at the mechanisms involved to see if we can find new ways of treating depression." It's also important to note that these brain changes occur with *uncontrollable* stress, Arnsten adds. A long history of animal and human research has shown that a sense of control over the stressor protects cognitive and physiological responses.

Though the Yale experiments involve lab animals, they may apply to people, says Arnsten. The genetic studies show changes in the same molecular pathway that we are studying in rats. It is very encouraging."

—Nancy Ross-Flanigan

Yale scientists identify an early line of defense against West Nile virus

In the five years since the West Nile virus made its first appearance in New York, it has spread to virtually all of the contiguous 48 states. There has been an alarming increase in infections and the most serious cases have resulted in death from encephalitis. The Centers for Disease Control and Prevention reported about 9,000 cases of West Nile infection last year—more than double the number reported in 2002—and more than 200 deaths. Among those looking for ways to prevent and treat West Nile is Erol Fikrig, M.D., professor of medicine (rheumatology), who has spent the past 11 years investigating the biology of arthropod-borne illnesses, including Lyme disease.

Most of those infected with West Nile virus experience only mild illness, and some have no symptoms at all. Only about 30 percent of patients, many of them elderly or with compromised immune systems, succumb to the most serious form of the illness characterized by encephalitis. In a paper published last September in *The Journal of Immunology*, Fikrig and his colleagues offered a new explanation for why most patients are able to successfully fight off the virus shortly after infection.

In 2001, Fikrig's group successfully immunized mice against West Nile by injecting the mice with genetically engineered fragments of the protein shell that encapsulates the virus; exposure to the harmless fragments caused the mice to develop antibodies against the virus. But it took three to four days for the vaccinated mice to deploy these antibodies, and clinical experience has shown that time is of the essence in treating West Nile.

Fikrig thought that in mildly ill patients West Nile's relentless pace might have been stalled by some early immune response that clears the virus and gives these individuals time to

marshal an antibody defense. He concluded that understanding these very early immune reactions is crucial to preventing severe illness and death. Talking one day with Joseph E. Craft, M.D., HS '77, professor of medicine and immunobiology and chief of the Section of Rheumatology, Fikrig learned of an immune cell with all the right characteristics.

Craft, who specializes in autoimmune illnesses such as lupus, has extensively studied gamma delta T cells, which are believed to serve as a bridge between innate immunity, the body's first line of defense, and later immune reactions. "We thought that gamma delta T cells might play a role in this early time window," Craft said.

Along with postdoctoral researcher Tian Wang, PH.D., Fikrig tested the hypothesis. Wang injected West Nile into a strain of mice that lack gamma delta T cells and found that these mutant mice were markedly more susceptible to infection than normal animals, and quicker to develop encephalitis and die once infected. When Wang injected activated gamma delta T cells into the mutants, they fought off the disease.

But Fikrig isn't yet sure just how gamma delta T cells mount an early defense against West Nile. With the help of Eileen P. Scully, an M.D./PH.D. student in Craft's lab, Fikrig showed that the cells multiply dramatically and are activated quickly after infection. Scully also demonstrated a link between early and late immune reactions; gamma delta T cells produce interferon gamma, a potent molecule that attacks viruses and stimulates the immune system to produce antibodies.

Next Fikrig plans to see whether gamma delta T cells work in the same way in humans. If the results hold up, pharmaceutical companies might be able to make antiviral drugs that fight West Nile by boosting gamma delta T cell activity or interferon gamma production.

—Trisha Gura

et cetera . . .

A SIGNAL THAT THE END IS NEAR

A chemotherapeutic agent used against cancer for more than 30 years has a secondary effect of inducing "death signals" that kill neighboring cells, according to Yale scientists.

The agent, cisplatin, disrupts transcription and replication in tumor cells. It helped cyclist Lance Armstrong recover from testicular cancer and also works against lung, neck, cervical and ovarian cancers. In a study published in the *Proceedings of the National Academy of Sciences* in April, senior author Peter M. Glazer, M.D./PH.D. '87, HS '91, professor and chair of the department of therapeutic radiology, reported that cells affected by cisplatin can produce a death signal that also kills neighboring cells. The phenomenon occurs only when there is a high density of cells that touch each other and communicate through channels called gap junctions. It also appears to require the activation of DNA-PK, an enzyme involved in DNA damage response.

"If we can understand this mechanism," Glazer said, "it will help us to identify potential targets for manipulation."

—John Curtis

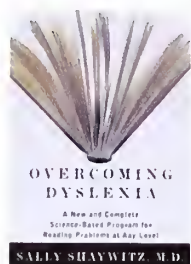
ENZYME LINKED TO EPILEPSY

Small amounts of glutamate help the brain to function normally, but high concentrations of the neurotransmitter have been linked to temporal lobe epilepsy (TLE), a common form of epilepsy that is frequently drug-resistant.

A Yale study published in *The Lancet* has found that people with TLE also have low levels of glutamine synthetase, an enzyme that transforms glutamate into the non-toxic chemical glutamine.

"We don't know why glutamine synthetase is decreased in TLE, but this is something we are exploring in our laboratory right now," said lead author Tore Eid, M.D., PH.D., an associate research scientist in the laboratory of Nihal C. de Lanerolle, D.PHIL., associate professor of neurosurgery and neurobiology. "We also want to see if we can stop the seizures and reduce the brain damage in TLE by boosting the activity of glutamine synthetase." If this turns out to be the case, Eid added, then it is possible that glutamine synthetase could be a new target for drug therapy.

—J.C.



Dyslexia's hidden contours

Sally Shaywitz scores a hit with a scientific guide to diagnosing and treating reading disorders.

By Cathy Shufro

At least one child in five has dyslexia, a congenital “wiring glitch” in the brain that makes it hard to master what neuroscientist and behavioral pediatrician Sally E. Shaywitz, M.D., calls “the most elegant and complex of human abilities—learning to read.”

Dyslexia is an inherited problem that cuts across class, race and language, says Shaywitz, professor of pediatrics. Yet “significantly less than half” of American children with dyslexia are even identified. Shaywitz finds this frustrating because researchers have developed reliable diagnostic procedures and evidence-based instruction that, in young students, may even rewire the brain. “A huge gap, almost an abyss, separates what we know and what happens to people with reading problems,” she says.

Shaywitz has helped close that gap through her own research and clinical work and by writing about the science of reading and dyslexia. Her goal, she says, is “making a complex disorder understandable and treatable.” Five years in the writing, *Overcoming Dyslexia: A New and Complete Science-Based Program for Reading Problems at Any Level* (Alfred A. Knopf) has brought Shaywitz sustained national attention since its publication in spring 2003. Soon after, *Time* ran a cover story on the topic that featured Shaywitz prominently. A year later the book, a national bestseller that *Publishers Weekly* called “ground-breaking,” was in its 10th printing; it is also available on tape and CD.

Shaywitz became interested in reading disorders during her pediatrics residency at Albert Einstein College of Medicine in the late 1960s, when she first heard mothers despair because their seemingly bright children were foundering at school. Reading ability is falsely taken as a “proxy for intelligence,” says Shaywitz, and so children with dyslexia often feel stupid or ashamed. Shaywitz has heard many dyslexic adults recount “horrible memories of being asked to read aloud in class.”

And yet, paradoxically, Shaywitz finds that among people who are smart and creative, the “crème de la crème,” a seemingly disproportionate number have dyslexia—medical school professors among them. “I can tell you, a significant proportion of them have been in my office, with the door closed, telling me, ‘I must be the only one,’” says Shaywitz.

Graeme L. Hammond, M.D., professor of surgery (cardiothoracic), who has grappled with dyslexia since childhood, says he was gratified to see that the disorder was finally getting the attention of scientists and the public when he watched Shaywitz discussing dyslexia on *The NewsHour with Jim Lehrer* in 1998. In the epilogue of her book, Hammond joins well-known dyslexics, including novelist John Irving and financier Charles Schwab, in describing the toll it took. Hammond describes how dyslexia, like many other handicaps, helps develop different, perhaps latent, pathways such as perseverance and innovation to accomplish goals.

In her book, Shaywitz describes dyslexia as a phonological weakness. That is, readers with dyslexia have trouble translating letters on a page into sounds they represent. Although people with dyslexia do learn to read more accurately over time, they do not read rapidly or automatically. “What remains for people with dyslexia is how hard they have to work, how much effort they have to put in,” Shaywitz says.

The book also corrects several misconceptions. Writing letters backwards or transposing them is common among novice writers and doesn't suggest dyslexia. And although schools identify three boys with dyslexia for every girl, researchers find no significant difference in the prevalence of reading disabilities in girls and boys. But boys get more attention—they tend to be more rambunctious—while many struggling girls go unnoticed and unidentified. The book includes checklists of signs of dyslexia and suggests which tests are effective for diagnosis. Tests for accuracy

Sally Shaywitz has, through her research and clinical work, advanced the study of dyslexia, a phonological weakness that makes it hard to translate symbols on a page into the appropriate sounds.



may miss dyslexia, especially in teenagers and adults; testing fluency is essential.

Shaywitz says educators have remained largely ignorant of the huge advances in understanding dyslexia. “The whole notion that there’s science or evidence hasn’t been part of the culture, so teachers haven’t been provided with the tools.” Furthermore, schools often provide only unproven, sporadic remediation for a chronic problem.

The book draws on a decade of laboratory research at Yale on differences in brain function between skillful and struggling readers. Shaywitz conducted those studies in partnership with her husband, Bennett A. Shaywitz, M.D., professor of pediatrics and neurology. (Both Shaywitzes are also on the Child Study Center faculty.) World-renowned leaders in the use of imaging to study reading, the Shaywitzes have discovered what they call “functional lesions” in the left occipitotemporal and parietotemporal regions (behind the left ear). These lesions correspond exactly with physical lesions in people who have lost the ability to read because of a stroke or brain tumor. They discovered this correspondence using functional magnetic resonance imaging, studying metabolism in the brain to show which parts of the brain readers use as they decode texts. **YM**



For My Next Act: Women Scripting Life After Fifty

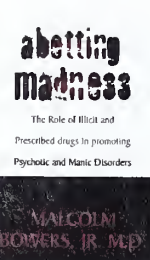
by Karen Baar, M.P.H. '81 (Rodale Press) Speaking partly from her own experience of a midlife divorce, Baar describes how women are examining their life experiences, taking a critical look forward and shaping plans for their futures.

Dermatology

by Jean L. Bolognia, M.D. '80, HS '84, professor of dermatology, Joseph L. Jorizzo and Ronald P. Rapini (Mosby) This two-volume reference set encompasses the current knowledge in the field. Covering adult and pediatric clinical dermatology and dermatologic surgery and therapy, it provides evidence-based support for therapeutic recommendations.

Abetting Madness: The Role of Illicit and Prescribed Drugs in Promoting Psychotic and Manic Disorders

by Malcolm B. Bowers Jr., M.D., HS '65, professor emeritus of psychiatry (Xlibris Corporation) The author argues that vulnerability to major psychoses is related to genetic factors that may be set in motion by the use of prescribed stimulants and antidepressants as well as illegal drugs, including cannabis, cocaine and LSD. Bowers suggests an approach to the prevention of some psychotic disorders based on this hypothesis.



Hayots Badeevuh: Reminiscences of Armenian Life in New York City

by Levon Z. Boyajian, M.D. '56, HS '60 (Tadaron Press) This narrative revolves around the Boyajian family and their circle of friends in Washington Heights, N.Y., in the aftermath of the Armenian genocide of 1915. Boyajian gives us a view of his life as a child and adolescent, recounting personal dramas and tragedies and anecdotes about his community through two world wars and the Depression.

Living Outside Mental Illness: Qualitative Studies of Recovery in Schizophrenia (Qualitative Studies in Psychology Series)

by Larry Davidson, PH.D., associate professor of psychiatry (New York University Press) Davidson offers first-person narratives illuminating people’s experiences of schizophrenia and recovery. The author shows how listening to people diagnosed with schizophrenia can affect clinical practice and social policy.

Drugs 101: An Overview for Teens

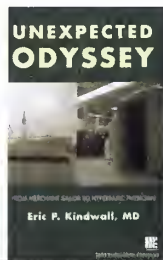
by Margaret O. Hyde and John F. Setaro, M.D., HS '86, associate professor of medicine (cardiology) (Twenty-First Century Books) This book provides teenagers with an overview of drugs and drug abuse, offering straightforward information about illicit drugs. The authors discuss the emotional, physical and psychological ramifications of drug use.

Bookshelf is a new column in *Yale Medicine* focusing on Yale authors and books of interest to the medical school community. Send ideas to Cathy Shufro at cathy.shufro@yale.edu.

FRANCIS & TAYLOR

INVESTIGATIVE
PATHWAYS

PATTERNS AND STAGES IN THE CAREERS OF EXPERIMENTAL SCIENTISTS

**Investigative Pathways: Patterns and Stages in the Careers of Experimental Scientists**

by the late Frederic Lawrence Holmes, P.H.D., former Avalon Professor of the History of Medicine (Yale University Press) Holmes, chair of the Section of the History of Medicine from 1979 to 2002, examines the careers of six pre-eminent scientists: Antoine-Laurent Lavoisier, Claude Bernard, Hans Krebs, Matthew Meselson, Franklin Stahl and Seymour Benzer. Holmes finds unifying themes as he explores the motivations for their research, how they asked questions and solved problems, and the breakthroughs they achieved.

Unexpected Odyssey: From Merchant Sailor to Hyperbaric Physician

by Eric P. Kindwall, M.D. '60 (Best Publishing Company) Kindwall chronicles his varied career which has included not only studies at Yale and Harvard, but also submarine school, service in the merchant marines and the CIA and a professorship in hyperbaric medicine.

Pediatric Complaints and Diagnostic Dilemmas: A Case-Based Approach

by Samir S. Shah, M.D. '98 and Stephen Ludwig, M.D. (Lippincott Williams & Wilkins) Through the exploration of 119 actual cases, the authors show how to recognize key diagnostic patterns for more accurate evaluation of pediatric illness and injury.

George Beadle, An Uncommon Farmer: The Emergence of Genetics in the 20th Century

by Paul Berg and Maxine F. Singer, P.H.D. '57 (Cold Spring Harbor Laboratory Press) The authors provide a biography of the Nobel Prize-winning "giant of genetics" and president of the University of Chicago. Beadle's work from 1940 to 1960 marked the transition from classical genetics to the molecular era.

Carlos Montezuma, M.D., A Yavapai American Hero: The Life and Times of an American Indian, 1866-1923

by Leon Speroff, M.D., HS '66 (Arnica Publishing) This book documents the life of one of the first Native American physicians. A Yavapai Indian, Montezuma was taken in the 1870s from his family as a boy by Pima Indian warriors, who sold him to an itinerant photographer. He ended up in Chicago, where he took advantage of unexpected educational and social opportunities, ultimately becoming a doctor and championing his tribe's land and water rights.

The descriptions above are based on information from the publishers.

SEND NOTICES OF NEW BOOKS TO Cheryl Violante, *Yale Medicine*, P.O. Box 7612, New Haven, CT 06519-0612, or via e-mail to cheryl.violante@yale.edu

Medical library makes the transition from print to electronic journals

These days a physician reading a medical journal is as likely to be peering at a monitor as paging through a magazine. Nonetheless, Yale medical librarian Daniel Dollar, M.L.S., says libraries are still in the "horseless-carriage days" when it comes to making the switch from paper to pixels.

For instance, librarians still distinguish between an "online journal" and a "journal." "One day we'll call them all journals," says Dollar, digital resources librarian at the Harvey Cushing/John Hay Whitney Medical Library.

Not that physicians and researchers are still riding horses. One service that links citations to full-text articles tracked nearly 190,000 electronic requests for articles at Yale in 2003. That figure represents only "the tip of the iceberg," Dollar says, because articles can also be downloaded from a journal site; through library subscription services, such as MDConsult; through the library's online catalog; or through its listing of e-journals. The library subscribes to 3,300 medical journals online and 2,300 in print. Most of those titles overlap, but some journals are available in only one form or the other.

Electronic journals add to the library's costs, for two reasons. First, the library generally pays a surcharge of 5 to 15 percent to add electronic access to a journal that the library already carries in printed form. Second, many readers who once paid for their own copies of journals now rely on electronic access and have dropped their subscriptions. In response, publishers are charging libraries more. "There's a reallocation of funds," says Dollar. "We have titles that have gone from a few hundred dollars to several thousand dollars."

Online journals have many advantages, Dollar says; they take up no shelf space and are accessible remotely. "Folks in the hospital don't have to run over here to get a full text of an article," says Dollar. And online articles sometimes include raw data not offered in print. But print articles also have their virtues: they may have better graphics, the ads they contain keep subscription costs down, and the reader's ability to page through an entire issue may lead to serendipitous discoveries.

By far the greatest advantage of print journals is that it's obvious how to archive them: simply bind and save them. It's not nearly as clear how to archive electronic journals. Who should be responsible? Libraries? Publishers? If an electronic journal ceases publication, what happens to its archives?

To grapple with these questions, Yale has joined a Stanford University-based consortium of publishers and libraries called LOCKSS ("Lots of Copies Keep Stuff Safe").

"We're in transition," says Dollar. "It's exciting, because we get to reinvent ourselves. But it's a time-consuming process, and we may stumble along the way. ... Essentially we're taking the library and putting it on a desktop."

—Cathy Shufro

In Circulation is a new column focusing on Yale's Cushing/Whitney Medical Library.



VAMSI MOOThA

Merging data sets to fight human disease

The sequencing of the human genome has spawned a wealth of knowledge, much of it now available online. According to Vamsi K. Mootha, M.D., a post-doctoral fellow at the Broad Institute in Cambridge, Mass., this is making possible new approaches to medical research. "The real challenge," Mootha said in a talk sponsored by the Department of Genetics in March, "will be to integrate these data sets with each other as well as with what we know from the previous literature."

As an example, Mootha described his participation on an international team that sought the gene mutation responsible for Leigh syndrome, a fatal metabolic disorder that is prevalent in a region of French Quebec. The team had first determined that the culprit gene was one of 30 on chromosome 2. "The critical feature of the disease suggested that there might be a mitochondrial pathology," Mootha said. Using this clue, the team analyzed RNA data sets and a map of mitochondrial peptides to home in on their target. "Using relatively freely available data we were able to identify the candidate gene," Mootha said.

—John Curtis



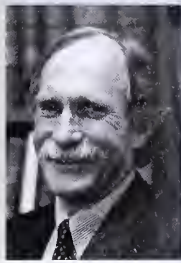
MICHELE BARRY

Biomedical research for the world's neediest

In 1990 a drug called eflornithine came on the market to treat African sleeping sickness. But a drug marketed to impoverished Africans would never turn a profit, so in 2000 it was adapted for another, less urgent, use—removing facial hair. Then, said Michele Barry, M.D., HS '77, an international campaign by groups such as Médecins Sans Frontières (MSF) shamed the drug company into restoring the drug's original mission of treating sleeping sickness.

Only 10 percent of worldwide biomedical research spending is devoted to diseases that afflict 90 percent of the world's people, Barry told a March meeting of the Justice and the Allocation of Health Care group, a seminar series organized by the Interdisciplinary Bioethics Project. Barry, a professor of medicine and public health and director of the Office of International Health, says MSF has formed an international partnership to develop medicine for three very neglected diseases that infect millions of people around the world—Chagas disease, African sleeping sickness and leishmaniasis. The partnership, the Drugs for Neglected Diseases Initiative, hopes to have as many as seven drugs available within 12 years. Barry, president of the American Society of Tropical Medicine and Hygiene, has coordinated her society's cooperation toward achieving this goal.

—J.C.



PETER AGRE

Stumbling across water channels, and a Nobel Prize

In two talks on campus in March Peter C. Agre, M.D., noted with amusement that when he was applying to medical schools, Yale turned him down. And, in an equally self-effacing vein, when he described the work that won him a share of the 2003 Nobel Prize in chemistry, he attributed it to "blind luck."

Agre, a professor of medicine and biological chemistry at Johns Hopkins University School of Medicine, described his groundbreaking research in similar terms at the 12th annual Robert W. Berliner Memorial Lecture and at the 56th annual meeting of the Associates of the Cushing/Whitney Medical Library. "We weren't even looking for water channels," he said of his discovery that explained how water crosses biological membranes. Agre was studying Rh blood group antigens and became curious about a mysterious protein that kept turning up in his experiments. He detoured from his original research and identified the first of a family of water channel proteins, which he dubbed aquaporins.

"It's sort of like driving in a remote part of Vermont and coming upon a city of 200,000 people that's not on the map," he said.

—J.C.



JOHN CURTIS (4)

With acupuncture, an integrated view of the body

Acupuncture entered the American consciousness in 1972, when a journalist on President Nixon's trip to China fell ill with appendicitis. Soon after, an account of acupuncture's relief of his post-operative pain and swelling was in the news.

Early in the 20th century, however, acupuncture was seen, even in China, as a folk remedy. In a talk in March sponsored by Colloquia, Workshops and Lectures in History of Medicine and Science, Bridie J. Andrews, Ph.D., assistant professor of the history of science at Harvard, said it took a young Chinese doctor to make it acceptable. In the 1920s Cheng Dan'an turned to acupuncture to treat his own back injury, for which the Western medicine he admired could only prescribe opiates. Intrigued by the success of the treatment, he applied his knowledge of anatomy to acupuncture and in 1932 published a book showing new acupuncture points. In 1993 magnetic resonance imaging suggested that certain biochemical pathways are affected by acupuncture. "Biomedical research into acupuncture," Andrews said, "is producing a much more integrated view of body function, which is something that biomedicine has been striving for for some time."

—J.C.

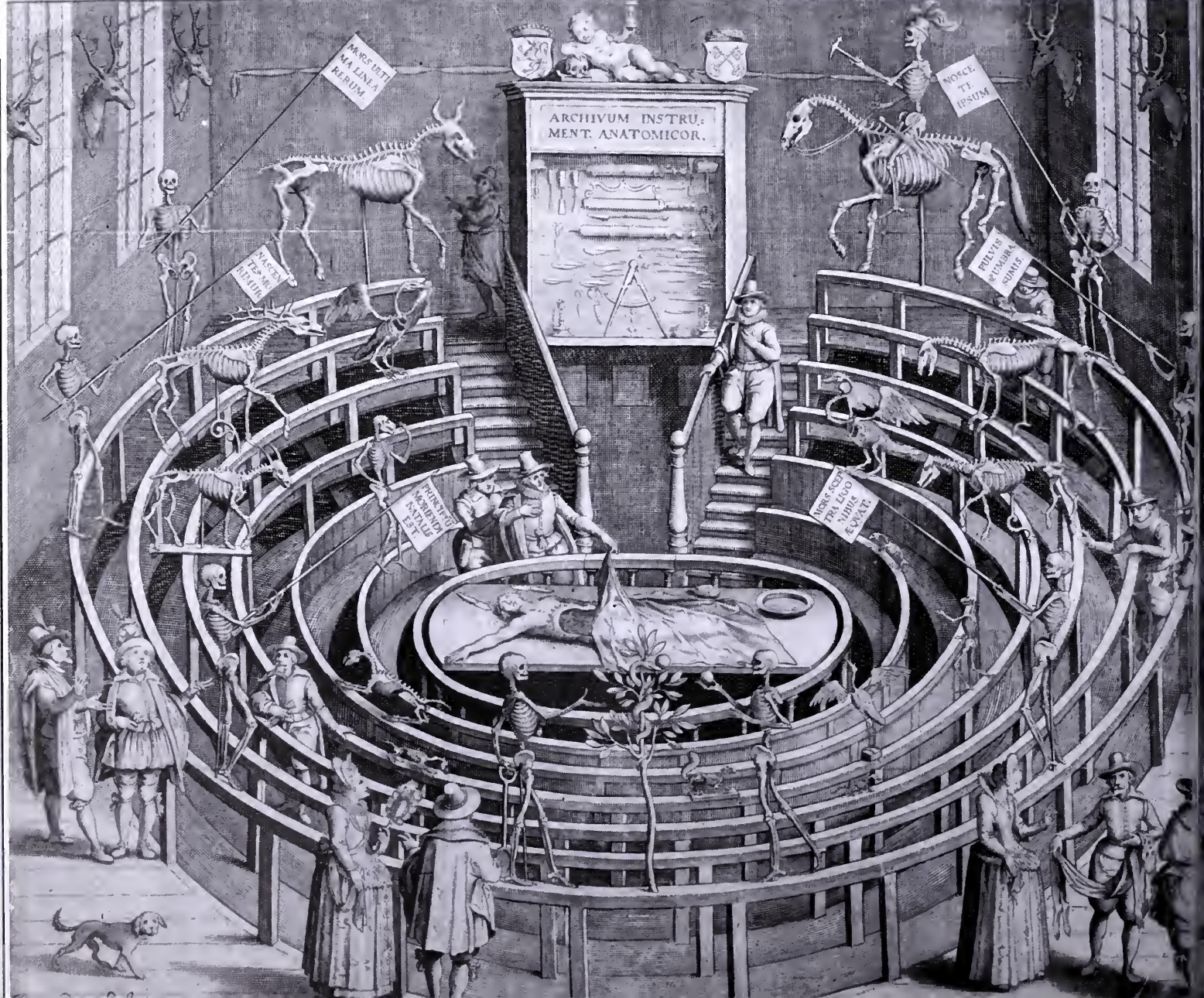


Homage to the crown prints

By Cathy Shufro

At 50, one of the world's best collections of medical imagery draws on humor and history.

VERA ANATOMIÆ LUGDUNO-BATAVÆ CUM SCĒLĒ, IS ET RELIQVĪS QVÆ IBI EXTANT DELINEAT





LEFT Sigmund Freud once hung a copy of this popular lithograph, *Une Leçon du Docteur Charcot à la Salpêtrière*, in his consultation room in Vienna. Part of a collection of prints assembled by Yale psychiatrist Clements C. Fry, M.D., it shows a hypnotized woman during a lecture on hysteria.

OPPOSITE TOP Peter Arno's charcoal and watercolor cartoon depicting a psychiatrist and his patient appeared in *The New Yorker* in 1936.

OPPOSITE BOTTOM *Anatomical Theatre at Leiden* was sold as a souvenir at the University of Leiden in the Netherlands. The well-dressed men and women touring the dissection hall in this 1610 engraving by W. Swanenburg show that the upper classes of 17th-century Europe were interested in anatomy.

A woman diagnosed with hysteria is the centerpiece of a popular lithograph, a copy of which once adorned Sigmund Freud's consultation room in Vienna. The 1887 print shows the hypnotized woman before a roomful of men. Two assistants reach out to break her fall; beside her, French neurologist Jean-Martin Charcot lectures about hysteria.

Une Leçon du Docteur Charcot à la Salpêtrière is part of the collection of prints on medical topics that Yale psychiatrist Clements C. Fry, M.D., began assembling in the early 1930s. When Fry, the former director of student mental health at Yale, died in 1955, he left his 2,000 prints to the university. Now nearing its 50th anniversary, it is one of the world's largest and most prominent collections of medical prints.

Fry selected prints as records of medicine's history and public image; for their rarity; and—as often as not—because he found them funny: a 1937 *New Yorker* cartoon by Whitney Darrow Jr. shows a woman dressed as Napoleon, complete with sword, campaign hat and oversized epaulets. Her hand tucked into her jacket, she faces a balding psychiatrist across the desk, who tells

her: "It's a pity I didn't get to your case earlier, Mrs. Perkins."

An 1859 lithograph by Honoré Daumier combines satire with historical evidence that lay people tried their hands at the novel therapy of hypnosis. A man dangles a huge diamond ring above the face of a mesmerized matron. "The new entertainment at parties," the caption reads, "or, how to amuse and make a fool of yourself in public without a quarrel."

By day Fry, who joined the faculty in 1926 and pioneered mental health for students, ran the Division of Mental Hygiene at the Department of University Health. He devoted his leisure time to collecting, says Susan E. Wheeler, M.A., curator of the Clements C. Fry Collection of Medical Prints and Drawings, which is housed in the Cushing/Whitney Medical Library. "This was his avocation, his relaxation. To be a collector was very typical in that era in this environment," says Wheeler, whose book, *Five Hundred Years of Medicine in Art* (Ashgate), catalogs the collection.

Fry considered his bachelor apartment at Trumbull College a sort of medical museum, but his intent was less scholarship than pleasure. "What I try to do is to get the things I can have fun with," he wrote to a print seller in the 1930s.

Several recurring themes appear in the satirical prints that interested Fry, says Wheeler. "One is the ineffectiveness of the doctor. ... Another is the cost of medicine. What you also see in the satirical prints is people making fun of pain—laughing at the pain of illness and the pain of therapy."

Although Fry collected works by Rembrandt and Hogarth, artistic merit alone wouldn't justify a place in his collection. He wanted prints that depicted the history of medicine. For example, *Anatomical Theatre at Leiden*, shows more than a dozen well-dressed men and women wandering through the dissection hall. The rare 1610 engraving by W. Swanenburg demonstrates that educated people of the early 17th century were fascinated by anatomy.

Fry's spirit lives on in the library's continuing effort to keep the collection current.

"The collection is a living collection," says Wheeler.

Cathy Shufro is a contributing editor of *Yale Medicine*.

A boxed set of 10 note cards representing five satirical prints from the Fry collection is for sale for \$10 at the medical library circulation desk. The cards can be ordered by mail for \$12 per box by telephoning the library at 203-785-5352.

Mapping the social mind



The mysteries of autism, an often-intractable disorder of aloneness, are starting to give way to discoveries by Yale scientists. Their hope is that early intervention will help autistic children develop social ability and a better sense of their place in the world.

By Peter Farley
Photographs by Daphne Geismar



Brendan Lyle, who turns 5 in August, has made progress since his diagnosis of autism at age 2. "When he was first diagnosed, he was pretty indifferent to people. He was very much in his own world, and very quiet," according to his mother, Pamela Lyle. "Through constantly working with him, I think we've exposed him to the social world and he really, really does well with it now." At left, Brendan romps with his father, Christopher, on a trampoline at home in Orange, Conn.



Humans share such solid bonds with family, friends and community that we can scarcely imagine what it might be like to be a tiger, or a spider or any of the myriad of Earth's creatures that lead solitary lives. Many mammals leave their kin forever after weaning and, aside

from sporadic encounters with mates, live out their entire lives in solitude. In what seems to us an utterly alien life cycle, the hatchlings of some species are left to their own devices at birth: emerging from the safety of the egg, they confront the wide world all alone.

Relationships are so fundamental to our nature that, since the dawn of child psychology, researchers have wondered at the immensely powerful innate attachment of infants and parents, the very first social link forged in human life. Arnold L. Gesell, M.D., PH.D., the prolific scientist and scholar who founded the Yale Child Study Center, used the relatively new medium of cinematography to analyze infant behavior beginning in the 1920s; he noted that even a newborn baby will turn its head toward the sound of its mother's voice and, when lifted from the crib, will naturally mold its tiny body to conform to hers.

As Fred R. Volkmar, M.D., the Irving B. Harris Professor of Child Psychiatry, Psychology and Pediatrics in the Child Study Center, says, "Gesell saw that, for the child, the parent's face and voice are the most important things in the world."

However, in a now-classic 1943 article, the Johns Hopkins psychiatrist Leo Kanner, M.D., described a group of children who were puzzling exceptions to this rule. These children, whom Kanner dubbed "autistic," had marked difficulties with language; engaged in repetitive, bizarre behavior; and—most poignantly—were inexplicably inclined toward aloneness. Kanner's autistic patients were largely indifferent to their parents and, as they grew, to people in general. Instead, they seemed inexorably drawn to objects.

"Every one of the children, upon entering the office, immediately went after blocks, toys or other objects, without paying the least attention to the persons present," Kanner wrote. "It would be wrong to say that they were not aware of the presence of persons. But the people, so long as they left

the child alone, figured in about the same manner as did the desk, the bookshelf or the filing cabinet."

Sixty years on, autism remains among the most mysterious and intractable of psychological disorders. Most psychological treatments depend on communication, and the insistent inwardness at the core of the condition has stymied generations of researchers and therapists.

But a newfound hopefulness is in evidence at the Child Study Center. Volkmar, an expert on the diagnosis and classification of autism, is also something of a scientific impresario: over the past several years he has assembled an autism research team as diverse and productive as any in the world. The group's efforts received recognition from the National Institutes of Health in 2002, in the form of a \$5 million grant as part of the NIH's Studies to Advance Autism Research and Treatment (STAART) initiative. Buoyed by a surge in federal funding and public awareness and inspired by new findings on the effectiveness of early intervention and the changeability of the human brain, these Yale researchers are using cutting-edge technologies—functional neuroimaging studies, eye-tracking devices and specially designed computer games—to shed new light on the riddle of autism.

"Refrigerator mothers" no more

The Yale Child Study Center is set back some distance from South Frontage Road at the northern fringe of the medical school campus, hard by the noise and bustle of Route 34. Only a small sign and an unassuming brick facade are visible from the road, so Volkmar urges visitors to watch for "the Mayan temple," his fanciful name for the colossal parking garage just across the street.

But the center is a landmark of the first order in the study of child development. Since its founding in 1911 by Gesell, the father of the field in America, the center's mission has been to bring child psychiatrists, pediatricians and psychologists together under one roof—an all-embracing approach to child development in which research is tightly intertwined with protecting children's health and welfare.

The melding of research and treatment infuses day-to-day life at the center with a distinctive vigor. It is a place where children—patients, research subjects or both—chat excitedly in waiting rooms piled with toys and backpacks, while scientists, physicians, parents and staff hustle through a multistory warren of offices, labs and clinics.

OPPOSITE AND BELOW

Hailey Lyle seems to relate best to others when engaged in rough-and-tumble play, such as this session with her father, Christopher Lyle, in the family's backyard.

One particularly circuitous corridor in the center leads to Volkmar's office, a spacious, book-lined room with a wall of windows that looks out onto a sunlit courtyard. An affable man who favors hiking boots and a slightly loosened tie, Volkmar led the group that redefined autism in the latest edition of the American Psychiatric Association's *Diagnostic and Statistical Manual*, or *DSM*, the bible of psychiatric diagnosis.

For decades, Volkmar says, autistic children and adults were routinely misdiagnosed as mentally retarded or schizophrenic. During the 1950s and 1960s, when psychoanalysis was ascendant, the pain and desperation felt by parents of autistic children were compounded by certain prominent child psychiatrists, most notably Bruno Bettelheim of the University of Chicago's Orthogenic School, who declared that the condition was caused by inadequate parenting, and in particular by cold, aloof "refrigerator mothers."

By 1980, when autism was first formally recognized in the *DSM*, it had become generally accepted that the condition is caused by some breakdown in normal neurological development, but parents' emotions can still be whipsawed between hope and despair by what Volkmar calls "the flavor of the week"—a regular stream of media coverage of purported cures or breakthroughs. In 1998, for example, it was widely reported that some autistic children experienced dramatic recoveries after receiving injections of synthetic secretin, a gut hormone. However, recent clinical trials of the therapy have been inconclusive at best.

With Volkmar's guidance, the latest edition of the *DSM* reflects the current view that autism disorders comprise a spectrum of conditions that fall along a continuum of severity. At one end of the scale is full-blown autism, with major language difficulties; repetitive, sometimes self-destructive



behavior; virtually complete social isolation; and profound intellectual disability. At the other end is Asperger's syndrome, a condition in which patients are verbally fluent and sometimes highly intelligent, but in many cases are socially disabled that, in Volkmar's words, "they couldn't walk into a McDonald's and get a cheeseburger and change." Patients whose symptoms fall somewhere in between these two extremes make up the less-well-defined diagnostic realm of PDD-NOS or "pervasive developmental disorders, not otherwise specified."

The autism spectrum disorders are four times more common in boys than girls. Although many more children are diagnosed with these disorders today than 20 years ago, Volkmar believes the rising number of cases reflects better diagnosis and a higher level of awareness of autism among physicians and the general public rather than a true increase in incidence of the disorder.

Many autistic children and adults possess uncanny abilities, but usually in one narrow—and often quite arcane—realm. Some are musical or artistic prodigies; others can recite from memory the complete train schedules from countries they have never set foot in, or describe what the weather was like in a given place for any day in recorded history. But Volkmar says that few patients have the wide range of extraordinary skills so memorably put to use by Dustin Hoffman in his otherwise accurate portrayal of the autistic Raymond Babbit in the 1988 movie *Rain Man*.

Finding each patient's place on the autism spectrum is challenging because the symptoms and developmental course of patients in all three categories vary tremendously. "If you were in a room with 100 autistic patients, first you'd be struck by how different they are from one another, but then you would quickly realize how similar they are," Volkmar says. And what's similar in patients across the spectrum is an overpowering disability in social interactions.

Do you see what I see?

The social disabilities at the heart of the autism spectrum are brought vividly to life in a videotape made at the Child Study Center's developmental disabilities clinic by Ami J. Klin, PH.D., Harris Associate Professor of Child Psychology and Psychiatry. In one clip, an autistic toddler intently plays with a toy while Klin moves into her field of vision until his face is only inches from her eyes. Because of what Klin calls

the "gravitational pull" of objects on the autistic child's mind, the girl behaves as if she were completely blind to him. But her vision is perfect: we soon see her crawling excitedly toward a tiny orange candy on the floor that she had spied from across the room.

Given the primacy of social interactions in human life, scientists have proposed that we have evolved special brain mechanisms for perceiving faces. In experiments, normal subjects perceive faces more quickly than objects, apparently because faces are seen as wholes, whereas objects are first seen as a collection of component parts. However, it has been known since the late 1970s that autistic subjects see objects just as quickly as faces. For them, it seems, faces have no special status—they hold no more interest than chairs, spoons or airplanes.

Until recently, it was difficult to develop these findings further. In collaboration with Warren R. Jones, a graduate student and research associate in the Child Study Center, Klin has probed more deeply into this phenomenon using a technology known as eye tracking, which allows experimenters to precisely monitor where a person is looking at any given time (See sidebar, p. 25). When Klin and Jones showed emotionally charged excerpts from Mike Nichols' 1966 film *Who's Afraid of Virginia Woolf?*, for example, normal subjects tended to focus on the actors' eyes. However, autistic viewers fixed their gaze on mouths or, in many cases, on incidental objects in the periphery of the scene; while Richard Burton and Elizabeth Taylor kissed passionately in a *Virginia Woolf* clip, one autistic viewer pored over a light switch on a distant wall.

For other eye-tracking experiments, Klin and Jones have adapted the motion-capture technique used to create computer-generated characters in motion pictures (such as the Gollum character in the *Lord of the Rings* movies) to generate minimalist "point-light" animations of actors playing patty-cake or engaged in some other activity that appeals to children. As still images, point-light displays look like star maps, a random collection of white dots on a dark background. But when they move, normal subjects instantly and irresistibly recognize a human figure. Klin and Jones placed a correctly oriented point-light animation side by side with an upside-down animation on a split computer screen, and eye tracking revealed that normal children prefer to watch the correct version. However, autistic children show no preference whatsoever,

Brendan Lyle didn't speak at all until he went to school. He first communicated through American Sign Language and has developed a vocabulary of about 100 words. Now he also has well over 100 spoken words at his command, but has difficulty enunciating them.

"About 25 percent are easily understood by the general public; I understand them all," says his mother, Pamela Lyle. "This is a child I never thought would speak, and now he's doing pretty well." Mother and son kiss through the mesh surrounding the trampoline.

indicating that they do not recognize the human being represented by the dots.

Our social instincts are so deeply rooted that they can be triggered even in the absence of faces or suggestions of human figures. In a separate line of work from his eye-tracking studies, Klin has been using a short film devised by the psychologists Fritz Heider and Marianne Simmel during the 1940s that features a few simple geometric shapes—a big triangle, a circle, a smaller triangle—moving about the screen. Heider and Simmel discovered that, when asked to describe this film, people almost invariably impose a social interpretation on it; instead of speaking in terms of inanimate shapes passively changing positions, viewers invent stories in which, for example, a chase might be taking place between a bullying big triangle and a terrified little triangle. But according to Klin, autistic subjects do not personify the shapes in the film, and rely instead on purely physical metaphors in their descriptions.

A brain space for faces?

Given the dramatic differences in autistic patients' behavior compared to that of other individuals, one would expect that there would be conspicuous differences between autistic and nonautistic brains. But according to neuroimaging expert Robert T. Schultz, PH.D., associate professor in the Child Study Center, finding such markers has been surprisingly difficult, and only a few studies in the neurobiology of autism have stood the test of time.

Neuroscientists have known since 1997 that pictures of faces, but not pictures of simple objects, activate a small patch of the cortex by the right ear that has come to be known as the fusiform face area, or FFA. But when Schultz and his colleagues showed pictures of faces to autistic patients in a 2000 study using functional magnetic resonance imaging (fMRI), they found little activation in the FFA; instead the study revealed a high level of activity in nearby brain regions involved in recognizing objects.

Schultz's results have since been confirmed by at least six other research teams—a rare instance of consensus in an area where solid findings have been elusive—and they provide the tantalizing beginnings of a neural explanation for the object-centered worldview first described six decades ago by Kanner and so clearly revealed in Klin and Jones' eye-tracking studies. But Schultz isn't certain whether the FFA



deficit he found actually causes social disability by itself or reflects some wider disturbance in brain circuitry.

In an intriguing new collaboration, Schultz and Klin are using Heider and Simmel's film of geometric forms in fMRI experiments to sketch out a map of the entire "social brain," Schultz's term for an interconnected network of brain regions—including the amygdala, the medial frontal cortex, the superior temporal sulcus and the FFA—that seem to be crucial for normal human social interaction. In a recent study with normal subjects, Schultz and Klin found that perceived social interactions between the geometric forms strongly activate all the components of the brain's social network, including the FFA—a quite surprising result since the film contains no images of faces. Based on these results, Schultz and Klin believe that "face area" may be a misnomer for the FFA: this brain area may not just be sensitive to faces, but it may be a more general-purpose area for perception of and knowledge about people and social interactions, however abstract. Schultz believes it may occupy a central place in the circuitry of the social brain.

Schultz's former Yale colleague Isabel Gauthier, PH.D., now at Vanderbilt University, has also argued for a broader view of the FFA. Gauthier has shown that, in people who have special expertise, such as car enthusiasts or bird-watchers, the FFA can be activated by pictures of the objects of their affection, whether they be T-birds or warblers. Moreover, along with Michael J. Tarr, PH.D., of Brown

University, Gauthier has shown that this “expertise effect” can be produced in normal adults by intensively training them to recognize subtle differences between previously unfamiliar objects. Gauthier and Tarr used “Greebles,” doll-like objects that look almost identical to the casual observer. As one would expect, when the experiment began, pictures of Greebles did not activate the FFA, but once Gauthier and Tarr’s subjects were “Greeble experts” who could quickly and reliably tell one Greeble from another, the FFA was significantly activated whenever they saw a picture of a Greeble.

In the clinic, a social-skills primer

Gauthier and Tarr’s Greeble work elegantly demonstrates that the FFA is a changeable structure, which may have direct implications for the treatment of autism. Schultz believes that by adulthood the components of the social brain in autistic patients may be severely weakened by a lifetime of social deprivation, but inspired by Gauthier’s work, he is working with colleagues at a STAART-funded clinic housed in the Temple Medical Center in New Haven to find out whether very early intervention and social training can head off some of this cumulative neurological fallout.

“We are betting on brain plasticity,” says Katarzyna Chawarska, PH.D., an associate research scientist who heads up an ambitious screening program at the clinic. Chawarska is refining eye-tracking techniques to diagnose autism during infancy in the hope that the brains of very young autistic children might still be malleable enough to absorb what she calls “pivotal” social skills. “We treat each and every child as a child with endless potential,” she says.

As newly diagnosed children enter treatment at the STAART clinic, Associate Research Scientist Cheryl Klaiman, PH.D., will eventually teach them to use Let’s Face It!, a computer game created in collaboration with James W. Tanaka, PH.D., of the University of Victoria in Canada, that has been specially designed to hone autistic kids’ face-recognition skills. Because it is difficult to perform fMRI studies with very young children, especially autistic children, Klaiman and Schultz plan to assess whether Let’s Face It! is inducing brain changes by measuring event-related potentials, electrical signals that are detectable on the scalp with equipment similar to that used in the more familiar EEG technique. At the same time, Klin and Jones plan to use eye tracking to see whether tools such as Let’s Face It! can

change young autistic children’s performance on their face-perception and point-light display tasks.

The team hopes that developing “social expertise” through early intervention might gently steer autistic children away from isolation and coax them toward the rich social world that is their human birthright. With an optimism tempered by decades of grappling with this most stubborn of disorders, Volkmar says frankly, “We don’t know if it will work, but we’re going to give it our best shot.”

Keeping science grounded

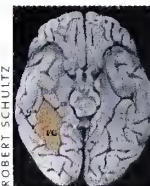
Science proceeds deliberately, and it will be some time before the members of the group know whether they can make a real impact on autism by transforming the social brain. In the meantime, autistic children and their families remain locked in a difficult daily struggle. Lawrence D. Scahill, PH.D., an associate professor in the Child Study Center and the School of Nursing and a pioneer in pediatric psychopharmacology, has focused his energies on rigorously testing existing drug treatments for autism. Scahill and his colleagues recently published a landmark clinical study of risperidone, an antipsychotic drug, which provided the first conclusive evidence that the drug can successfully control violent tantrums in autistic children.

Scahill says that the \$5 million STAART grant is “a real shot in the arm” that buys much-needed certainty in his field, which has long been plagued by studies too small and too poorly designed to draw firm conclusions. “The government is now funding autism research at a level where we can get sample sizes that are respectable,” Scahill says. “That’s a real first. Now we can not only answer the primary scientific questions, but we may finally be able to provide real guidance to clinicians on how to treat these kids.”

Klin would agree. The greatest strength of Yale’s autism group, he says, isn’t in tools or techniques, or even in the talents of the group’s individual members. What is most important, he says, is the unusual fusion of clinical work and research at the Child Study Center, which keeps the team’s science firmly grounded in the real lives of patients and their families.

“Our very best hypotheses come from our observations of individual children,” Klin says. “We try to match science with disability, one child at a time.” **YM**

Peter Farley is a freelance science writer based in Boston. Daphne Geismar is a graphic designer and photographer based in New Haven.



Liz Taylor, “Men of Stars” and humanoid robots: new tools to study autism

The eyes may or may not be the gateway to the soul, but they are providing Yale researchers Ami J. Klin, PH.D., Warren R. Jones and Fred R. Volkmar, M.D., with an unprecedented glimpse into the workings of the autistic mind, thanks to lightweight eye-tracking devices and motion-capture systems like those used by Hollywood directors to create computer-generated characters.

Autistic children and adults are often less threatened by technological devices than they are by people, and many are infatuated with television programs and films. In their eye-tracking work, Klin and Jones have benefited from both tendencies in naturalistic studies that mirror real-world behavior better than typical, highly controlled psychological experiments.

Eye tracking allows scientists to show a film or still image and see precisely where in the frame the subject is looking. The newest head-mounted trackers are relatively inexpensive, and subjects—even infants—can move their heads freely during experiments. Experimenters secure a lightweight rig, which looks a bit like a futuristic baseball cap, to a subject's head with a comfortable leather headband. Two metal tubes, each equipped with an infrared lamp and a high-speed infrared camera, swoop down from the headband to a spot just under the eyes.

The infrared lamps invisibly illuminate the eyes for the cameras, which make recordings at the rate of 60 frames per second and stream the information into a computer. Sophisticated image-analysis software instantly finds the centers of the pupils in each of these thousands of images. All this happens so quickly that a cursor corresponding to a subject's direction of gaze can be superimposed on the experimental image as the subject is looking at it.

This technique has revealed that the gaze of autistic subjects has a distinctive signature. Normal subjects who watched the classic Elizabeth Taylor film *Who's Afraid of Virginia Woolf?* focused mostly on the actors' eyes, and made appropriate shifts in gaze when characters made pointing gestures. Autistic subjects, however, often focused on irrelevant objects away from the center of the frame, and their eye movements were tentative and unpredictable in response to the actors' gestures.

To create the Gollum character for the *Lord of the Rings* trilogy, director Peter Jackson relied on motion-capture technology, in which an actor's body is fitted with lights and the resulting points of light are used to reconstruct the actor's movements and embody them in a new, computer-generated “skin.”

Klin and Jones also use motion capture to create point-light displays of actors' movements. The raw point-light displays look like constellations when seen as still images but they are recognizable as moving human forms, even to very young children, the instant

they begin to move. “When my son saw a still version, he said ‘Stars!’” Klin recalls. “But when he saw it move, he said, ‘Ah! It’s a man of stars!’” This exquisite sensitivity to “biological movement” is so critical for survival that it can be demonstrated even in nonhuman primates.

Using eye trackers to monitor children's shifts in gaze while they watched moving point-light displays that were either correctly oriented or upside-down, Klin and Jones discovered that normal children have a decided preference for right-side-up displays. Autistic children seem to detect no difference between the two, which Klin and Jones interpret as a deficit in perceiving biological movement in autism.

Klin and Volkmar have just received a grant from the Doris Duke Charitable Foundation for a remarkable new collaboration with Brian Scassellati, PH.D., assistant professor of computer science. Scassellati builds robots with human-like facial expressions to study children's social development, and he and Klin plan to examine whether the robots might be a less threatening way for autistic patients to develop social skills.

Klin says that in order for this newest work to be successful, children would have to perceive the robots in social terms, but he says he has few worries on that front after watching his three-year-old daughter's reaction to a prototype that seemed to ignore her: “It took her only a few seconds to start fighting with this robot, because it was snoring!”

ABOVE LEFT TO RIGHT An autistic viewer of a scene from *Who's Afraid of Virginia Woolf?* focused on a distant light switch rather than the steamy interaction of the protagonists.

A child responds to a robot trained to give and react to social cues.

Geometric shapes take on social roles in a clip from Heider and Simmel.

The fusiform face area (shaded) of the brain may play a broader role in social perception than previously thought.

BELOW A series of images from a point-light display rendering of a man in motion. Children with autism tend not to recognize the human figure in the images, whereas other children do.



Life on wheels

Filmmaker and physician Gretchen Berland gave cameras to three disabled people and asked them to shoot their everyday lives. *Rolling*, the documentary that resulted, shows us what the world looks like from the seat of a wheelchair.

By Cathy Shufro



Ernie Wallengren, one of the subjects and creators of the film *Rolling*, continued to coach his son's basketball team after the neurodegenerative disease ALS took away his ability to walk. He recorded his day-to-day experience for the film using a video camera mounted on his wheelchair.



Filmmaker Gretchen Berland, an assistant professor of medicine at Yale and former producer for *NOVA*, thought that telling the story from her subjects' point of view would give viewers a deeper understanding of what it means to be disabled. "When you give the camera to someone else, it shifts the power. It's much more a process of discovery for both subject and researcher."



Vicki Elman sits in her wheelchair, stranded on the sidewalk in front of her California house. Her wheelchair motor has stalled, and the van driver has refused to roll her into her house, saying it's against the rules. She can't phone for help, because her cell phone is getting no signal. Elman, who has multiple sclerosis, uses the lightweight camera mounted on her wheelchair to film herself. She is sobbing, struggling to regain her calm. "I guess I will spend the night here," murmurs the 51-year-old woman. As the sky darkens, her face melts into a silhouette.

Ernie Wallengren can't walk anymore, and he knows things will get much worse as his disease progresses. He has ALS, a fatal neurodegenerative disease. "I am bored beyond belief. The boredom—boy, is that the mainstay of life with ALS," says the 48-year-old television writer and producer, whose credits include *The Waltons*, *Falcon Crest* and *Touched by an Angel*. He stares silently into the camera for a few seconds. He sighs. "This is going to suck." A rhythmic thumping comes from another room; one of his five children is practicing drums.

Sixteen months later, when Wallengren can no longer speak, he films himself wearing a headset that translates subtle head movements into Morse code. A computer translates the code into an artificial voice. It speaks for Wallengren in a monotone. "It's a tedious process that limits how often I can yell at my children."

At the age of 16, Galen Buckwalter was ranked third in the half mile in the state of Pennsylvania and ran "for the sheer fun of it." Then, he says, "a smooth swan dive on a nice summer day ended when I hit a rock and was left paralyzed from the neck down. I've used a wheelchair for 30 years now." As he films some friends shooting baskets, he says, "I'd take them all to the cleaner back in the day. That's one thing I can do, is talk about the glory days. Who's going to argue with me?"

These scenes come from *Rolling*, an award-winning documentary about life in a wheelchair produced by Gretchen K. Berland, M.D., an assistant professor of medicine, who came to Yale three years ago after a career in public television and a subsequent career shift into medicine. Beginning in the summer of 2001, Berland asked Los Angeles-area residents Elman, Wallengren and Buckwalter to record the view from a wheelchair. She gave each of them a small video camera, lots of tape and free reign.

"I had no idea what those three people would film," Berland recalls. She expected they'd mostly record daily activities in a wheelchair: getting dressed, opening doors, transferring from wheelchair to driver's seat—what Buckwalter jokingly calls "Gimp 101." And at first, that's what they filmed.

"Then, over time, something happened," says Berland. "They began to film more than the processes of care. They began to use the cameras to document the events that were impacting their lives." Over the course of two years, the three recorded 212 hours of tape. From that raw material, Berland and her co-director, Rhode Island film editor Michael Majoros, crafted a 72-minute documentary. The result is a film, says Berland, that "makes the invisible visible."

Last fall, *Rolling* was named best documentary at the Independent Film Project conference for works in progress, held in New York City. Oscar-winning Los Angeles filmmaker Chuck Workman, one of five jurors for the documentary competition, said the panel chose *Rolling* as the best work among 63 juried entries.

"I've never seen anything like that before, where the filmmaker didn't try to manipulate the material," says Workman. "It's very easy for a [documentary] filmmaker to manipulate and push an agenda. She was allowing the reality to speak to us. She was allowing the disabled people to speak to us."

Rolling was one of 14 new American films chosen by the Independent Film Project for screening at the European Film Market, which was held in conjunction with the Berlin Film Festival in February. A week later, at the invitation of the New York Film Society, Berland and Majoros showed and discussed the film at Lincoln Center in New York. Executives from Sony Pictures Classics have asked Berland for a copy to review, and she hopes that the film will be broadcast on television. (When a major commercial network discussed the possibility of airing the show if she would make the three subjects' lives appear less arduous, however, she declined.)

“Broadcast, for me, is just the first way to get the film out,” says Berland. She also wants the film seen by legislators, medical students, practicing physicians and people who make health care policy, so they can visualize the lives of the 1.6 million Americans who use wheelchairs. “I think that disability rights is where civil rights was 40 years ago,” she says.

Patient as filmmaker

Berland's work did not grow out of advocacy. Granted, in disseminating her film, Berland uses her documentary in a conventional way: to educate audiences about a set of problems. However, her work originated not as investigative journalism but rather as a means of doing research.

“You can use the visual medium to explore aspects of a patient's experience that we might not otherwise be able to capture using any other kind of data collection tool,” Berland explains. “When you give the camera to someone else, it really shifts the power. It's much more really, truly, a process of discovery for both subject and researcher. ... I didn't control the camera. They controlled what they chose to show us.”

What emerged are the stories of three people “trying to live with as much dignity as possible. Three people—not three people in wheelchairs—who were very different people.” (Wallengren died in May 2003 at age 50.)

The film shows the three enjoying themselves: Buckwalter singing “Charlie” with his rock band; Wallengren careering down the sidewalk in his motorized wheelchair in a race against his son; Wallengren trying not to laugh while drinking orange soda, as a boy from the all-star basketball team he coaches teases: “Do not make a guy with a neurological disorder laugh”; Elman, triumphant and elated, after she falls from bed while transferring into her wheelchair and then strategizes with two neighbors about how to lift her safely off her bedroom floor. “We did it!” exults Elman. “We didn't even call the paramedics!”

Rolling also shows the three subjects enduring the humiliations imposed by insensitive doctors and thoughtless architects and by the irrationality and inadequacy of the health care system. Elman reveals these indignities most starkly in her self-portrait. On the night she is stranded outside her house, a neighbor does eventually rescue her. But when her electric wheelchair first breaks down, her internist tells her that she is “shit out of luck.” Elman cannot afford a spare chair, and the doctor tells her that if no “babysitter”

is found to assist her while the chair is out for repair, she must go to a nursing home for “a couple of days, at least.” In fact, she spends a month in the nursing home, a month that begins with her struggle simply to enter the building. No one hears her pounding on the front door, and she uses all her strength to heave the door open. Later that day, she films an aide refusing to take her to the bathroom; the aide tells Elman to use a bedpan or a diaper instead. After that, Elman tells us, the nursing home took away the camera.

The day she finally goes home, Elman falls and must return to the nursing home. After a month in bed with no physical therapy, she is debilitated. Berland reports that the bill for the two nursing home stays totaled \$11,700. The cost would have gone far toward the \$22,400 needed for a new chair. “How does one quantify the indignity she experienced?” asks Berland.

Scenes from *Rolling* resonated for New Haven resident Björn Ljungström, a wheelchair user for 10 years who saw the film last fall when Berland screened it at Yale's Program for Humanities in Medicine. “The humiliation adds up more and more so you get crushed down. It gets to you,” says Ljungström, a retired engineer who moved here from Sweden six years ago to marry an American. “You can have a very good life in a wheelchair,” he says, but “you have to get the right equipment, the right assistance. All of this is more difficult and more expensive in America, compared to Sweden, where I have never paid one cent for equipment.”

He bristles at the comment by one audience member that Berland's depiction of disabled people is uplifting because it reveals the triumph of the human spirit over adversity. “Should we be impressed by slaves who survive?” asks Ljungström.

“This really has to be shown to as many people as possible,” says Alex Diaz de Villalvilla, a first-year medical student who also attended the screening. “I was amazed at how little assistance Vicki [Elman] has and how poorly the health care system responds to people like her. She's not a one and only.” He says the film should be shown, in particular, to health care policy-makers, so that they will see “exactly what they're responsible for.”

Working for NOVA

Despite a background in television, Berland never expected to use filmmaking in medical research. She thought she'd

left the medium behind when she enrolled in medical school in 1992 after five years of making documentaries for public television. Since age five, she'd planned to be a doctor like her father, whom she describes as "the kind of physician you want to take care of you." He still practices in Portland, Ore., where she grew up, the older of two daughters. (Her sister works for the World Bank, specializing in the role water quality plays in international conflict.) Berland thought she'd like medicine because it combines science, advocacy and making people's lives better.

Then, as a biology major at Pomona College in California, she'd become fascinated by the challenge of making science accessible to a nonexpert audience. She worked for *NOVA*, the science series at WGBH in Boston, and later for the *MacNeil/Lehrer NewsHour* in New York. At *NOVA*, she and her colleagues would spend a year on a show lasting a single hour. "One year to one hour," she says. That hour could draw an audience of millions.

Berland worked on seven shows, including one about the race to develop the superconductor that won her team an Emmy in 1988, and a documentary on chaos theory.

After several years in television, Berland tried to imagine how she would feel at 40, looking back on her career. She recognized that she would regret not studying medicine. At age 28, she enrolled at the Oregon Health Sciences University. She felt sure she'd left her life in television behind. "I didn't want to be a TV doctor."

As it turned out, Berland did not forsake film for long. Her first reunion with the camera occurred during a psychiatry rotation. While visiting teenagers in the city's juvenile justice center, she asked the incarcerated teens where they pictured themselves in five years. "Dead," they replied. The stories they told her, of violence, exploitation and deprivation, "were never in the chart." She thought: "Here they are in a multimillion-dollar sophisticated jail, and we have no idea about who these kids are. We know nothing about their lives." She got a grant to give cameras to five teenagers outside the jail, and they made a film that was broadcast on public access TV.

When she moved to St. Louis in 1996 for a residency in medicine at Washington University, she used film again. She lent cameras to a dozen fellow residents who filmed a "video diary" of what happened on call. Covering overnight for another doctor, she says "is the experience where resi-



Vicki Elman, who has multiple sclerosis, exercises in a scene from *Rolling* that shows her when things are going well. The film also conveys the intense frustration Elman experiences when her motorized wheelchair breaks down.

ROLLING

dents really learn to be doctors. There's no manual that tells you what to do, and it can be very stressful." The 1998 half-hour film, *Cross-Cover*, has been distributed to 150 residency programs nationwide as a springboard for discussion.

Getting the idea for the wheelchair film was "serendipitous." It came to Berland in 1999, when she was a fellow at UCLA's Robert Wood Johnson Clinical Scholars Program, which trains young physicians to do health services research aimed at improving health care. Berland was attending a medical conference—and casting about for an idea for her research project—when she noticed a participant who used an electric scooter. Everything took longer for the woman: getting through doors, rolling up to the microphone to ask a question. "I thought, 'I wonder what her life is like.'"

Berland could simply have interviewed the woman, and others in wheelchairs, but the questions would have reflected what Berland wanted to know. "That assumes we can define the boundaries of what is important," says Berland. "The camera lends itself to discovering something new. In medicine we interrupt people every seven seconds. The camera gives the patient power."

While giving cameras to teenagers and to residents had been sidelines to her main occupation of training to be a doctor, the stakes were higher when Berland began work on

At the heart of disability, a “positive perception of self”

Galen Buckwalter, PH.D., agreed to film life from his wheelchair to show that a disabled person is neither a hero nor a victim, just an ordinary person doing his best to shape a satisfying life. At the least, Buckwalter thought, the film would “normalize” him and the other wheelchair users in the documentary. It would help viewers feel more at ease around people in wheelchairs.

Rolling managed to do much more than that, says Buckwalter. “We went further,” says the California research psychologist, who lost the use of his legs in a 1973 diving accident. “We presented an analysis of what is at the essence of disability.” That essential element, common to all people with disabilities, he says, “is the need to integrate dependence into our daily lifestyle, in a way that’s egosyntonic—consistent with a positive perception of self.”

The award-winning film, produced by Yale internist Gretchen K. Berland, M.D., shows three lives lived at odds with a culture that teaches that “we have to be lone guns.” “My reality is I’m dependent on a wheelchair,” says Buckwalter in a telephone interview last winter. “That doesn’t change everything, but it changes quite a bit. ... For me to exist—to borrow a phrase—I need a village.”

Buckwalter used the camera Berland gave him to record both pleasant and distressing moments: he banters with friends around a campfire, and he teases his wife, Deborah, for choosing schmaltzy music when they share a glass of wine. He shows himself reconnoitering the parking lot outside their Pasadena loft to avoid dog feces as he rolls out to his car.

In the scene that he found most difficult to film, he muses about the increasing pain in his shoulders, arthritic from years of lifting himself in and out of his chair. At age 47, Buckwalter faces the prospect of switching to an expensive motorized wheelchair. The change will be a blow to his self-image. “Even after I got hurt, I still considered myself a very physical man,” he says. “I viewed my injury as very static. It wasn’t going to change as I aged.” But, he now acknowledges, “being disabled, you age in dog years.”

Buckwalter joined Berland’s documentary project when she was a Robert Wood Johnson clinical scholar at UCLA, looking for wheelchair users to collaborate on her film. The two met through a fellow in Berland’s group who was getting help on his project from Buckwalter, who works at the Southern California Kaiser Permanente Medical Group developing tests for age-related cognitive changes.

Buckwalter almost died last summer when medication he took to prevent blood clots caused a catastrophic gastrointestinal bleed. As he struggled to survive, Buckwalter recalls, “I was just trying to get in touch with what was good about me. ... I think it was one of those times where if I didn’t really want to live, I could have gone. And I really did want to live.”

As he regains his strength, he reports that he is “feeling almost ecstatic at being alive and being engaged. ... Life is very bright right now, and *Rolling* is part of that brightness for me. I literally feel blessed to be part of this. Because when I watch *Rolling*, I feel like I’m part of something much bigger than me: I think it succeeds at portraying disability as a situation that does not at all impede having a richly rewarding life.”



Galen Buckwalter, who was paralyzed in a diving accident 30 years ago, says that *Rolling* demystifies and normalizes the experience of wheelchair users: “I think it succeeds at portraying disability as a situation that does not at all impede having a richly rewarding life.”

Rolling. This was part of her research as a fellow in the clinical scholars program, where expectations are high. Although Berland also worked on a quantitative study of the accuracy and sophistication of medical information on the Internet, taking on a film project marked her as nontraditional.

“I wasn’t sure what I was looking for. That’s where people get nervous, because it’s risky. You don’t have a hypothesis you’re going to test or an outcome that you’re going to measure.” She wasn’t even sure how she would use the tapes she got from Elman, Wallengren and Buckwalter, whom she found through colleagues. At first, she thought she might use film sequences to illustrate a paper about the lives of people who use wheelchairs. But in the end, she realized that the footage was so powerful that it had the capacity to become a film.

Finding that powerful footage was “a process of discovery,” says co-director Majoros, a film editor and documentary filmmaker on the faculty of the Rhode Island School of Design. Joining the project after shooting had begun, Majoros quickly saw that editing *Rolling* would differ from editing a documentary he’d filmed himself. When you shoot your own footage, he says, “it’s pretty obvious what the good stuff is and the bad stuff is.” Because *Rolling* was filmed by “neophytes,” he and Berland had to search, without preconceptions, for “the pieces that tell a story.” Among hours and

hours of seemingly dull footage, Majoros recalls, “all of a sudden there’d be a 45-second gem.”

He noticed some differences between his choices and Berland’s. In deciding what to include, he says, “I will tend to opt on the side of a good story. She will come at it much more from an academic background—to make sure we aren’t misrepresenting something.”

Berland had already worked with Majoros, on *Cross-Cover*, having met him through a colleague. She found a collaborator of a different sort—and made a Yale connection—through her work as a clinical scholar at UCLA. Attending meetings of clinical scholars from around the nation, she got to know Harlan M. Krumholz, M.D., a professor of medicine, who heads Yale’s clinical scholars program, a sister program to UCLA’s. Over time, Krumholz developed into an across-the-continent mentor for Berland. Anyone doing scholarly work needs support, but when the work is unconventional, she says, “it really helps to have someone in your corner. Harlan as well as others here [at Yale] have provided that support.”

Krumholz helped to recruit Berland to the Yale faculty, and since November 2001 she has served as a core faculty member of the clinical scholars program. She spends about a third of her time as an internist, treating patients through the School of Medicine’s primary care program and teaching medical students and residents.

“Gretchen has an enormous amount of creativity and vision around issues very relevant to the way in which our health care system works,” says Krumholz. “Her work helps us see what may be right in front of us but may not be visible to us.”

A complement to large studies

Two factors that obscure the physician’s view of the patient’s experience are pressures on doctors to be efficient and the advent of megascale studies. “Gretchen’s work is all the more important because we’re in an era when house calls are no longer made,” says Krumholz. During standard 15-minute office visits, “physicians have lost the opportunity to explore what patients’ lives are really like,” he says. Also, advances in information technology allow researchers to amass and analyze huge quantities of data and to observe patterns. But, says Krumholz, “enormous data sets are very reductionist. Standardized collection of data doesn’t allow

for nuance and for understanding the tapestry of what makes up people’s lives. ... Whether it’s research, or art or some combination, Gretchen’s work is a great complement to the studies in which we’re dealing with large numbers of people.”

Berland has begun another research project using cameras and has ideas for two others. She is working with Krumholz to study what happens when a hospitalized patient has a cardiac arrest. The camera will serve as a data collection tool for a study of how hospital staff handles “codes.” Berland also wants to learn about health care from the perspective of ordinary people by giving them cameras. She is thinking of doing that research in the defunct manufacturing hub of Waterbury, Conn. She wants to use film to study how patients re-enter the outside world after spending time in the hospital.

Krumholz said Berland’s work must face the test imposed on all qualitative research: is it generalizable? He answers yes. “The truths that you see when you watch her film ring so true, resonate so well, that you just know these aren’t isolated experiences of these individuals. These themes transcend these individuals and must speak to a broader experience.

“The challenge she faces is whether an academic medical center can adapt to understand how to credit this work, because it is so far outside the mainstream. ... The academic system is used to counting papers published.”

Berland’s view of herself as a researcher came through clearly to filmmaker Workman. Unprompted by any discussion of what constitutes research, he called *Rolling* “a scientific study ... a scientific presentation of what happens” to Elman, Wallengren and Buckwalter.

Workman admires what he called the “purity” of the film. “You don’t have Charlton Heston or Gene Hackman narrating it. It’s so much more interesting for an audience to make their own decisions about this.” And he said that audiences have seen so much nonfiction that “they have a very good detector of what isn’t real and what isn’t truthful.” Viewers can tell that Berland has not distorted the material to construct an audience-pleasing film.

“I hope the movie goes far,” says Workman. “I hope she makes more movies.”

Cathy Shufro is a contributing editor of *Yale Medicine*.

Graduate school dean moves to Yale College

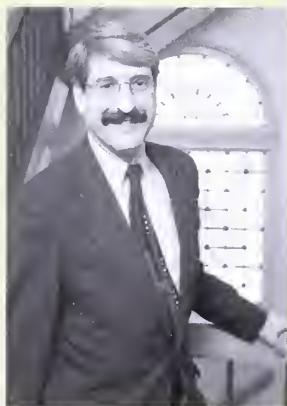
Psychology professor Peter Salovey replaces Richard Brodhead as dean of the undergraduate school.

A little over a year after he was appointed dean of the graduate school, PETER SALOVEY, PH.D. '86, has taken on a new post as dean of Yale College. He replaces Richard H. Brodhead, PH.D., who left Yale to become president of Duke University.

Salovey, the Chris Argyris Professor of Psychology, is deputy director of the Center for Interdisciplinary Research on AIDS based at the School of Public Health, where he is also a professor. His work on message framing has explored the effectiveness of health promotion campaigns designed to reduce risky behaviors that can lead to infection with HIV/AIDS and other sexually transmitted diseases. He has conducted similar work on health communications targeting cancer prevention behaviors.

In more than 200 publications he has reported on human emotion and health psychology. His research has explored the psychological consequences of the arousal of emotion, especially the ways in which mood and emotion influence autobiographical memory and social interaction. With John D. Mayer, PH.D., Salovey developed the theory of emotional intelligence, showing that people have a wide range of measurable emotional skills that profoundly affect their thinking and action.

Salovey has served on the National Science Foundation Social Psychology Advisory Panel and the National Institute of



Mental Health (NIMH) Behavioral Science Working Group, and is presently a member of the NIMH National Advisory Mental Health Council. He was a recipient of the National Science Foundation's Presidential Young Investigator Award and of the 2001 National Cancer Institute's CIS Partner in Research Award.

Salovey has been chair of the psychology department and director of undergraduate studies and graduate studies. He has won the William Clyde DeVane Medal for Distinguished Scholarship and Teaching at Yale College and the Les Hixon '63 Prize for Teaching in the Social Sciences.

Jon Butler, PH.D., chair of the Department of History, professor of religious studies and the William Robertson Coe Professor of American Studies and History, will replace Salovey as dean of the Graduate School of Arts and Sciences.



Former Cancer Center director honored with professorship

Vincent T. DeVita Jr., M.D., has been named the Amy and Joseph Perella Professor of Medicine in recognition of his contributions to cancer research and treatment.

The chair was endowed in December with a gift of \$2.5 million to strengthen the Yale Cancer Center's ability to develop translational research and new treatments. Joseph R. Perella, a member of the cancer center's advisory board, is chair of The Institutional Securities Group at Morgan Stanley. His wife, Amy Perella, is a survivor of Hodgkin's disease.

Following DeVita's tenure the chair will be renamed the Vincent T. DeVita Professor of Medicine and will support a physician at the cancer center with a strong clinical research background in the treatment of cancer.

DeVita, a former director of the National Cancer Institute, was director of the Yale Cancer Center from 1993 until last July. He now chairs the Yale Cancer Center Advisory Board and is a professor of medicine and epidemiology and public health. He serves on the editorial boards

of numerous scientific journals and is the author or co-author of more than 450 scientific articles.

Faculty members selected as fellows of AAAS

Three members of the Yale University faculty with medical school affiliations were named fellows of the American Academy of Arts and Sciences (AAAS) in May.

Donald M. Engelman, PH.D. '67, the Eugene Higgins Professor of Molecular Biophysics and Biochemistry, uses X-ray diffraction, neutron scattering, electron microscopy, optical spectroscopy and biochemical methods to determine how the primary sequences of membrane proteins determine their three-dimensional structures and how they function.

Paul A. Fleury, PH.D., dean of the Faculty of Engineering, is the Frederick William Beinecke Professor of Engineering and Applied Physics. At Yale he has been a catalyst in the emergence of engineering as a cohesive link between the physical and biomedical sciences.

Susan Hockfield, PH.D., provost of Yale University, is the William Edward Gilbert Professor of Neurobiology and former dean of the Graduate School of Arts and Sciences. She studies the development of the mammalian brain and the progression of the deadly glioma type of brain tumor. She has written more than 90 scientific publications and is the primary author of *Molecular Probes of the Nervous System: Selected Methods for Antibodies and Nucleic Acid Probes*.



Sharon Inouye



Susan Hardy



Curtis Patton



Margaret Bia



Sidney Blatt



James Comer

Sharon K. Inouye, M.D., M.P.H. '89, professor of medicine (geriatrics), associate clinical professor of nursing and co-director of the Yale Program on Aging, received the Ewald W. Busse Research Award in Biomedical Sciences at the Gerontological Society of America's 56th meeting in San Diego, Calif. Inouye was recognized for her contributions to advancing the scientific understanding of delirium and functional decline. At the same meeting, **Susan E. Hardy, M.D.**, postdoctoral fellow in geriatric medicine and a P.H.D. candidate in investigative medicine, was awarded the Person-in-Training Award. Hardy was honored for her paper "Predictors of Recovery of Independent ADL Function Among Newly Disabled Community-Dwelling Older Persons."

Two members of the medical school faculty have been named to a re-established Minority Advisory Council (MAC). The MAC will advise President Richard C. Levin on the appropriateness of policies related to minority groups.

The medical school faculty members are **Liza D. Cariaga-Lo, ED.D.**, assistant dean of diversity at the graduate school and assistant clinical professor at the Child Study Center, and **Curtis L. Patton, PH.D.**, professor of epidemiology (microbiology) and director of International Medical Studies.

Three Yale faculty members were honored in April by the National Kidney Foundation (NKF) of Connecticut with the Pioneers in Transplantation Awards: **Margaret J. Bia, M.D.**, professor of medicine (nephrol-

ogy), **Marc I. Lorber, M.D.**, professor of surgery (transplantation), and **Bernard Lytton, M.B.B.S.**, the Donald Guthrie Professor Emeritus of Surgery.

Sidney J. Blatt, PH.D., professor of psychiatry and psychology and chief of psychology in the Department of Psychiatry, is the recipient of the 2004 award for Distinguished Scientific Contributions from the Division of Clinical Psychology of the American Psychological Association.

James P. Comer, M.D., M.P.H., HS '66, the Maurice Falk Professor of Child Psychiatry in the Child Study Center, was honored with the seventh annual John P. McGovern Behavioral Sciences Award by the Smithsonian Institution. The award, presented in January by Sen. Hillary Rodham Clinton (N.Y.), recognizes individuals in the behavioral sciences, literature and other professions who have made outstanding contributions to furthering the understanding of the family in America.

Joseph E. Craft, M.D., HS '77, professor of medicine and immunobiology, has been named director of the Investigative Medicine Program at Yale. Craft replaces Keith A. Joiner, M.D., M.P.H. '03, who left in February to become dean of the University of Arizona College of Medicine. The Investigative Medicine Program provides rigorous research training for physicians in laboratory science or patient-oriented research leading to the awarding of a P.H.D. degree.

Elena L. Grigorenko, PH.D. '96, associate professor of psychology and associate professor of child studies in the Child Study Center, has won the 2004 American Psychological Association (APA) Award for Distinguished Scientific Early Career Contribution to Psychology (Developmental). This award is given once every three years to an outstanding young scientific investigator less than 10 years post-P.H.D.

Michael Kashgarian, M.D. '58, HS '63, professor of pathology and molecular, cellular and developmental biology, received the Jacob Churg Award of the Renal Pathology Society in March at the meeting of the United States and Canadian Academy of Pathology in Vancouver, British Columbia. The Jacob Churg Award is presented annually to an individual who has made major contributions to the field of nephropathology.

Marvin Moser, M.D., clinical professor of medicine and editor in chief of the *Journal of Clinical Hypertension*, has received the International Society of Hypertension Award for Outstanding Contributions to Clinical Research and Treatment in the Management of Hypertension.

Susan S. Spencer, PH.D., professor of neurology, has received the Clinical Investigator Award from the American Epilepsy Society/Milken Family Foundation, to recognize her contributions to epilepsy research. She received the award in December 2003 at the annual meeting of the American Epilepsy Society in Boston.

V. Robin Weersing, PH.D., assistant professor in the Child Study Center, was one of six researchers named a William T. Grant Scholar in April by the William T. Grant Foundation. A \$300,000 five-year grant will support her research on developing and disseminating effective interventions for depression and anxiety in youth.

Barry L. Zaret, M.D., the Robert Berliner Professor of Medicine, chief of the Section of Cardiovascular Medicine and professor of diagnostic radiology, received a 2004 Ellis Island Medal of Honor in May for his outstanding contributions to American medicine. The medal was created in 1986 "to honor the many ancestral groups who through struggle, sacrifice and success helped build this great nation." Presidents, senators, congressional leaders and Nobel Prize winners are among those to receive the medals. Zaret's family is from Belorussia, an area also known as White Russia that was once part of the Russian Empire.

SEND FACULTY NEWS TO

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Subspecialties? That's our specialty

The 2004 Match shows that Yale students, like their peers, want a niche to call their own.

By Ilene Wong

"Have any of you guys been having Match nightmares?" one of my classmates asked in March, a week or so before the 2004 residency placements were announced for 25,000 U.S. medical students (including 107 here in New Haven). Many of us had indeed slept fitfully while waiting to learn where we would be spending the next phase of our training, and for good reason. Yale medical students flocked this year toward the most competitive subspecialties, and with precious few slots in these programs, the process was more than a little nerve-racking. "It can be a real game of chance," Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93, the associate dean for student affairs, had warned us. "There are no guarantees."

The late 1990s saw a shift away from subspecialty training in favor of generalist careers. More than half the students in the Yale classes of 2000 and 2002, for example, chose residencies in internal medicine, family practice and pediatrics, and nationally the figure was higher. This year, fewer than 40 percent of Yale students entered these tracks, favoring instead such highly sought-after fields as dermatology and radiology, which also carry higher salaries. One reason seems to be debt, which will average \$109,457 for graduating students this year, according to the Association of

American Medical Colleges. Another is the desire for a controllable lifestyle with less call and shorter hours. Families have changed, and most physicians will not have a stay-at-home spouse to support a round-the-clock practice. But beyond this, Yale medical students may be predisposed to subspecialize because that is where their curiosity leads them. My classmates are likely to want to become experts in a field and to call something their own.

For nearly every medical student, Match Day is the undeniable climax of four years, a day in which anxiety yields to profound certainty with the rip of an envelope. I approached the third Thursday in March on a more even keel than most. Like 16 of my classmates who applied for the early-match specialties (otolaryngology, neurology, neurosurgery, ophthalmology and urology), I had received an early-morning call in January informing me of my match. One moment I was being roused from sleep by a ringing phone; the next I knew for certain where I would be and what I would be doing for the next six years. Many of my friends were on rotations or in class that morning, so my celebration was protracted and intimate. I shared the news with my family and distant friends by phone in the quiet of my room.

March 18, however, was an entirely different matter. After spending the morning discussing professionalism with John S. Hughes, M.D., HS '76, and other faculty members, we filed into the Marigolds dining area at 11:40 (our itinerary for the day had helpfully noted that from 11:30 to noon, we would experience a time when the "tension mounts"). Family members, significant others and classmates tak-

Nduka Amankulor and Brian Nahed looked over the Match list with Interim Dean Dennis Spencer.



JOHN CURTIS (2)

ing a fifth year joined the jittery crowd. At noon the doors to Harkness ballroom opened and my classmates rushed in to open their envelopes. There was a lot of joy and just a little bit of disappointment as people met their match. At around 12:10 the full match list was released and students huddled in groups to marvel at the collective picture, which was on the whole incredibly rosy: an unprecedented 12 students matched in dermatology; a dozen future pediatricians almost uniformly matched at their first choice; six students apiece placed in the competitive fields of orthopaedics, ophthalmology, urology and radiology.

At times it seemed like there were too many people to congratulate. Eliza Auerbach, who will be going to Columbia for pediatrics (her first choice), summed up the sentiments of many of my classmates, noting that she was "happy, but overwhelmed."

Vernee N. Belcher was ecstatic about staying at Yale for internal medicine/primary care. But even before tearing open that fateful envelope, she reflected that we all had much to be grateful for by having been at Yale Med: "No matter where we match, it's clear we will all be great doctors."

Ilene Wong is beginning her residency in urology this summer at Stanford.

2004 residency placements for Yale medical students

The Office of Student Affairs has provided the following list, which outlines the results of the National Resident Matching Program for Yale's medical graduates. Some names appear twice because the graduate is entering a one-year program before beginning a specialty residency. The transitional designation is a one-year program with three-month rotations in different specialties.

California

California Pacific Medical Center, San Francisco
Paul Kim, radiation oncology

Contra Costa Regional Medical Center, Martinez
Pramita Kuruvilla, family practice

Harbor-UCLA Medical Center, Torrance
Chirag Shah, emergency medicine

Santa Clara Valley Medical Center, San Jose
Paul Kim, transitional

St. Mary Medical Center, Long Beach
Ragui Sedeek, medicine-preliminary

Stanford University Programs
Bao Duong, emergency medicine
Katharine Fast, internal medicine
Saif Ghoie, general surgery
Cambria Hembree, internal medicine
Ilene Wong, surgery-preliminary, urology

University of California, San Francisco
Michael Eisenberg, surgery-preliminary, urology
Mona Kotecha, anesthesiology
Liana Kretschmar, pediatrics
Roberto Lugo, orthopaedic surgery
James McCabe, internal medicine
Harsimran Singh, internal medicine

Connecticut

Hospital of Saint Raphael, New Haven
Paul El-Fishawy, medicine-preliminary
Cynthia Guzman, transitional
Nabil Salib, general surgery
John Soderberg, medicine-preliminary

Yale-New Haven Hospital
Nduka Amankolor, surgery-preliminary, neurosurgery
Vernee Belcher, internal medicine/primary
Michael Bloch, psychiatry-adult/child
Victoria Bruegel Sanchez, orthopaedic surgery
Severine Chavel, medicine-preliminary, dermatology
Keith Choate, medicine-preliminary, dermatology
Oscar Colegio, medicine-preliminary, dermatology
Craig Dushey, orthopaedic surgery
Rina Garcia, internal medicine/primary
Grahame Gould, surgery-preliminary, neurosurgery
Michael Greenspan, internal medicine
Cynthia Guzman, ophthalmology
Karl Haglund, medicine-primary-preliminary
Joseph Harburger, internal medicine
Byron Kennedy, general surgery
Elaine Kung, medicine-primary-preliminary
Elin Lisska, internal medicine
Kavita Mariwalla, dermatology
Paola Uranga, general surgery
Erica Wang, obstetrics and gynecology

District of Columbia

Georgetown University Hospital
Heather Shelsta, transitional

Walter Reed Army Medical Center
Clifton Mo, internal medicine

Washington Hospital Center
Mona Kotecha, medicine-preliminary

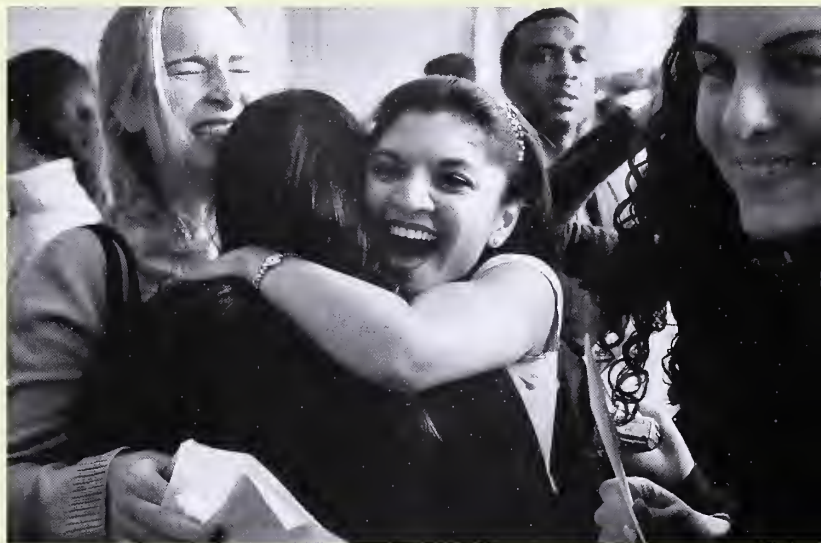
Illinois

University of Chicago Hospitals
Jennifer Blair, emergency medicine
Melissa Kirkwood, general surgery
Elaine Kung, dermatology

Maryland

Johns Hopkins Hospital, Baltimore
Renee Boynton-Jarrett, pediatrics
William Burns, general surgery
John Koethe, internal medicine

Elizabeth Arleo, Rupali Gandhi, Reena Rupani and Cinthia Guzman shared a moment of joy over their successful matches.



National Naval Medical Center, Bethesda
Suneil Ramchandani, internal medicine

Massachusetts

Beth Israel Deaconess Medical Center, Boston
Wei Chan Hwang, internal medicine
Benjamin Negin, internal medicine
Jared Weiss, internal medicine

Brigham and Women's Hospital, Boston

Mark Berman, internal medicine/primary
Ugonna Duru, obstetrics and gynecology
Darlene Gabeau, radiation oncology
Karl Haglund, radiation oncology
Timothy Henrich, internal medicine
Christopher Herndon, obstetrics and gynecology
Stephanie Holler, diagnostic radiology
Alfred Lee, internal medicine
Jacqueline William, pathology

Carney Hospital, Boston
Ryan Jean-Baptiste, medicine-preliminary

Children's Hospital of Boston
Virginia Cohen, pediatrics
Rupali Gandhi, pediatrics
Dena Springer, pediatrics
Rachel Willner, pediatrics

Massachusetts Eye and Ear Infirmary, Boston
Ben Kim, ophthalmology

Massachusetts General Hospital, Boston

Allyson Bloom, internal medicine
Amir Fathi, internal medicine
Kavita Mariwalla, medicine-preliminary
Ashraf Thabet, diagnostic radiology
Parsia Vagefi, general surgery
Erik Weiss, surgery-preliminary, urology

Mount Auburn Hospital, Cambridge
Darlene Gabeau, medicine-preliminary
Ben Kim, medicine-preliminary

Michigan

University of Michigan Hospitals, Ann Arbor
Sarah Kohnstamm, internal medicine

New Hampshire

Dartmouth-Hitchcock Medical Center, Lebanon
Jennifer Fines, pediatrics
Adam Pearson, orthopaedic surgery
Hilary Ryder, internal medicine

New Jersey

UMDNJ-New Jersey Hospital, Newark
Robyn Siperstein, dermatology

Erica Wang and her husband, Stephen Shiao, read over the letter announcing her match in ob/gyn at Yale-New Haven Hospital. Shiao is in his fifth year of the M.D./PH.D. program.



JOHN CURTIS (2)

New Mexico

University of New Mexico Health Sciences Center, Albuquerque
Lawrence Goldstein, emergency medicine

New York

Albert Einstein College/Jacobi Medical Center, Bronx
Jessica Newman, dermatology

Albert Einstein College/Montefiore Medical Center, Bronx

Brent Little, diagnostic radiology
Jane Schneider, medicine-preliminary

Beth Israel Medical Center

Jessica Newman, medicine-preliminary

Lenox Hill Hospital

Elizabeth Arleo, medicine-preliminary

Memorial Sloan-Kettering Cancer Center

Richard Awdeh, transitional
Stephanie Holler, transitional

Mount Sinai Hospital

Bahar Firoz, medicine-preliminary
Tamiesha Frempong, medicine-preliminary
Brent Little, medicine-preliminary

New York Eye and Ear Infirmary

Ragui Sedeek, ophthalmology

New York Medical College at St. Vincent's Hospital

Ashraf Thabet, medicine-preliminary

New York Methodist Hospital, Brooklyn

Ryan Jean-Baptiste, diagnostic radiology

New York-Presbyterian Hospital-Columbia

Eliza Auerbach, pediatrics
Paola Ayora, pediatrics
Cordelia Carter, orthopaedic surgery
Caroline Jjingo, internal medicine
Daniel Prince, orthopaedic surgery

New York-Presbyterian Hospital-Cornell

Elizabeth Arleo, diagnostic radiology

New York University School of Medicine

Bahar Firoz, dermatology
Rachel Levy, internal medicine/primary
Reena Rupani, medicine-preliminary

SUNY Health Science Center, Brooklyn

Jane Schneider, dermatology

University of Rochester/Strong Memorial Hospital

Emily Lambert, medicine-preliminary-neurology, dermatology

Bahar Firoz and Jesse James studied the list of matches to see where classmates were headed.

**North Carolina**

Duke University, Durham
Richard Awdeh, ophthalmology
John Soderberg, dermatology

University of North Carolina Hospital, Chapel Hill

Shannelle Campbell, general surgery

Ohio**Cleveland Clinic Foundation**

Edward Cho, surgery-preliminary, otolaryngology

Pennsylvania**Albert Einstein Medical Center, Philadelphia**

Robyn Siperstein, transitional

Allegheny General Hospital, Pittsburgh

Eduardo Marchan, surgery-preliminary, neurosurgery

Children's Hospital of Philadelphia

Spencer Epps, pediatrics
Laura Mobisson, pediatrics

Hospital of the University of Pennsylvania, Philadelphia

Charles Baillie, internal medicine
Kathryn Davis, medicine-preliminary, neurology
Myriam Fernandes, obstetrics and gynecology
Sean Lucan, family practice
Alejandro Necochea, internal medicine
Alejandro Reti, pathology

Scheie Eye Institute/University of Pennsylvania, Philadelphia

Tamiesha Frempong, ophthalmology

Thomas Jefferson University, Philadelphia

Ada-Nkem Nwaneri, family practice

Wills Eye Hospital, Philadelphia

Heather Shelsta, ophthalmology

Rhode Island**Rhode Island Hospital/Brown University, Providence**

Reena Rupani, dermatology

Texas**University of Texas Southwestern Medical School, Dallas**

Jenny Yiee, surgery-preliminary, urology

Washington**University of Washington Affiliated Hospitals, Seattle**

Rajasekhara Ayyagari, surgery-preliminary, urology
Zachary Goldberger, internal medicine
Eric Gustafson, pediatrics
Grace Kalish, diagnostic radiology
Marco Salazar, surgery-preliminary, urology

Virginia Mason Medical Center, Seattle

Grace Kalish, transitional

BELOW LEFT No recent show has missed a mention of former Dean David Kessler, who left Yale last year. In this year's performance, Richard Silverman, Dennis Spencer and Robert Gifford sang an ode to the departed dean, "We Lost Our Dean to San Francisco." **CENTER** Stacy Uybito, who choreographed a Tahitian dance

number, is joined onstage by classmate Craig Platt. **RIGHT** Kendra Klang and Ahou Meydani danced through the show's opening number, "La Vie Yale Med." Set in Marigolds, the scene highlights various aspects of life at the medical school. Here, chorus girls show how Yale's environment allows them to break taboos.

In a darkened Harkness, video reigns king of the second-year show

An ad from the Office of Admissions in the program for this year's second-year show congratulated the Class of 2006, then playfully added, "We were the first to spot your extraordinary talent." While watching this buoyant and risqué mid-winter revue any given year, one has to wonder if singing, dancing and writing ability might not factor into the admissions process to some small degree. For an amateur show, it's pretty good entertainment—especially for insiders who get the jokes and barbs.

This year, videography topped the list of talents behind a sophomoric (by definition) production titled *Not Another 2nd-Year Show*. The title may have been a reference to the near-total absence of plot. Digital camcorders and do-it-yourself editing software have fueled an increasing number of video sketches as part of the show each February, and the trend was strong enough this time to keep the stage clear of performers for good chunks of the evening.

Among the highlights on screen was an opening video sequence taken from *The Sopranos*, with a cigar-smoking Craig Platt navigating an SUV through the gritty highways approaching downtown

New Haven. Snippets of video enabled the show's creators to parody the movie *Top Gun*, with Associate Dean Nancy R. Angoff, M.P.H. '81, M.D. '90, HS '93 (in the role of the sexy flight instructor) playing opposite Doug Lyssy's headstrong Maverick, who rode a red Ducati motorcycle onto the stage. Another movie parody cast Davendar Khera and Timmy Sullivan as arch rivals in a sendup of the Ben Stiller/Owen Wilson comedy *Zoolander* called "Zoolabber."

A series of video interviews with faculty members including Michael J. Caplan, Susan J. Baserga, Herbert S. Chase and Lawrence J. Rizzolo allowed student Simon Best to embarrass his victims with trick questions on advanced topics in science ("If the ridge line of a house is pointing due south, and on a sunny day a rooster lays an egg precisely on the center of that ridge, which way will the egg roll?"). A *Saturday Night Live*-inspired segment gave the school's registrar the chance to bowl over unruly students in the persona of "Terry Tolson, Student Affairs Office Linebacker." And one of the most original clips was produced by Todd Ebbert, whose 2-year-old daughter, Alia, excelled as a young med student in the making in a sketch titled "Kaplan for Kids." (She correctly pointed to her frontal cortex, xiphoid process and patella.)

The live-action portion of the show included a clever piece called "Heart Sounds," patterned after gallops and murmurs; a Tahitian dance number choreographed by Stacy Uybito and Joel Hernandez; amazing break dancing by Eddie Teng; and a tender and comedic pas de deux by Craig Platt and Deepak Rao. Continuing a tradition of exploring the limits of taste, a number titled "Club Moist" probed New Haven's club scene and the full range of sexually transmitted diseases one might encounter among the clientele.

In the end, lacking a plot didn't seem to hamper the ability of *Not Another 2nd-Year Show* to charm and entertain. For the past five or six years, most of the story lines had revolved around former Dean David A. Kessler, M.D., who left Yale last June for a similar post in California. This show, too, managed a nod to Kessler in its final number, "We Lost Our Dean to San Francisco," which was sung by Angoff, Interim Dean Dennis D. Spencer, M.D., HS '77, Admissions Director Richard A. Silverman and former Deputy Dean Robert H. Gifford, M.D., HS '67.

The proceeds of the show, more than \$3,000, were donated to the Community Health Care Van in New Haven.

—Michael Fitzsosa

TERRY DAGRADI (3)





BECK INSTITUTE

Challenging Freud, starting a revolution

A residency requirement became a passion for one doctor and changed the field of psychiatry.

As a neurology resident at the Cushing VA Hospital in Framingham, Mass., Aaron T. Beck, M.D. '46, was required to do a rotation in psychiatry. But what began as an academic obligation soon became a career-altering opportunity, as Beck saw the value of using psychological tools to help some patients.

"I got stuck in psychiatry and never got out of it," Beck says today, five decades later. "In neurology there wasn't much you could do in terms of treatment in those days. What fascinated me about psychiatry was that people with neuroses could actually be treated and made better."

Beck went on to become one of the most influential figures in American psychiatry. As a young doctor in the 1960s, he challenged the theories of Sigmund Freud and triggered a revolution in psychology, founding a treatment method known as cognitive therapy. He recently received the 2004 University of Louisville Grawemeyer Award for Psychology, which includes a \$200,000 prize, for his groundbreaking contribution to the field of psychology.

"He is the latest of the great system creators in psychotherapy," says Bruce J. Rounsaville, M.D., FW '78, professor of psychiatry at the School of Medicine. "In the same tradition as Sigmund Freud and Carl Rogers, he made a major difference in the way people approach psychotherapy."

As a young psychiatrist, Aaron Beck realized that traditional psychoanalysis wasn't making his patients better. He developed an alternative therapy that revolutionized psychiatric thought.

Early in his career Beck adhered to the teachings of Freud, specifically the value of psychoanalysis. But when he began noticing that his patients weren't getting any better, he developed an alternative treatment that focused on the patient's immediate feelings and perceptions rather than unearthing repressed fears and conflicts, as is central to Freudian psychoanalysis. "Since patients are aware of their conscious thoughts, it's not as difficult [as traditional psychotherapy, which requires the exhumation of buried memories] to correct misperceptions," he says during a phone interview from his office in Philadelphia.

Cognitive therapy is based on a specific understanding of how the human mind works, Beck says. "People with certain types of neurotic disorders distort the way they view themselves. They see through a negative lens, so all experiences are twisted around to something negative. Cognitive therapy offers strategies to identify that negative distorted thinking and to help the patient correct it." Unlike adherents of Freudian psychotherapy, Beck doesn't believe one has to trace the origin of an emotional problem in order to treat it. "It's not necessary to go back to early trauma," he says. "What's important is addressing the problem that has arrived."

Cognitive therapy has been used to treat a range of patients, from depressed housewives to schizophrenics. Most recently, Beck has applied his theories to analyzing the minds of terrorists. In his 1999 book, *Prisoners of Hate: The Cognitive Basis of Anger, Hostility, and Violence* (HarperCollins), Beck concludes that the terrorist mindset is "just as distorted as those of neu-

rotic patients." He describes how terrorists make sweeping generalizations about their enemies. This, in turn, makes it easier to demonize them, so that the use of terror becomes equated, in the terrorist's mind, with survival. Beck's theories have been used by the National Center for Conciliation in Northern Ireland to help defuse tensions there.

Experts in the field of psychology at Yale agree that one of Beck's most significant contributions is that he identified treatment components that could be tested empirically, and then he conducted the tests.

"Everyone has a therapy they think works," says Alan E. Kazdin, PH.D., the John M. Musser Professor of Psychology and director of the Child Study Center. "But Dr. Beck took it to the next step. He developed a therapeutic model, a therapeutic technique and then he did the research."

Beck, who developed treatment techniques for depression, wanted to test the commonly held belief that there is a correlation between depression and suicide. Through controlled studies, which have been replicated, he was able to show that it's not depression per se, but rather feelings of hopelessness (which may or may not be associated with depression) that are predictive of suicide.

"Dr. Beck was not only able to show the efficacy of cognitive behavioral therapy for depression, but along the way, he developed tools like the Beck Depression Inventory that have become staples of clinical research," says John H. Krystal, M.D. '84, the Robert L. McNeil Jr. Professor of Clinical Pharmacology and deputy chair for research for the Department of Psychiatry. He added that Beck's work, while primarily directed toward psychotherapy research, has stimulated research on the common neurological mechanisms underlying psychotherapy and pharmacotherapy. "Many psychiatrists like myself found the emergence of cognitive behavioral therapy to be a

factor that stimulated interest in the mechanisms underlying the interactions of pharmacologic and psychosocial treatments. Studying these complex interactions has become a major research focus."

Kazdin says the treatment methods used for some aggressive and violent children at the Child Conduct Clinic, a specialty clinic affiliated with the Child Study Center, are "within the general rubric" of the techniques pioneered by Beck. "His techniques have been used primarily for adults diagnosed with depression and later, anxiety," Kazdin says, "but there are variants of it that can be effective when used for children."

"He's grounded in the research tradition," says Rounsaville. "He's committed to seeing it through, to making sure his therapies meet the standards for efficacy." Rounsaville, who is the director of the substance abuse treatment unit at Yale's psychiatry department, said a new manual prepared by the unit draws on cognitive behavioral therapy techniques to help cocaine addicts. "This derives directly from Dr. Beck's work," he says.

Beck, 83, University Professor Emeritus of Psychiatry at the University of Pennsylvania School of Medicine and a member of the Institute of Medicine and the National Academy

of Sciences, was awarded the Rhoda and Bernard Sarnat International Prize in Mental Health last year. He still has an active research unit at Penn, studying the effectiveness of treating schizophrenic patients with a combination of medication and cognitive therapy. He has written or co-written 17 books on cognitive therapy, depression and other emotional disorders.

Beck said Yale's philosophy of encouraging students to be curious and critical taught him to play with ideas and not just memorize facts. "It was the best possible system for my own personal development," he says. "I learned to have an open mind and treasure learning for its own sake."

—Jennifer Kaylin

Familiar Faces

Do you have a colleague who is making a difference in medicine or public health or has followed an unusual path since leaving Yale? We'd like to hear about alumni of the School of Medicine, School of Public Health, Physician Associate Program and the medical school's doctoral, fellowship and residency programs. Drop us a line at ymm@yale.edu or write to Faces, Yale Medicine, P.O. Box 7612, New Haven, CT 06519-0612.

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Public health alumna watches over a growing cohort of female veterans

Irene Trowell-Harris' brothers and sisters must have thought she was joking when she pointed to a plane flying over their family's farm in rural South Carolina and declared: "One day I'm going to fly and work on an airplane."

"We all laughed," recalls Trowell-Harris, R.N., M.P.H. '73, ED.D. It did seem unlikely on that day in 1954 that their 14-year-old sister would ever set foot on an airplane. The children lived in a farmhouse that initially lacked running water in Aiken, S.C., and attended an all-black school. True, if anyone from the family was going to make it, it might be Irene, the third of 11 children. "I always had a lot of responsibility. I was the one who always stayed focused, made sure everybody did their schoolwork and housework and farm work," recalls Trowell-Harris.

Trowell-Harris did find a way to fly, as an Air National Guard nurse. And she rose steadily in the Air National Guard to reach the rank of major general—the first African-American woman to achieve that rank in the National Guard. A month after retiring from the Guard in September 2001, she accepted an appointment by President Bush as director of the Department of Veterans Affairs Center for Women Veterans. Her office monitors the welfare of the 1.7 million women who have served in the Armed Forces.

To get this far, Trowell-Harris combined realism with idealism. She made decisions that would give her maximum support in overcoming the barriers of poverty and racism. She chose nursing

because she knew she would always have a job, and she sought a career in the military because its rules to some extent protected her against discrimination (although it was not until 1974 that Congress required the Armed Services to drop its 2 percent cap on women in the military).

"I wanted to be successful. ... So I decided I would use my skills to work within the system. But all along, my goal was to help change the system later on, not just for myself, but for others."

As director of the Center for Women Veterans, Trowell-Harris works to ensure that female veterans know about the benefits available to them, including inpatient and outpatient health care, counseling, insurance and home and business loans. She also works with veterans affairs committees in Congress to introduce legislation that benefits female veterans. For instance, Trowell-Harris helped back a new law that provides money and services for disabled children of women exposed to the herbicide Agent Orange in Vietnam.

Trowell-Harris notes that services to female veterans will become increasingly important as the proportion of women in the military increases. Women now constitute 6.5 percent of the nation's 26 million living veterans, and the percentage will increase for two reasons: first, because the number of women in active service has risen, to 17 percent; and second, because male veterans, mostly from World War II, are dying at a rate of 1,400 per day.

Trowell-Harris was born just two generations away from slavery: her grandfather, Jim Trowell, was enslaved until he was in his early 20s. After the Civil War, a white family took him

From a farmhouse in South Carolina, Irene Trowell-Harris went on to become a nurse and major general in the Air National Guard.



SUSAN WHITNEY

under its wing, bequeathing him 50 acres in South Carolina that Trowell-Harris' parents gradually enlarged into a 200-acre farm. Trowell-Harris was born in the farmhouse in 1939 and grew up helping her parents raise cotton, corn, peas and watermelon and tend cattle, pigs and chickens. The family would pile into a mule-drawn wagon to go to town and to attend the Mount Hill Baptist Church on Sundays.

When Trowell-Harris finished high school, she considered her options. In 1955, "African-American females had three choices: secretary, teacher or nurse." Nursing would not only provide steady work, but it would allow her to earn money as an aide while she was a student, helping finance college for her brothers and sisters. (Among them would be another nurse, a pilot, three small-business owners and a physician.)

Trowell-Harris earned her nursing diploma on a Friday in the spring of 1959, and by Monday she was working two jobs. A hurricane had destroyed the family farm, and she was helping her family financially. "I felt frustrated, but I knew if I didn't help, we would lose the whole farm." It took two years for the family to get back on its feet, and then Trowell-Harris went north. She got further training as a psychiatric nurse at New York Hospital-Cornell Medical Center in White Plains, and then relo-

cated to New York City where she would work for 20 years. There she heard from a fellow nurse about the Air National Guard.

She signed up in 1963, and a year later she flew for the first time. On weekends, during vacations and during stints of active duty, she worked as a flight nurse on jets evacuating patients from battlefields, and she saw the world.

While serving in the Air National Guard, she spent two years at Yale studying for her master's in public health. The School of Public Health recognized her in June 2001 by naming her to its Alumni Public Service Honor Roll. She also earned her doctorate in education from Columbia University.

Now, in her spare time, Trowell-Harris attends the nationally known Mount Olive Baptist church in Arlington, Va., plays racquetball and rides on the bike trails near her suburban Virginia home. She was married for a decade, divorcing in 1983, and has no children, but she has helped 14 of her 32 nieces and nephews pay for college. At the family reunions she organizes every three years, she tells them to stay in touch, to keep their lives in balance and to keep learning. She advises them "to turn obstacles into steppingstones" and that persistence pays off. One of her stories illustrates this: early in her career in the Guard, a chief nurse warned her that she'd never make it past major, "no matter how good I was. I just thanked her and said 'OK.'" She went four ranks beyond major, to major general.

"Why do you think I have worked so hard within the system?" she asks. "To get it changed."

—Cathy Shufro

"Population doctor" applying tools of genomics in quest for prevention strategies

Seven years after his graduation, **Gualberto Ruaño**, PH.D. '92, M.D. '97, isn't content to treat one patient at a time. Instead he is continuing a long-term effort to personalize medicine through a population approach. "I really think of myself as treating the world," he said.

From 1992 to 1996, Ruaño was chief scientific officer and then CEO at BIOS Laboratories, a New Haven-based company that manufactured and sold genetics research products. Then, in 1997, he founded Genaissance Pharmaceuticals, a personalized medicine company that uses genomic data to guide drug-discovery strategies. Led by Ruaño as CEO, Genaissance went public in 2000, and the company is still operating at Science Park in New Haven, but Ruaño decided the time was right for a shift in focus—away from treatment and toward prevention.

Last autumn Ruaño launched Genomas, a company that will market diagnostic systems using genetic and physiological markers to assess nonpharmacological strategies for improving patient health. Ruaño predicts that prevention of obesity will be the first significant application of this technology.

"It's time to look at prevention with the same level of seriousness as we think of drugs," he said. "Everyone knows that prevention is good, but the results have been very mixed at best. ... Now the obesity epidemic will force us in the medical profession to apply cutting-edge science to develop strategies to optimize prevention."

Gualberto Ruaño is trying to understand how genes influence the way patients respond to diet, nutrition, exercise and environmental exposures.



FRANK POOLE

The goal of Genomas is to apply genomic technologies to understanding the way genes influence patients' responses to diet, nutrition, exercise and environmental exposures. The first step is to conduct research that will be as exacting and scientifically based as the controlled clinical trials that are required when new drugs are developed. "We have to find out what the genetic markers are and evaluate them," Ruaño said. At this point Genomas has a handful of employees and is self-funded, but it has licensed research findings in exercise genetics, and in June it became a bricks-and-mortar entity. Ruaño and Hartford Hospital announced a collaboration to explore the role of genetics in the ways people lose weight and respond to exercise. As part of their collaboration Genomas moved into office and laboratory space at the hospital.

Ruaño's aim is nothing short of creating an operating system for health care of the future. "The more we can customize care based on DNA, the more we can use our understanding of genomics to improve life and create new industries." But he's not stopping there. The next step, he said, is mental health. "Psychology is also influenced by the variability in people's genes, but stay tuned. That's for the next story."

—Jennifer Kaylin



Steven Scheinman



Nicholas Spinelli and Viola Spinelli



Sanford Cockerell



David Morton



John Kelly Jr.



H. Steven Moffic



Rebecca Taub

Alumnus named dean at SUNY Upstate

STEVEN J. SCHEINMAN, M.D. '77, HS '80, FW '84, professor of medicine and pharmacology and chief of nephrology at the State University of New York Upstate Medical University, has been named executive vice president and dean of the College of Medicine.

Scheinman's research on the genetics of kidney disease, with a focus on kidney stones, has been funded by the National Institutes of Health since 1985. He has been listed in *Best Doctors in America* and *Who's Who in America*. Scheinman, who joined the faculty at the upstate medical school in 1984, is the school's 21st dean since its founding in 1834 as Geneva Medical College.

Brother and sister honored by Bridgeport Hospital

Two Yale alumni were among six individuals honored for their support of Bridgeport Hospital at a recent celebration of its 125th anniversary. Throughout his career **NICHOLAS P.R. SPINELLI, M.D.** '44, has improved the lives of thousands as a physician in private practice, on staff and later as director of medical education at Bridgeport Hospital, and as director of the School of Medicine's alumni affairs office. His sister, **VIOLA J. SPINELLI, M.P.H.** '65, began as a research assistant at Yale, went on to manage her brother's medical practice and became an associate administrator, senior vice president and chief operating officer of Bridgeport Hospital.

1930s

Albert W. Diddle, M.D. '36, professor and chair emeritus of obstetrics and gynecology at the University of Tennessee Memorial Research Center and Hospital, is a life fellow of the American Gynecological and Obstetrical Society. He is also a member of the Central Association of Obstetricians and Gynecologists, the Continental Gynecological Society and Sigma Xi, The Scientific Research Society.

1940s

Sanford F. Cockerell, M.D. '45, of Independence, Mo., retired in 2000 from his pediatric practice after 50 years. His son, Charles, and daughter, Michele, took over the practice, which has eight other physicians, two nurse practitioners and offices in two cities. Cockerell says that his activities include racquetball, gardening and duck hunting. For the past 15 years he has served as president of the Independence Hunting Club, which maintains a waterfowl marsh 35 miles from his home.

David E. Morton, M.D. '48, HS '55, who retired from the practice of internal medicine in 1993, relinquished the post of managing partner of the Lake Medical Building in Pueblo, Colo., in January. Morton's first two grand children, Hina Kojima and Akemi Ozoa, were born in 2003. He still travels frequently to Denver to visit his daughter, and to Boston, Seattle, Japan and Europe.

1960s

John J. Kelly Jr., M.D. '69, HS '71, professor and chair of neurology

at the George Washington University Medical Center in Washington, D.C., was named to the Brown University Football Team of the Decade for the 1960s. Kelly played varsity football at Brown from 1962 through 1964 as a fullback and line-backer. He also played varsity baseball. He and other teammates were honored in Providence in November, when they were introduced during half time of the Brown-Penn game and at a dinner and reception that evening.

1970s

H. Steven Moffic, M.D. '71, professor of psychiatry and behavioral medicine at the Medical College of Wisconsin, is principal investigator for a grant from the U.S. Department of Health and Human Services for the provision of marriage enrichment services to Milwaukee's refugee community.

Rebecca A. Taub, M.D. '78, formerly executive Director of biology at Bristol-Myers Squibb, was named vice president of research, metabolic diseases, at Hoffmann-La Roche in Nutley, N.J., in March. Metabolic diseases, such as diabetes and obesity, are a major research focus of the company.

Ross M. Tonkens, M.D. '74, has been appointed global scientific head of cardiovascular therapeutics for Quintiles Transnational Corp., the world's largest contract research organization, in Research Triangle Park, N.C. Tonkens was a cardiologist in Beverly Hills before moving to Las Vegas, where he founded his own clinical research site

and started a venture capital fund. While in Nevada he also served as medical director for Intracorp, a Cigna HealthCare case management subsidiary, and managed several successful statewide political campaigns.

Virginia A. Zakian, Ph.D. '75, the Harry C. Wiess Professor in the Life Sciences and professor of molecular biology at Princeton University, has been named to the National Advisory General Medical Sciences Council. Council members, who serve four-year terms, perform the second level of peer review for research and research training grant applications assigned to the National Institute of General Medical Sciences. Zakian studies the structure and replication of eukaryotic chromosomes, using yeast as a model organism.

1980s

Michael D. Burg, M.D. '87, assistant clinical professor of medicine at the University of California, San Francisco, Fresno's Medical Education Program, is on sabbatical and serving as the Emergency Medicine Residency Program director at the Onze Lieve Vrouwe Gasthuis in Amsterdam, Netherlands. This hospital was the first in that country to start an emergency medicine residency.

David Fassler, M.D. '82, clinical associate professor of psychiatry at the University of Vermont College of Medicine, testified before the Psychopharmacologic Drugs Advisory Committee of the Food and Drug Administration in February on behalf of the American Psychiatric Association (APA). Fassler, a trustee of the

**Robert Tonkens****Virginia Zakian****Mary Ann Gray****Eric Nestler****Samir Suresh Shah**

APA and vice chair of the Assembly of the American Academy of Child and Adolescent Psychiatry (AACAP), addressed the diagnosis and treatment of childhood and adolescent depression and the safety and efficacy of antidepressant medication. At the request of the American Bar Association, he also testified before legislatures in Nevada, New Hampshire and Wyoming on bills to eliminate juvenile executions. Fassler helped draft and pass the APA and AACAP position statements on the juvenile death penalty, based on scientific evidence concerning adolescent brain development.

David M. Gaba, M.D. '80, director of the Patient Safety Center of Inquiry at the VA Palo Alto (Calif.) Health Care System and professor of anesthesiology at Stanford University, has been awarded the 2003 David M. Worthen Award for Academic Excellence. This award, the highest given by the Department of Veterans Affairs, recognizes outstanding achievements of national significance in health professions education.

Mary Ann (Fagan) Gray, Ph.D., FW '87, owner of Gray Strategic Advisors, which advises public and private biotechnology companies, has joined the board of Dyax Corporation, a company that focuses on antibodies, small proteins and peptides as therapeutic products for unmet medical needs, particularly in the areas of inflammation and oncology.

Eric J. Nestler, Ph.D. '82, M.D. '83, the Lou and Ellen McGinley Distinguished Chair in Psychiatric Research at the University

of Texas Southwestern Medical Center at Dallas, has been named one of 10 recipients of the Bristol-Myers Squibb Freedom To Discover Grant. Nestler will use the unrestricted grant to identify molecular and cellular changes that drugs of abuse produce in the brain, and to characterize the genetic and environmental factors that determine individual differences in the ability of the drugs to produce these changes.

Edwin Trevathan, M.D., M.P.H., HS '84, professor of neurology and pediatrics and director of the Pediatric Epilepsy Center at Washington University in St. Louis, has completed, along with his colleagues, studies of clinical data used to diagnose epilepsy and of outcomes of epilepsy surgery among children. Trevathan and his co-investigators are conducting population-based surveillance and epidemiological studies of autism, mental retardation and epilepsy among children in St. Louis.

1990s

Brian G. Cole, M.D., M.P.H. '95, and Yale College alumnus Lucas W. Campos, M.D., have launched Ivy League Pharmaceutical Consultants and Associates in Tyrone, Pa. Their mission is to produce and interpret sound evidence for new pharmaceutical applications. Cole also has practices in Hawaii and New York, and occasionally serves as a cruise ship doctor in North Africa, the Baltics, the Mediterranean, the Caribbean and, most recently, the Hawaiian Islands. "God has blessed me and I'm very grateful!"

Jeffrey M. Dembner, M.D. '96, has completed his neurological surgery training at Stanford University Medical Center and is now in private practice in Newport Beach, Calif. Dembner is also affiliated with Hoag Memorial Hospital Presbyterian.

Jiyon Lee, M.D. '96, is in private practice at Rye Radiology Associates in Rye Brook, N.Y., after training at Columbia Presbyterian. She and her husband have two children, Serena, 3, and Aaron, 15 months in March. Lee ran the Philadelphia marathon last fall where she saw former classmate **Eric A. Gomes, M.D. '96**, an internist in Princeton, N.J. She offers to talk with any medical students or radiology residents who are interested in seeing what a private practice environment is like in Westchester.

Jonathan M. Rothberg, M.S., M.P.H. '87, Ph.D. '91, president and chief executive officer of CuraGen Corporation in Branford, Conn., was elected in February to The National Academy of Engineering (NAE). Rothberg's membership honors his contribution to the application of engineering principles to the mining of genomic information for the discovery and development of new drugs.

Samir Suresh Shah, M.D. '98, is completing fellowships in pediatric infectious diseases and general pediatrics at the Children's Hospital of Philadelphia, while working toward his master of science degree in clinical epidemiology at the University of Pennsylvania School of Medicine's Center for Clinical Epidemiology and Biostatistics.

2000s

Alicia L. Arbaje, M.D. '00, M.P.H., a Robert Wood Johnson Clinical Scholar at Johns Hopkins Medical Institutions, is focusing her research on problems related to fragmentation in the health care delivery system, in particular the difficulties that chronically ill patients face.

Michele Lynn Frascatore, M.M.S. '02, and Alan Francis Colwell were married on July 12, 2003, in Waterbury, Conn. Frascatore is a physician assistant at Middlesex Cardiology in nearby Middletown. Colwell is pursuing a master's degree in environmental science at the University of New Haven and works for GeoDesign in Middlebury as an environmental consultant.

Rocco Angelo Iannucci, M.D. '02, and Alisa Mary Marko were married on July 26, 2003, in upstate New York. Iannucci is a resident in psychiatry at Massachusetts General Hospital/McLean Hospital in Boston.

Neda N. Pakdaman, M.D. '00, has completed her residency in internal medicine at Stanford and is now an internist practicing in a multispecialty group. Pakdaman was married in May 2003.

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Martha Brochin, M.D. '88, HS '91, died at age 45 on January 22 in New Haven. Brochin was a clinical instructor in pediatrics at Yale from 1991 until her death. She also had a private pediatric practice in Hamden, Conn., for the past 12 years.

Jordi Casals-Ariet, M.D., a Yale epidemiologist who almost died of Lassa fever while seeking the virus that causes it, died in Manhattan on February 10. He was 92.

Casals-Ariet established a taxonomy of more than 10,000 viruses. He came to Yale in 1964 when the Rockefeller Foundation moved its insect-borne infections program here. In 1969 he fell ill after working with Lassa virus, a hemorrhagic fever virus named for the Nigerian village where it was first detected. Although Casals-Ariet was saved by antibodies taken from a nurse who had survived Lassa fever in Africa, he stopped his research later that year after a lab technician on his team died.

After his retirement from Yale in 1981 he worked at the Mount Sinai School of Medicine in Manhattan. His last paper was published in 1998.

Allan J. Ersley, M.D., who while at Yale in the 1950s identified a hormone used in a synthetic form to treat anemic disorders, died on November 12 in Haverford, Pa. He was 84.

Ersley was on the faculty of Thomas Jefferson University in Philadelphia for 43 years. His best-known finding occurred in 1953 when he was working at Yale. He found that the rate of red blood cell formation in normal animals increased after they were injected with blood

plasma from rabbits that had been made anemic. He determined that the anemic condition led to an increase in levels of erythropoietin, a hormone that helps to generate new red blood cells. Years later the hormone was isolated from blood and genetically engineered to treat chronic anemia in chemotherapy patients and in people with kidney failure. It was also abused by athletes who took it to enhance their performance.

Helen A. Forbes, wife of the late Thomas R. Forbes, M.D., died on October 28 in Hamden, Conn. She was 97.

Forbes came to Yale in 1945 with her husband, who served as the Ebenezer K. Hunt Professor of Anatomy and as an associate dean of the School of Medicine. She was best remembered for organizing weekday teas, a tradition that had faculty and students mingling over tea and snacks prepared by faculty wives. She also worked with first-year medical students to plan the annual variety show, *Aesculapian Frolic*.

Cornelius P. Frey, M.D., HS '44, a general surgeon and plastic and reconstructive surgeon, died on January 22. He was 90.

During his career Frey was associated with George Washington University Hospital and was a member of the American Society for Surgery of the Hand. From 1949 to 1953 he was the team doctor for the Washington Redskins.

Richard H. Greenspan, M.D., professor emeritus at Yale School of Medicine, died on February 28 after a long illness. He was 78.

Greenspan graduated magna cum laude from Syracuse University College of Medicine in 1948. After training at Michael Reese Hospital and the University of Minnesota and a fellowship at the University of Minnesota Hospitals, he served as a captain in the U.S. Air Force. In 1960, he came to Yale as an assistant professor of radiology. Four years later he became professor of radiology and chief of chest radiology at the University of California, San Francisco. Returning to Yale in 1973, as professor and chair of diagnostic radiology, Greenspan served as associate dean for clinical affairs from 1986 to 1991 and was granted emeritus status in 1994. He retired from active practice in 1999.

Greenspan was a founding member and president of the Fleischner Society and president of the Association of University Radiologists. He was an accomplished violinist and a member of the board of directors of the Neighborhood Music School in New Haven.

Frank D. Law, M.D. '49, HS '55, died on January 23 in Lewistown, Pa. He was 79.

Law served in the V-12 Navy, a college training program that began in 1943 to meet the need for commissioned officers in World War II. He was a member of the First Unitarian Church, the American College of Surgeons, the Philadelphia Academy of Surgery and the Philadelphia Committee on Trauma.

Anthony B. Minnefor, M.D., HS '65, an authority on infectious diseases, died on December 5 at his home in Morris Plains, N.J. He was 66.

After a fellowship in infectious disease at Johns Hopkins, Minnefor joined the Air Force and reached the rank of captain. He worked as a pediatrician in upstate New York and from 1980 to 1992 he was director of infectious diseases at St. Joseph's Hospital and Medical Center in Paterson, N.J. He lectured throughout the United States and Europe on infectious disease.

Robert H. Owens, M.D. '46, died on January 15 at the Mayo Clinic in Scottsdale, Ariz. He was 81. A urologist, Owens practiced medicine for more than 40 years and worked with patients at the Veterans Administration hospital in Kansas City, Mo., until shortly before his death.

Elroy R. Peterson, M.D., HS '46, died on October 7 at his home in Ames, Iowa. He was 85.

Peterson served as a physician in the U.S. Navy during World War II, first on a landing craft during the Normandy invasion and later on an aircraft carrier in the Pacific. After the war he came to Yale for a residency in internal medicine. In 1952 he joined McFarland Clinic, a physician-owned multispecialty clinic in central Iowa. He was a diplomate of the American Board of Internal Medicine and a member of the American College of Physicians and Alpha Omega Alpha.

James Radcliffe Jr., M.D. '38, died at his home in Fairhaven, Mass., on January 27. He was 93.

Radcliffe served in the Navy during World War II and was among the first physicians to arrive in Luzon in the Philippines after Allied forces retook the islands. After his honorable discharge as a lieutenant in 1946, he became the first board-certified specialist in internal medicine in New Bedford, Mass.

He founded the New Bedford Diabetes Association and served on the personnel board of the Fairhaven Visiting Nurse Association. He was chief of staff at St. Luke's Hospital in New Bedford from 1968 to 1972.

Richard H. Rapkin, M.D., HS '63, vice chair of pediatrics at the University of Medicine and Dentistry of New Jersey (UMDNJ), died of brain cancer on November 19. He was 68.

As a captain in the Army Medical Corps, Rapkin treated children of soldiers at Fort Leonard Wood in Missouri. He taught pediatrics at Rutgers Medical School, which subsequently merged with New Jersey College of Medicine and Dentistry to form UMDNJ. He was a practicing pediatrician in Somerville and pediatrician at the Somerset School in Warren for more than 30 years.

Franklin H. Schaefer, M.D., HS '49, died on February 2 in Elyria, Ohio, after a brief illness. He was 83.

After serving in the U.S. Army Medical Corps during World War II, Schaefer trained in pediatric diseases at Yale. In 1955 he became the first pediatrician serving Elyria, where he practiced medicine until his retirement in 1985. He was a member

of the Lorain County Medical Society and Elyria American Legion Post 12.

Cecil G. Sheps, M.D., M.P.H. '47, professor of social medicine and epidemiology and vice chancellor for health affairs at the University of North Carolina, died at his home in Chapel Hill of pneumonia on February 8. He was 90.

Sheps was a founding member of the Institute of Medicine of the National Academy of Sciences and a member of the New York Academy of Medicine. He was former director of Beth Israel hospitals in New York and Boston and a professor at Harvard Medical School. He also taught at the Mount Sinai School of Medicine. Sheps served with the Royal Canadian Medical Corps during World War II.

Robert E. Shope, M.D., an authority on infectious diseases and professor emeritus in the Department of Epidemiology and Public Health, died on January 19 in Galveston, Texas, of complications from a lung transplant. He was 74.

At the time of his death Shope was working at the University of Texas Medical Branch in Galveston. He went to Texas in 1995 after a 30-year career at Yale. One of the leading virologists of his generation, he led or participated in investigations of Rift Valley fever, Lassa fever, Venezuelan hemorrhagic fever, yellow fever and other diseases. He served as president of the American Society for Tropical Medicine and Hygiene and

received the Bailey K. Ashford Award, the Richard M. Taylor Award, the Walter Reed Medal and numerous other prestigious awards and citations.

Shope came to Yale in 1965 as an assistant professor of public health. He was director of the Yale Arbovirus Research Unit, director of medical education and head of the Division of Infectious Disease Epidemiology. His travels took him to almost every part of the world where mosquitoes or rodents harbor viruses.

Lawrence C. Sylvia, M.D., HS '65, former medical director of the Central Jersey Blood Center, died on November 15 at his home in Ocean, N.J. He was 70.

During his career Sylvia held faculty appointments at Tufts, Yale, Harvard and Hahnemann universities. He was director of laboratories at Monmouth Medical Center in Long Branch, N.J. He was also a fellow of the College of American Pathologists and a member of the National Board of Medical Examiners.

Arthur A. Terrill, M.D. '48, died at age 79 on January 13 at the Army Residence Community in San Antonio, Texas. A colonel in the Marine Corps, Terrill was on active duty until 1982. He was a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons.

William P. Walsh, M.D. '46, who maintained a private medical practice in New Bedford, Mass., died on December 25 at his home. He was 81.

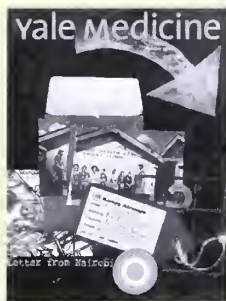
Walsh served in the Navy during World War II. He was a member of the American

Medical Association, the Massachusetts Medical Society and the New Bedford High School Football Fathers Club and a former board member of the New Bedford Boys & Girls Club.

Myron E. Wegman, M.D. '32, HS '36, M.P.H., professor and dean emeritus of the University of Michigan School of Public Health, died on April 14 in Ann Arbor, Mich., of congestive heart failure. He was 95.

For more than 40 years, starting in 1949, Wegman conducted an annual summary of vital statistics. The report, published every December in *Pediatrics*, the journal of the American Academy of Pediatrics, is a compendium of government records on births, fertility rates, infant mortality and other data. Wegman was an early proponent of broad training programs to modernize maternal and child health care. To combat infant mortality he taught rural doctors about advances in pediatrics. Before arriving at Michigan, he spent eight years with the Pan American Health Organization, a regional office of the World Health Organization. He served as president of the American Public Health Association, the Association of Schools of Public Health and the Pan American Health and Education Foundation.

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Back to Africa

Early in 2002, Karen M. Schmidt, M.P.H. '00, described for readers of *Yale Medicine* her HIV prevention work in Kenya—and how it helped her avoid a traffic ticket (See “Moving Beyond Fear,” Winter 2002). Later that year she returned to the United States to begin working as a consultant. Her subsequent assignments took her to the Philippines and Ethiopia. She also worked on adolescent reproductive health manuals for programs in Botswana, Tanzania, Ghana and Uganda.

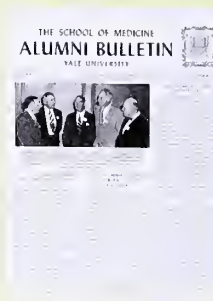
In December, a year after her departure from Nairobi, she returned to East Africa to work for the Center for Global Health and Economic Development, a joint project of the Earth Institute at Columbia University and Columbia's Mailman School of Public Health. She plans to spend about a year as a technical advisor to the Ministry of Health in Kigali, the capital of Rwanda, the site of massacres a decade ago that killed between 800,000 and 1 million people. The country is calm, Schmidt says, but people refer to “the events of 1994” and signs of the genocide remain. “The Parliament building and a few others still have bullet holes.”

Known as the *pays des mille collines* (land of a thousand hills) in French, one of three languages spoken there along with English and Kinyarwanda, Rwanda is a tiny, densely populated country just south of the equator.

“My job is to get people talking and to encourage the government to keep moving towards better health care financing mechanisms,” says Schmidt. “I work for a project called MacroHealth, which is helping countries implement the findings of the World Health Organization's Commission on Macroeconomics and Health, and I will be working a bit on the Access Project, which helps countries that are applying for or have received money from the Global Fund To Fight AIDS, Tuberculosis and Malaria.”

As often as not, she spends her days overcoming what elsewhere might seem like minor obstacles. “Massive amounts of money are flowing into health,” she says, “but it's all earmarked for projects, so if the ministry runs out of paper or fuel or can't pay its phone bill, you have to cope.”

—John Curtis



MAY 1954

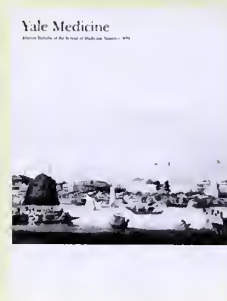
Alumni Bulletin

The Yale-New Haven Medical Center

“The Yale School of Medicine and the Grace-New Haven Community Hospital will expand their affiliated activities under a new program to be known as the ‘Yale-New Haven Medical Center.’ Both the School and Hospital will retain their independent corporate structures but will embark on a joint development program for care of patients and for medical research and teaching, thus providing southern New England with a major medical center similar in concept to the Columbia-Presbyterian Medical Center in New York City.

“The joint announcement of the medical center plans was made in February by President A. Whitney Griswold of Yale and President George S. Stevenson of the Hospital. They explained that the immediate objective of the Yale-New Haven Medical Center Plan would be the development of a program of public relations, fund raising promotion, and program development. ‘Experience of other great medical centers,’ they said, ‘shows that hospital and medical school functions and activities cannot be separated when presenting programs to the public. Strengthening and support of one of the partners materially assists the other.’

“Hiram Sibley has been appointed Director of Program Development for the new medical center. Mr. Sibley is an authority on hospital finance and has served as Executive Director of the Connecticut Hospital Association since 1948.”



SUMMER 1979

Yale Medicine

Peter Parker: Physician—Missionary—Diplomat

“It has been said that Peter Parker opened China at the point of a lancet. When he arrived in that far country in November of 1834 at the age of thirty, after a voyage of 140 days, it was at a time in history when the Chinese were giving scant welcome to Western ‘barbarians.’ Their culture was viewed with contempt, their commercial ambitions with suspicion. But in Peter Parker's lancet they discovered healing and relief from many conditions hitherto considered hopeless, and as thousands passed through the hospital he founded in Canton in 1835, it might be said that Parker did in truth open China in a way never achieved by the blasting guns of British men-of-war.

“Parker has been the subject of two biographies (G.B. Stevens and W.F. Markwick, 1896, and E.V. Gulick, 1973) and a number of shorter studies—most recently by C.G. Roland and J.D. Key (1978) and Peter Pitt (1971) and earlier, several by members of the Yale faculty: Samuel C. Harvey, Charles J. Bartlett, Eugene M. Blake, Harvey Cushing, the Rev. Kenneth S. Latourette, Levin W. Waters, and others interested in him as ‘initiator of modern medicine in China,’ ‘the founder of modern medical missions,’ ‘Yale's first ophthalmologist,’ and Commissioner to the Chinese Empire, for in addition to distinguished service as physician and missionary, he represented the United States officially in his later years in fostering friendship and understanding between the two nations. This article will focus on Parker the diplomat.”



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