

Summer 2010

Jefferson Alumni Bulletin – Volume 59, Number 3, Summer 2010

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Jefferson

ALUMNI BULLETIN

JEFFERSON MEDICAL COLLEGE • THOMAS JEFFERSON UNIVERSITY • SUMMER 2010



**COMPUTATIONAL
BIOLOGY:
TURNING DATA
INTO KNOWLEDGE**

Message from the President



Robert L. Barchi, MD, PhD

In the seven years since researchers finished mapping the human genome, a simple, surprising fact has emerged: *Homo sapiens*, the most complex organisms on Earth, have only 2,000 more genes – about 10 percent of the total – than *C. elegans*, a tiny worm without a brain.

What does that mean?

When most of us first studied biology, genes held center stage as the determinant of a wide range of conditions, from disease to eye color. Scientists dubbed the vast swaths of DNA without any coding sequences as “junk,” and we knew RNA primarily as the “messenger boy” between genes and proteins.

ENCODE, a federally funded consortium of 80 research institutions, spent four years mapping every aspect of a small part of the genome and shattered decades of thought at the foundation of those early biology lessons. The researchers discovered a complex orches-

tration of protein-coding genes and “junk,” or non-coding, DNA. Among a host of conclusions, the results indicated that most of the junk – which the research found comprises 95 percent of the human DNA molecule – is actually transcribed and it is transcribed into more RNA molecules than anyone previously thought existed. The question is why.

Research by Isidore Rigoutsos and other renowned scientists suggests answers. Researchers have long understood that a small number of RNAs act as dimmers, regulating the biological process by adjusting the intensity of a few genes. But new studies indicate that number is massive and that the primary purpose of non-coding DNA might be to create short strings known as microRNA, which act as these regulators.

This means microRNA and non-coding DNA might play a bigger role in health and illness than the genes themselves. They also might provide some of the differences that distinguish humans from worms.

Rigoutsos, who joined Jefferson this year as the director of our new Center for Computational Medicine, has concluded that instead of a few hundred microRNA, each human cell carries approximately 37,000. To complicate the process further, each microRNA can latch onto thousands of “locks” to control different genes, according to Rigoutsos’ research.

Rigoutsos, ENCODE and an increasingly larger group of major researchers make use of a relatively new field to delve into this complexity: computational biology (see story on Page 6). Computational biologists use algorithms that they design to help sort and analyze ream upon ream of data that no human could possibly absorb. They take their hypotheses to “wet-lab” biologists, who use the information as road maps.

As in the case with Rigoutsos and microRNA, computational biology often leads to hypotheses involving large numbers, requiring lab biologists to test the theories on

random samples. But many scientists, leery of conclusions based on computer information, balk when confronted with the radical results that computational biology can produce and hesitate to accept the findings based on random sampling.

We have entered a revolutionary era of biology, where research uncovers new complexities virtually every month. The discoveries, a good number overturning decades of thought, have left many reeling. But they also have opened new avenues for pursuing cures, prevention and the promise of personalized medicine.

These avenues demand a new systems approach that examines integrated and interacting networks of genes, proteins and biochemical reactions, not individual parts in isolation. Given the complexity of these networks, even the most skeptical lab researcher will come to appreciate the value of computational biology in making sense of the maze.

In research – as well as in clinical medicine – today’s complexities need interdisciplinary approaches. Computer biologists will not supplant their wet-lab brethren; the two fields will work together, creating a synergy that will benefit us all.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert L. Barchi".

Robert L. Barchi, MD, PhD

President

Thomas Jefferson University

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The Dean's Column

This year's JMC graduation ceremony, held on May 24 in the imposing Kimmel Center for Performing Arts, was as impressive as ever. My message to the Class of 2010 graduates, as they sat there poised to take the Hippocratic Oath, centered on physician empowerment in relation to their patients and the social spheres that surround them.

Sociologists using letter chains have proven that virtually every member of mainstream society is within six degrees of all others, a concept popularized two decades ago by John Guare's play *Six Degrees of Separation* and the trivia game *Six Degrees of Kevin Bacon*. Two researchers – Nicholas Christakis, MD, PhD, of Harvard and James Fowler, PhD, of the University of California-San Diego – have built on this notion in another dimension. By mining data from the federal government's massive Framingham Heart Study, they have framed the "Three Degrees of Influence Rule."

According to their research, outlined in a series of journal articles and in the new book *Connected*, everything each of us does or says ripples through our social network, influencing our friends (the first degree), our friends' friends (the second degree) and the friends of our friends' friends (the third degree). In other words, each of us can influence many thousands of people we do not even know. By identifying clusters within these social networks, Christakis and Fowler show that networks hold a powerful sway over all members in relation to a vast range of behaviors and attitudes, from gaining weight to over-imbibing, from happiness to political views and even to creativity.

So I suggested to our graduates that they see themselves as shapers of social networks. It is not just the patient in front of them whose life they can touch. Their influence extends to the patient's family and friends and beyond, three degrees out. While the tendency is to think in terms of each patient, one at a time, the reality is that over the course of decades, those patients add up, and each physician has his or her own three degrees of influence – translating into remarkable reach for each one of us. And importantly, as physicians, we can

leverage the fact that "goodness" and "caring" themselves can move through social networks.

But given the assembly line of lives parading before the modern-day physician, driven by demands from third-party payers and group practice administrators, is it really possible to touch the lives of one's patients, to even get the "first degree" of the social network chain going? A snippet of time, set amidst a patient's whole lifetime – what impact could that conceivably have?

Here I invoked Marcel Proust and Virginia Wolf. Time is not linear; all moments are not equivalent; some moments imprint themselves on our psyche to a much greater extent than others. And in particular, it is those moments when there is heightened awareness, such as when we brush up with our own mortality. Physicians are there for just those moments – the 10 minutes when a patient learns he has an illness he will have to cope with for the rest of his life, the 5 minutes when the patient learns that her biopsy was negative and she's been given a fresh lease on life. And what the physician communicates in those fleeting windows of time, when the patient's adrenaline is going and heart is pounding, is what will likely cascade down through the patients' own social networks to their friends and their friends' friends.

This message is no less profound for long-time physicians than for the graduates who took the oath that May afternoon. As we are buffeted about by healthcare reforms and payers of all types and inclinations, we must remind ourselves that in the human dimension, our power remains almost limitless. The words we say, the guidance we offer, the kindness we show, even during the briefest of encounters, can ripple through social networks and the larger society within which each of our patients is embedded.

Sincerely,



Mark L. Tykocinski, MD
Anthony F. and Gertrude M. DePalma Dean
Jefferson Medical College

Visit the JMC alumni Website,
www.jefferson.edu/jmc/alumni, to
see a video of Dean Tykocinski's
commencement address.

Everything each of us does or says ripples through our social network, influencing our friends, our friends' friends and the friends of our friends' friends.



Findings

Researchers Find Breast Tumor Suppressor

Jefferson researchers have found that a cluster of microRNA molecules suppresses the spread of breast cancer, bringing scientists closer to a novel therapy to prevent breast cancer metastasis.

MicroRNAs are non-coding RNA molecules found in wide areas of the genome that, either singly or in clusters, regulate gene expression. Links between microRNA and human disease have only recently been made.

In the *Proceedings of the National Academy of Sciences*, the researchers say that the microRNA cluster known as 17/20 inhibits the ability of breast cancer cells to secrete chemicals that eventually allow the cancerous cells to break free and spread.

“This is the first evidence of suppression of breast cancer cell migration, invasion and metastasis by microRNA through regulation of factors secreted by the cancer cells,”

said the study’s first author, Zuoren Yu, PhD, assistant professor of cancer biology.

“Previous studies have implicated microRNA in cancer, but being within the cell, they are hard to target as a cancer therapy. By demonstrating the microRNA work via secreted factors, and identifying these factors, the findings bring us closer to novel, rational anti-metastasis therapy for breast cancer,” said the study’s lead investigator, Richard Pestell, MD, PhD, director of the Kimmel Cancer Center at Jefferson. “Metastatic breast cancer occurs in 20 to 30 percent of women with breast cancer, and although traditional treatment therapies may slow down tumor growth, metastatic breast cancer still has a poor survival.”

Pestell, Yu and their team had already shown that 17/20 is often missing or substantially reduced in breast cancer tumors when compared to cancer-free tissue. Their prior studies revealed that the cluster inhibits the cyclin D1 oncogene. Over a decade ago, Pestell’s laboratory was the first to show that cyclin D1 has a critical role in promoting breast tumor growth in animals. “Our research and that of other laboratories are consistent with a growing understanding

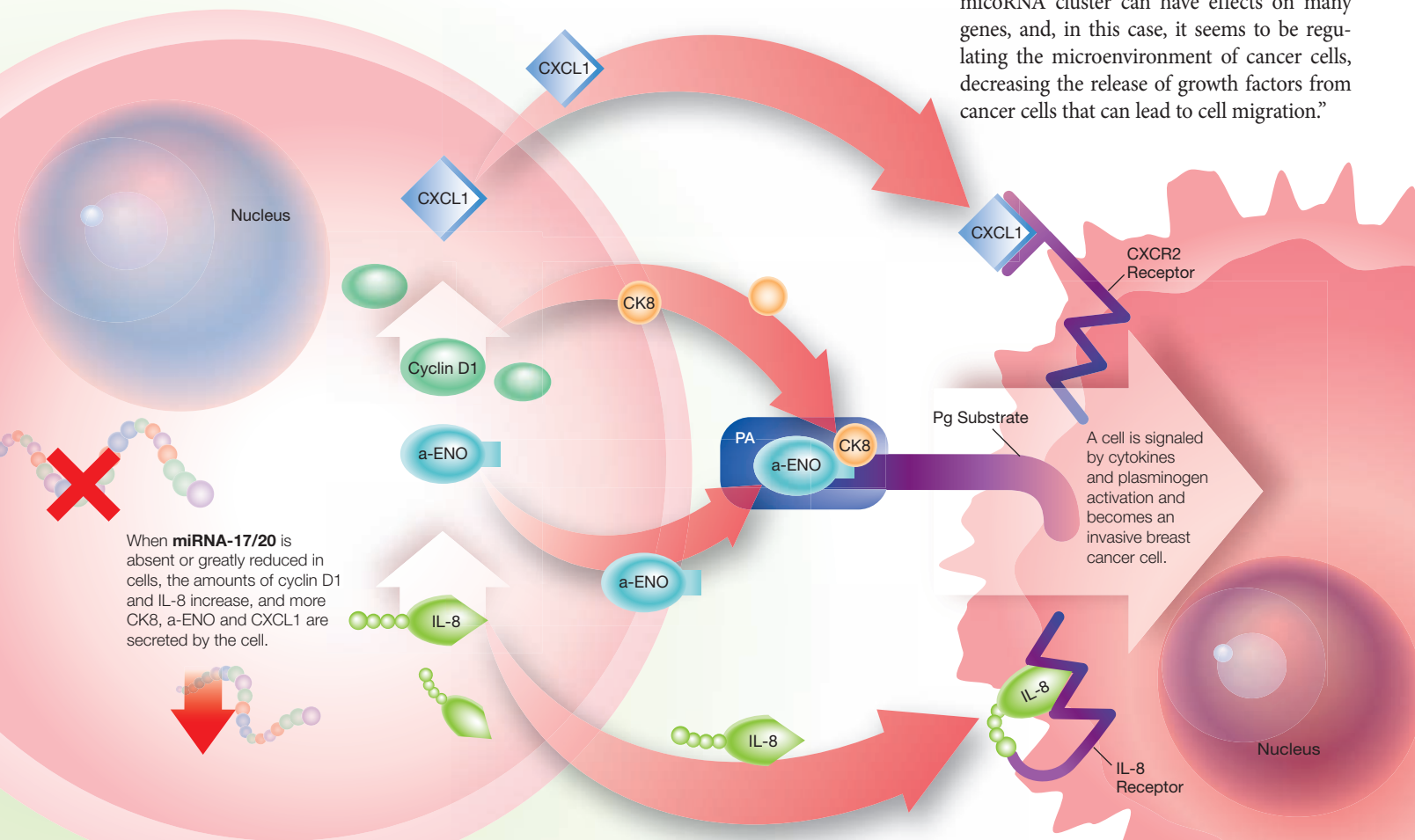
“This is the first evidence of suppression of breast cancer cell migration, invasion and metastasis by microRNA through regulation of factors secreted by the cancer cells.”

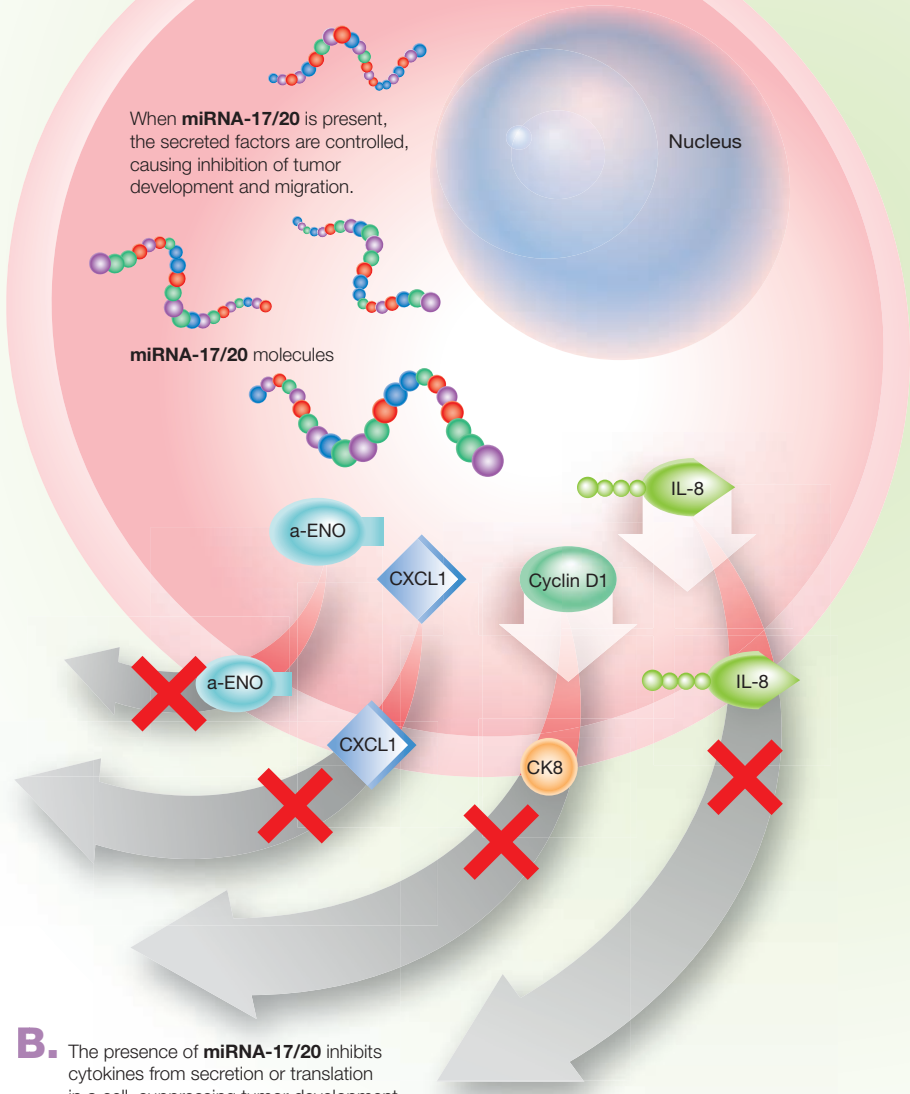
– Zuoren Yu, PhD

that microRNA functions as a tumor suppressor in breast cancer,” Yu said.

In this study, the researchers found that the microRNA cluster has the added function of decreasing migration, invasion and metastasis. “We know that one microRNA or a single microRNA cluster can have effects on many genes, and, in this case, it seems to be regulating the microenvironment of cancer cells, decreasing the release of growth factors from cancer cells that can lead to cell migration.”

A. miRNA-17/20 is missing from cells.





B. The presence of **miRNA-17/20** inhibits cytokines from secretion or translation in a cell, suppressing tumor development and metastasis.

When the researchers delivered extra 17/20 clusters to laboratory breast cancer cells, the over-expression blocked key signals that would have allowed cells to detach from each other.

“We found a pathway of cross-talking between cancer cells mediated by microRNA,” Yu said. “This sheds light on the importance of cell microenvironment for cancer invasiveness and metastasis.”

The researchers are now planning to test the effect of delivering 17/20 clusters to animal models of human breast cancer.

The work was supported by grants from the National Cancer Institute, the Marian C. Falk Medical Research Trust and the Pennsylvania Department of Health. The authors declare no conflicts of interest.

Cell migration, invasion and metastasis are triggered.

<http://www>



Dissecting Wikipedia and the PDQ


Think information on Wikipedia is suspect? Think again, according to researchers at the Kimmel Cancer Center at Jefferson.

Investigators led by Yaacov Lawrence, MD, assistant professor of radiation oncology, compared cancer information on Wikipedia, which volunteers write, and the patient-oriented section of the National Cancer Institute’s Physician Data Query, or PDQ, a comprehensive peer-reviewed cancer database.

For both Web sites, inaccuracies were extremely rare: Less than 2 percent of the information on either site contradicted textbooks, and no difference existed in depth of coverage. Both sites poorly discussed controversial aspects of cancer care.

The PDQ came out ahead in one area: readability. It was written at a level suitable for a 9th grader, while Wikipedia was written at a level suitable for a college student, according to the study.

“Overall our results are reassuring,” Lawrence said. “On the one hand, Wikipedia appears to be extremely accurate; on the other, the resources invested in the creation and upkeep of the PDQ are clearly justified.”



**COMPUTATIONAL
BIOLOGY:
TURNING DATA
INTO KNOWLEDGE**

GGTG
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AT

Isidore Rigoutsos sat in a Philadelphia office in October 2002 watching a colleague draw a schematic of RNA interference, at the time not well understood but now known to be a key component in the regulation of cellular processes. The biologist looked up from his sketch and asked, “If we were to give you the sequence of a microRNA, could you find the messenger RNAs it targets?”

Years later, the simple question would lead to unexpected conclusions with very important implications.

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Since its inception three decades ago, computational biology has become the ultimate “interdisciplinary” field, combining the talents of biologists, computer scientists, chemists, engineers, mathematicians and physicists. Computational biology projects involving pattern analysis often begin with a researcher posing a challenge that computer scientists – many also familiar with biology – take up. They develop complex algorithms based on hunches as well as fact and then use the software to sort through reams of data that no human mind could process.

They return to the biologists with hypotheses and clues gleaned from the patterns that they discovered. Instead of searching through a haystack, the biologists now have, essentially, a 3-inch box to comb for answers.

Without the computational scientist, the researchers might need many decades to identify areas of greatest interest; without the biologists, the computational scientists would have only unverified hypotheses.

The journey that Rigoutsos began that afternoon in Philadelphia clearly illustrates the synergy that comes from mixing “dry” and “wet” laboratories.

+++++

When the human genome was finally mapped in 2000, scientists thought that cures

were just a few years away. But by the time Rigoutsos took up his colleague’s challenge, the picture had become far more complex: Researchers were beginning to realize that RNAs, once considered ancillary molecules, played a far more prominent role and that one special type of short RNAs of about 22 letters, microRNAs, could help modulate the expression of genes by latching onto corresponding RNAs, or mRNAs. The discoveries meant that microRNA/mRNA interactions could play critical roles in diseases ranging from cancer to diabetes.

Heading home to New York from his Philadelphia visit in 2002, Rigoutsos began formulating his strategy for the algorithm he would develop for finding microRNA targets. At the time, he had a hunch that the problem might appear deceptively trivial.

Working on it sporadically, fitting it in here and there with the rest of his work at IBM’s Computational Biology Center, he rejected the tactic other researchers favored – building on available experimental data – because he knew he would merely find more of the same. Instead, he searched for patterns in the 700 microRNA sequences that researchers had already identified in humans, animals and plants. He thought that patterns, if they existed in these sequences, might capture salient features. Not even Rigoutsos was prepared for what he would discover using this novel approach.

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Rigoutsos has been working in computational biology “since the field’s Mesolithic period,” as he likes to joke. He was a co-founder of IBM Research’s Computational Biology Center in 1992 and went on to make the organization the epicenter for the use of pattern discovery in computational biology. In 1996, he and one of his students developed the trailblazing Teiresias algorithm, which introduced the concept of “position list intersection,” the base of many sequence pattern discovery algorithms developed since.



there. On Liu's recommendation, Rigoutsos met with Bing Lim, MD, PhD, a senior group leader at the Genome Institute and an associate professor at Harvard Medical School. Lim welcomed the chance to collaborate.

Among several other projects, Lim's lab specializes in stem cell differentiation, a perfect candidate for Rigoutsos' hypotheses. But first, Yvonne Tay, a graduate student, and Andrew Thomson, a senior scientist in Lim's lab, used a simpler approach, luciferase assays, to check Rigoutsos' predicted key-lock pairs. In these assays, luciferase, an enzyme that glows, would be combined with the lock of a predicted key-lock pair. Then the key would be introduced in sufficient quantities. If Rigoutsos's predicted key-lock pair were right, then the luciferase would dim.

Focusing on a few microRNAs only, Rigoutsos randomly chose 220 key-lock pairs from among the few thousand that his algorithm had predicted. His Singaporean colleagues confirmed that in 75 percent of the cases, the keys and locks fit as predicted and the luciferase dimmed. Not only did the experiments lend credence to Rigoutsos' computations, but they also uncovered evidence that a given key could open about 100 times more locks than commonly believed at the time, a stunning figure.

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Moving on to mice, the team chose to focus on three genes – Nanog, Oct4 and Sox2 – responsible for maintaining the pluripotency of embryonic stem cells. The lab's earlier work had identified three microRNAs of interest: miR-134, miR-296 and miR-470. Rigoutsos' computations suggested that the three microRNAs preferentially targeted not areas in the 3'UTR, as the paradigm at the time speci-

fied, but in the amino acid coding regions of the Nanog, Oct4 and Sox2 messenger RNAs.

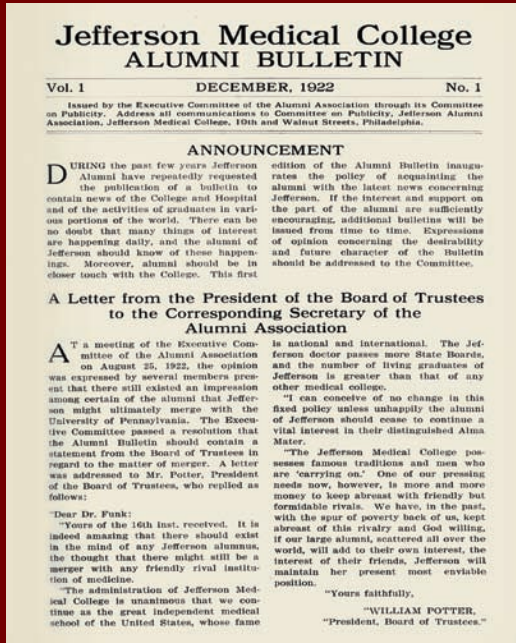
By now, the team had grown accustomed to proving the unexpected, but the setting was so complicated and the required experiments so involved that Tay, Thomson and Rigoutsos took nearly two years to complete the project. In the end, they proved that the three microRNAs did indeed target Nanog, Oct4 and Sox2 at multiple locations within the amino acid coding regions. One more unexpected finding surfaced: The majority of those targeted locations did not exist in the human counterparts of the three genes, suggesting that, for this setting at least, extending findings from mouse genome studies to human may be more complicated than anticipated.

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Biologists agree that Rigoutsos, Tay and Thomson changed the microRNA targeting paradigm by discovering targets in the part of mRNA that codes for amino acid sequences. Other findings – the discovery that a key can potentially open thousands of locks; and that animal and human genes, though identical in many aspects, can differ in ways not previously imagined – will likely have a profound influence on research for years ahead. These discoveries started with computations but came to fruition in the lab – a true demonstration of the power of marrying computation with biology.

Rigoutsos often tells people that they will find both bad news and good news in his work. The bad news? Cellular processes seem to be far more complex than anyone imagined even a few years ago. The good news? Combining the power of computers with the imagination and skills of researchers in "wet" labs is making the work to prevent and cure disease far less daunting. ■

WITHOUT THE COMPUTATIONAL SCIENTIST, THE RESEARCHERS MIGHT NEED MANY DECADES TO IDENTIFY AREAS OF GREATEST INTEREST; WITHOUT THE BIOLOGISTS, THE COMPUTATIONAL SCIENTISTS WOULD HAVE ONLY UNVERIFIED HYPOTHESES.



Premiere issue: December 1922



Fall 1970



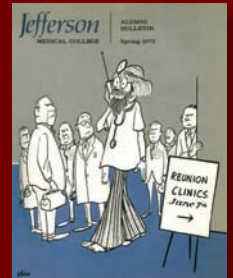
June 2001



Fall 1980

Alumni Bulletin

Entire Back File Now Available Online



Spring 1972



Winter 2010



Spring 1974



January 1950



September 2002



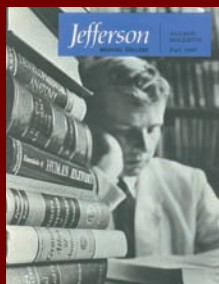
Summer 1973



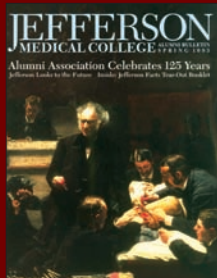
Summer 1969



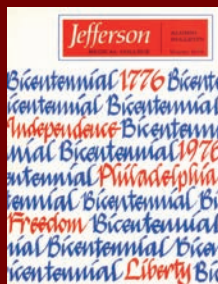
Winter 1990



Fall 1967



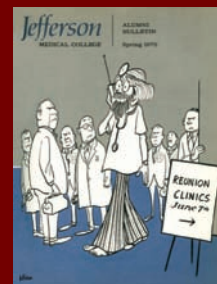
Spring 1995



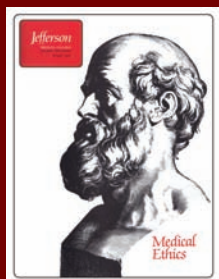
Winter 1976



May 1950



Spring 1972



Winter 1987

Ever wonder what went on at Jefferson before you arrived? Need to jog your memory about your years there? Want to look up a story you saw a few years back? A few key strokes now will give you online access to every issue of the *Jefferson Alumni Bulletin*, thanks to staff from the Scott Memorial Library.

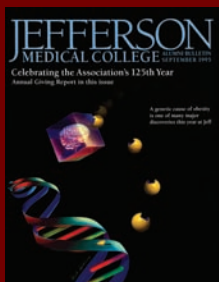
Issues from 1922 to 2009 can be found at http://jdc.jefferson.edu/alumni_bulletin. The more recent issues are at <http://www.jefferson.edu/jmc/alumni>.



December 1960



Spring 1985



September 1995

Volume 1, Issue 1 of the *Bulletin* was published in December 1922, highlighting growth across curricula and campus. For nearly a century, the magazine has continued to chronicle clinical and research progress as well as student, faculty and alumni achievements.

Headlines offer a snapshot of the decades:

1930: Curtis and College buildings constructed at 10th and Walnut streets

1940: Jefferson expands bedside teaching facilities and requirements

1950: Methodist Hospital affiliates with Jefferson

1960: JMC students receive increased biostatistics training to aid in data analysis

1970: Physiology practice and curriculum evolve at Jefferson

1980: Faculty examine stress in relation to disease

1990: Physicians recall experiences as first women at JMC

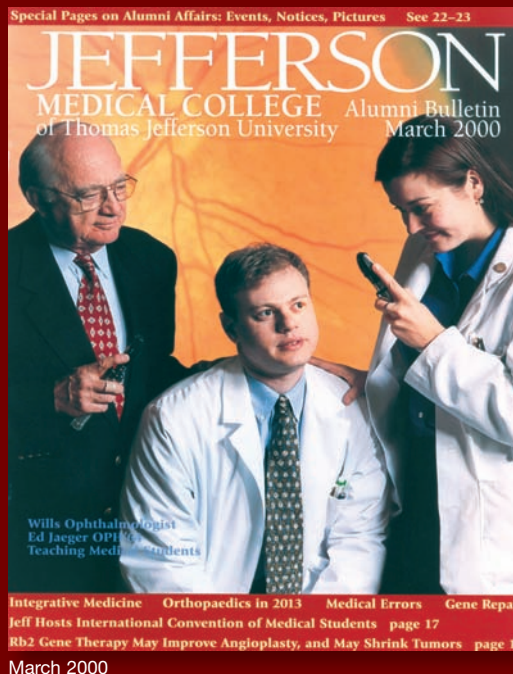
2000: Center for Integrative Medicine broadens medical mainstream

2010: Patient-centered medicine transforms future of family practice

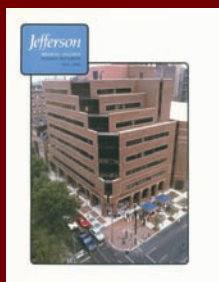
Alumni can also view College yearbooks from 1878 to 1936 at http://jdc.jefferson.edu/jmc_yearbooks.



Summer 2007



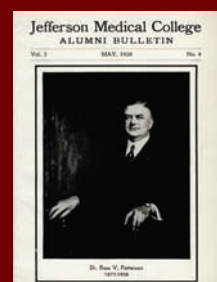
March 2000



Fall 1986



September 1999



May 1938



HEALTHCARE REFORM:

What Does It Mean for Physicians and Medical Students?

As its name implies, the Patient Protection and Affordable Care Act was designed to safeguard patients as they navigate the U.S. healthcare system. But what does the legislation do for today's physicians? Since President Obama signed H.R. 3590 into law March 23, Jefferson faculty members have joined their peers in analyzing how health-care reform might affect their practices and in voicing their opinions.

Medicare and Medicaid Payment Changes

Many physicians will see Medicare payments increase, including:

- Ten percent bonuses from 2011 to 2016 for office, nursing facility and home visit services for physicians in family medicine, internal medicine, pediatrics and geriatrics whose charges for these services represent 60 percent or more of their total Medicare fees.
- Ten percent bonus payments for general surgeons who operate in underserved areas – such as inner cities and rural communities – from 2011 to 2016.
- A reduction in Medicare's geographic payment adjustment – the system that bases physician payments on the cost of maintaining a practice – so physicians in rural and low-cost regions will see their income rise in 2010 and 2011.
- Extensions to incentives that draw bonuses for physicians who participate in Medicare's Physician Quality Reporting Initiative – a voluntary program that pays physicians for reporting their practices' quality measures, such as risk assessments, screenings, interventions, medication management and lab test orders.

A week after signing the law, the president signed a separate bill, the Health Care Education Affordability Reconciliation Act, H.R. 4872, increasing Medicaid payment rates for primary care doctors to match Medicare payment rates – which are higher – in 2013 and 2014. H.R. 4872 ensures federal funding to cover states’ costs associated with meeting this clause.



HOWARD K. RABINOWITZ, MD

Director, Jefferson’s Physician Shortage Area Program
Ellen M. and Dale W. Garber Professor of Family Medicine

“Reimbursement rates for primary care in general and especially in rural areas have lagged substantially behind those for other physicians over the past decade, and these new incentives are too small to make up for that erosion.

“But we have turned a corner. This widening gap in reimbursements is coming to an end, and in coming years we will likely see more significant payment increases for primary care and rural physicians. In the meantime, the current bonus payments will certainly help physicians already working in rural and underserved areas but are probably not sufficient to draw physicians to these areas for the first time.”

Focus on Prevention

The new law emphasizes preventive care, requiring insurance companies to fully cover services such as vaccinations, standard checkups and screenings. New group and individual health plans must provide these services at no additional charge to patients – meaning they will not be subject to a co-payment or deductible – by 2018. States will receive extra money starting in 2011 to finance certain government-recommended preventive services.

Some analysts predict this focus on preventive care will create a demand for more primary care physicians and nurses as more people seek standard checkups and screenings such as cholesterol checks and mammograms. Hospitals and clinics could need more diagnostics staff, such as technicians who operate MRI and CAT-scan machines. More pharmacists might be needed to field new customers who previously could not afford medications. Growth in these areas also would create a demand for more administrative workers.



DAVID B. NASH, MD, MBA

Dean, Jefferson School of Population Health
Dr. Raymond C. and Doris N. Grandon Professor of Health Policy

“Increased preventive care would improve quality of life and make sense financially, decreasing the costs associated with chronic conditions.

“An ongoing movement toward patient-centered medical homes will help manage physician shortages, should they arise. I see a future in

which not all primary care appointments need to be with physicians. Physician assistants, nurse practitioners and other healthcare professionals often are able to meet patients’ needs on their own. The physicians will serve as team leader but will not see every patient.”

New Patient Population and Its Effects

The law extends coverage to more than 30 million Americans who previously had no health insurance. Starting this fall, providers cannot deny coverage to children with a pre-existing condition, a provision that expands to everyone in 2014. Insurance companies also must allow children to stay on their parents' insurance plans until age 26.

By expanding coverage, the law makes it less likely that hospitals and physicians will continue absorbing the cost of caring for uninsured patients. According to the American Medical Association, physicians provided \$24 billion in charity care in 2008 – much of it to uninsured patients. (Jefferson University Hospitals provided \$74 million in charity care in fiscal year 2008-09.)

“It’s a myth that only uninsured people use emergency departments as their sole health-care providers. About 70 percent of the patients who visit Jefferson’s ED are insured, and a great majority of them have concerns that could be handled at a primary care office. People often use the emergency department

LINDA DAVIS-MOON, CRNP, MSN

Executive Director for
Strategic Initiatives,
Department of Emergency Medicine



for general care not because they lack insurance but because primary care providers aren’t accessible enough. It can take weeks to get an appointment, and not many offices offer extended evening or weekend hours, so people with jobs, families and other obligations fall back on the ED because it’s always open. It’s not uncommon for me to see a patient with multiple non-emergency complaints using the ED as a one-stop shop for basic issues like rashes and back pain.

“I predict that the new law will actually increase crowding in the ED, because the number of primary care providers is not going to rise as much of the number of insured patients is. We might see some increase in general practitioners, but it won’t be as drastic as the increase in insured patients. An expanded pool of people clamoring for time with physicians and nurse practitioners will push more people toward the ED when they are unable to secure appointments. This phenomenon was observed in Massachusetts after it made health insurance mandatory in 2006. I don’t see why the trend wouldn’t continue throughout the rest of the country now.”

Medical Student Incentives

The Association of American Medical Colleges estimates that the average medical student leaves school more than \$150,000 in debt. While the new law creates jobs, medical students often pursue careers in high-paying specialties instead of primary care, where shortages are predicted. According to the AAMC, the number of medical students in the United States who went into family medicine dropped 25 percent from 2002 to 2007.

The new law addresses both educational costs and the shortage in primary care physicians. Provisions include an increase in student loan forgiveness programs as well as scholarships for students specializing in family medicine or pediatrics and for those willing to work in underserved regions. The law allocates \$125 million for medical student scholarships and other financial assistance this year alone.

Starting in 2011, hospitals across the United States will receive funding to enhance their primary care training programs. The law also establishes a new grant program to support rural-focused training programs at medical schools nationwide. Faculty from Jefferson's Physician Shortage Area Program played an integral role in the design of these grants, providing research and assistance as the law was developed.



CLARA A. CALLAHAN, MD
 Clinical Associate Professor of Pediatrics
 Senior Associate Dean for Admissions and Student Life
 Lillian H. Brent Dean for Students

“While debt is an issue for all medical students, I don’t believe money steers students toward specific fields as often as people might think. Med students prioritize working in a field they love over paying off debt; they are driven by passion for what they do.

“But this legislation provides something more important than funding for students in primary care fields: a psychological boost. The law underscores the importance of family physicians and makes clear that their services are of great value, and that will make the field attractive to students. If you feel that a field is admired, you are drawn to it. I am proud to be a general pediatrician, and this law will make other generalists feel great about their fields. The law’s emphasis on primary care will show students that family medicine, pediatrics, internal medicine and geriatrics are fields worth pursuing.”

Prior Authorization

Many insurance companies require “prior authorization” for costly procedures such as MRIs and CAT scans, meaning that physicians must call insurers ahead of time to justify the tests. If an insurer does not approve a procedure, a patient can skip it or pay out of pocket.

Starting this fall, the law bars health plans from requiring prior authorization for emergency services only. Insurers still can deny claims for a variety of reasons, frustrating many physicians who want to ensure proper care for their patients.



GENO J. MERLI, MD
 Senior Vice President and Chief Medical Officer, Thomas Jefferson University Hospital
 Director, Jefferson Center for Vascular Disease

“Prior authorization creates an especially cumbersome obstacle for specialists whose patients are primarily referred. Our staff spends a lot of time getting approval upfront just for us to see a patient, and then it takes additional time to seek approval again if we recommend tests or require a follow-up visit.

“Another problem is that patients are often restricted to obtaining tests at specific hospitals. Testing sent from other hospitals may be inadequate or low quality. Without having the appropriate testing to confirm a diagnosis, a plan of management as requested during the consultation cannot be rendered. This only has the potential to increase healthcare costs, since patients will not be treated appropriately.

“Congress had an opportunity to address all of these issues but went for low-hanging fruit – like Medicare payments – to pass the law quickly. Revising the unfortunate insurance authorization process would have been like pulling weeds for them.” ■





Jefferson Faculty

Janet Larson: Pioneering Fetal Gene Technologies

As Jefferson's chief of neonatology, Janet Larson, MD, works to prevent, diagnose and treat genetic disorders – both inside and outside of the womb.

Larson, who came to Jefferson in 2008, has spent the past 15 years studying fetal gene therapies, particularly focusing on cystic fibrosis. Standard gene therapy, which involves inserting a healthy sample of the faulty gene that causes CF, has failed as a treatment because the immune system destroys the genes before they can repair the flaws. Larson has discovered that introducing gene therapy in utero does not trigger this response, presenting a window of opportunity to cure CF before birth.

In 2002, she received a patent for identifying genetically modified lung cells with immunoprotectant properties when she added a working version of cystic fibrosis transmembrane conductance regulator – the gene that causes CF – to developing mouse fetuses that were engineered to have the disease. The mice were cured for life, a breakthrough that holds great potential for preventing CF and related diseases in people.

Larson has achieved national renown for her research. While serving as chief of neonatology at Stony Brook University Medical Center, she received the 2007 Albion O. Bernstein, MD, Award for her work in fetal gene technology. The award, presented annually by the Medical Society of the State of New York, recognizes a physician who has made outstanding contributions to medicine or the prevention of disease. *New Scientist* magazine has called her a “gene healer.”

Larson recently shared her views about Jefferson and her field.

Q: What drew you to Jefferson?

A: Simply put, Jefferson enjoys a reputation as a leading national institution, and I wanted to be a part of such a highly regarded clinical and scientific community.

Q: What is your teaching philosophy?

A: When I was in medical school, professors focused mainly on disease pathophysiology. It's very encouraging that medical education has evolved to incorporate professionalism, accountability and communication into standard curriculum. I highlight these principles by teaching by example.

Q: What inspired your focus on neonatology?

A: The differences in physiology between infants and older children or adults interest me. I also like simultaneously working as a generalist and a specialist. I'm a generalist in that I care for infants with varying illnesses, but I'm a specialist in that I only treat patients in the first six months of their lives. My expertise is bound by time, not organs.

Q: What advances do you hope to see in your field in the next few years?

A: I hope to see an emphasis on quality improvement. I founded Jefferson's NICU Quality Improvement Committee, a team of physicians, nurses, physical therapists, dieticians and pharmacists working to improve communication among disciplines and collaborate in treating patients. In the future, I would like to see individual silos of care replaced with a more fluid, interdisciplinary system.

Q: What has been your proudest achievement?

A: I'm proud of my development of a fetal gene therapy for cystic fibrosis and of the possibility that a therapy I pioneered could someday prevent such a debilitating disease.

Q: Has your time at Jefferson lived up to your expectations?

A: My experience has exceeded my expectations – I am surrounded by superb colleagues, from physicians to nurses to basic scientists. After only two years here, Jefferson already feels like home.

OnCampus



Dicker



Levin



Werner-Wasik



Morrione



Halpern

People

Dicker Appointed Radiation Oncology Chair

Adam P. Dicker, MD, PhD, an international authority in radiation oncology, drug development and the treatment of prostate cancer and brain tumors, has been appointed chair of the Department of Radiation Oncology.

Dicker co-leads the radiation research and translational biology program at the Kimmel Cancer Center at Jefferson. In addition, he serves as director of the Christine Baxter Research Laboratory for Experimental Cancer Therapies at Jefferson Medical College. He has been a principal investigator of a significant number of “first-in-human” developmental therapeutic trials involving novel signal transduction agents and radiation therapy.

Levin Receives Gold Medals

David C. Levin, MD, emeritus professor and former chair of the Department of Radiology, received a gold medal from the Radiological Society of North America in December and another from the Society of Interventional Radiology in March. Levin has now won recognition from every major radiology organization in the country, a rare accomplishment.

CALLING ALL WOMEN!

To celebrate the 50th anniversary of female students arriving at Jefferson, the *Bulletin* is collecting 150-word observations from alumnae about the College or their careers.

Submit your entries to *Bulletin* editor Jana Moore by e-mail at jana.moore@jefferson.edu or by mail at Jefferson Foundation; 925 Chestnut Street, Suite 110; Philadelphia PA 19107.

The deadline is Nov. 1.

Headlines

Brain Tumor Radiotherapy Effective

Patients who received hypofractionated stereotactic radiotherapy for recurrent brain cancer lived a median of five months longer and suffered none of the common side effects seen with the use of chemotherapies and targeted therapies, Jefferson researchers reported online in the *Journal of Clinical Oncology*.

The scientists said hypofractionated stereotactic radiotherapy, or H-SRT, set a new bar for the treatment of recurrent gliomas.

“In many centers, patients with tumor progression within six months after the initial conformal radiotherapy are denied a second radiotherapy course based on the assumption that their prognosis is poor,” said senior author Maria Werner-Wasik, MD, professor of radiation oncology. “Our findings support the recommendation that essentially all patients with progressive high-grade gliomas who are in good shape and have tumors amenable to local radiotherapy should be considered for H-SRT.”

Clue to Spread of Bladder Cancer

Researchers at the Kimmel Cancer Center at Jefferson have identified a protein that they believe pushes bladder cancer to become invasive – and deadly.

“This could offer us a novel molecular target to treat patients with this cancer in order to prevent metastasis,” says the lead investigator, Andrea Morrione, PhD, a research associate professor of urology.

In the June issue of *The American Journal of Pathology*, the researchers say the discovery is particularly promising because about a dozen agents targeting the protein already are undergoing clinical testing.

No Benefit Seen in Surgery Prep

Mechanical bowel preparations offer no benefit to patients undergoing a pancreaticoduodenectomy, according to study by Jefferson researchers in the August issue of *Surgery*.

The scientists analyzed clinical data from 100 operations on patients undergoing mechanical bowel preparations and from 100 who received a preoperative clear liquid diet. No significant differences existed in the rates of pancreatic fistula, intra-abdominal abscess or wound infection.

Non-invasive Coronary Procedure

Non-invasive coronary computed tomography angiography is a cost-effective alternative to invasive cardiac catheterization for patients who have positive stress test results but a less than 50 percent chance of actually having significant coronary artery disease, according to a Jefferson study appearing in the May issue of the *American Journal of Roentgenology*.

“At a 50 percent prevalence of coronary artery disease, we found that performing coronary computed tomography angiography before cardiac catheterization results in an average cost saving of \$789 per patient with a false-negative rate of 2.5 percent and average additional radiation exposure of 1–2 mSv, which is minimal,” said the study’s lead author, Ethan J. Halpern, MD, professor of radiology.

Protein in Prostate Cancer Metastasis

Stat5, a signaling protein previously found to be key to survival of prostate cancer, is also involved in metastasis, according to a Jefferson study published in the online edition of *Endocrine-Related Cancer*.



Nevalainen



Kastenberg

“This study indicates it could be one of the key players in pushing prostate cancer to spread,” said Marja Nevalainen, MD, PhD, associate professor of cancer biology, urology and medical oncology. “This paper is sure to open up a new avenue of research. Fresh approaches are needed since there are no effective therapies for prostate cancer that has metastasized.”

Colon Prep Studied

Colonoscopy preparation drugs administered the same day as the procedure are equally effective to those begun the previous night and lead to fewer complaints from patients about abdominal pain, sleep loss and workday interference, according to a Jefferson study published in the online edition of the *American Journal of Gastroenterology*.

“The most important thing to consider during a colonoscopy is clear images,” said lead investigator David Kastenberg, MD, of the Department of Gastroenterology and Hepatology. “That’s why the colon prep is so important. Recently, the American College of Gastroenterology endorsed split dosing of the colon prep, which means patients need to experience all the side effects of a colon prep both at night and on the morning of the colonoscopy. What we looked at was can we administer the colon prep the same day and get equal results without the side effects? The answer is yes.”



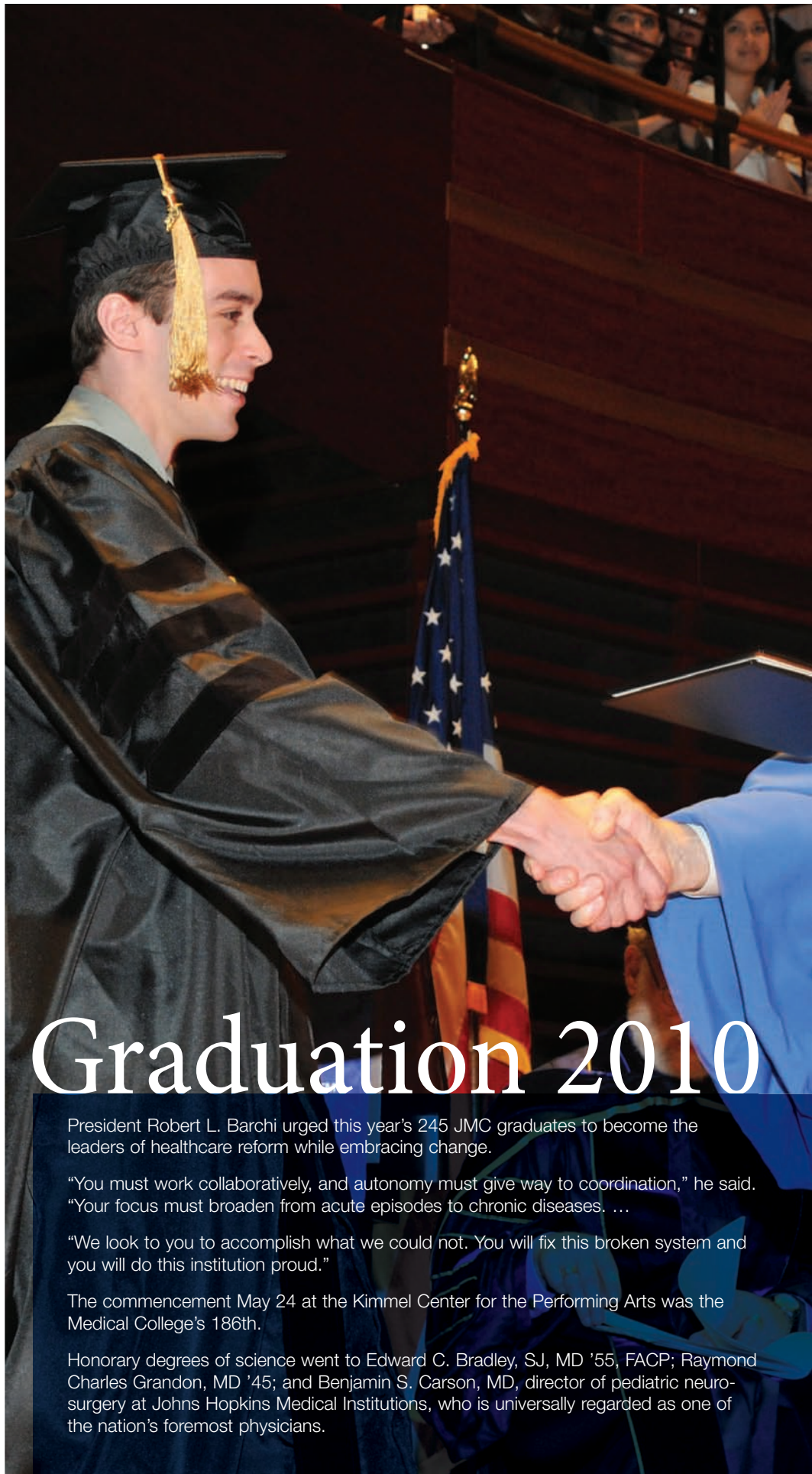
Celebrating Education

For a publicity photo celebrating higher education, 21 graduating students from Jefferson joined Philadelphia Mayor Michael Nutter and dozens of other students from throughout the area May 14 at the Philadelphia Museum of Art. The program included encouraging words from entertainer Bill Cosby and prizes, with Gillian Blaney of the School of Health Professions taking home a Phillies 2008 World Series poster signed by Manager Charlie Manuel.

Mixing Medicine, Humor

Howard H. Weitz, MD '78, the Bernard L. Segal Endowed Professor in Clinical Cardiology, and Geno Merli, MD '75, the Ludwig Kind Professor of Medicine and chief medical officer for Thomas Jefferson University Hospital, mixed humor with facts May 13 during “Consult Talk,” a takeoff on NPR’s Car Talk. The breakfast session was the last of four in Jefferson’s first Grand Rounds for Community Leaders, a program highlighting issues and the latest developments in health care.





Graduation 2010

President Robert L. Barchi urged this year's 245 JMC graduates to become the leaders of healthcare reform while embracing change.

"You must work collaboratively, and autonomy must give way to coordination," he said. "Your focus must broaden from acute episodes to chronic diseases. ..."

"We look to you to accomplish what we could not. You will fix this broken system and you will do this institution proud."

The commencement May 24 at the Kimmel Center for the Performing Arts was the Medical College's 186th.

Honorary degrees of science went to Edward C. Bradley, SJ, MD '55, FACP; Raymond Charles Grandon, MD '45; and Benjamin S. Carson, MD, director of pediatric neurosurgery at Johns Hopkins Medical Institutions, who is universally regarded as one of the nation's foremost physicians.



Dean Expands Faculty Awards

Dean Mark Tykocinski, MD, expanded the faculty awards this year to recognize members with an extraordinary commitment to education, community service, research and the practice of medicine.

More than 120 department chairs, award winners and guests joined the dean and University President Robert L. Barchi, MD, PhD, for the award presentations May 5 during a dinner at the Union League. The honored faculty members included 27 recognized for "excellence in education" and seven for faculty mentoring.

The new awards and recipients:

Career Educator Award:

Bary B. Goldberg, MD, radiology.

Community Service Award:

James Plumb, MD, MPH,
family and community medicine.

Award for Innovation in the Biomedical Sciences: Bernard Dietzschold, DVM,
microbiology and immunology.

Research Career Achievement Award:
Walter Koch, PhD, translational medicine.

Early Career Investigator Award for Distinguished Achievement In Biomedical Research: Walter Kraft, MD, pharmacology and experimental therapeutics.

Outstanding Clinician Award:

- Robert Perkel, MD,
family and community medicine.
- Anthony J. DiMarino Jr., MD,
gastroenterology and hepatology.
- Edmund Pribitkin, MD, otolaryngology.
- Sharon Segal, DO, radiology.

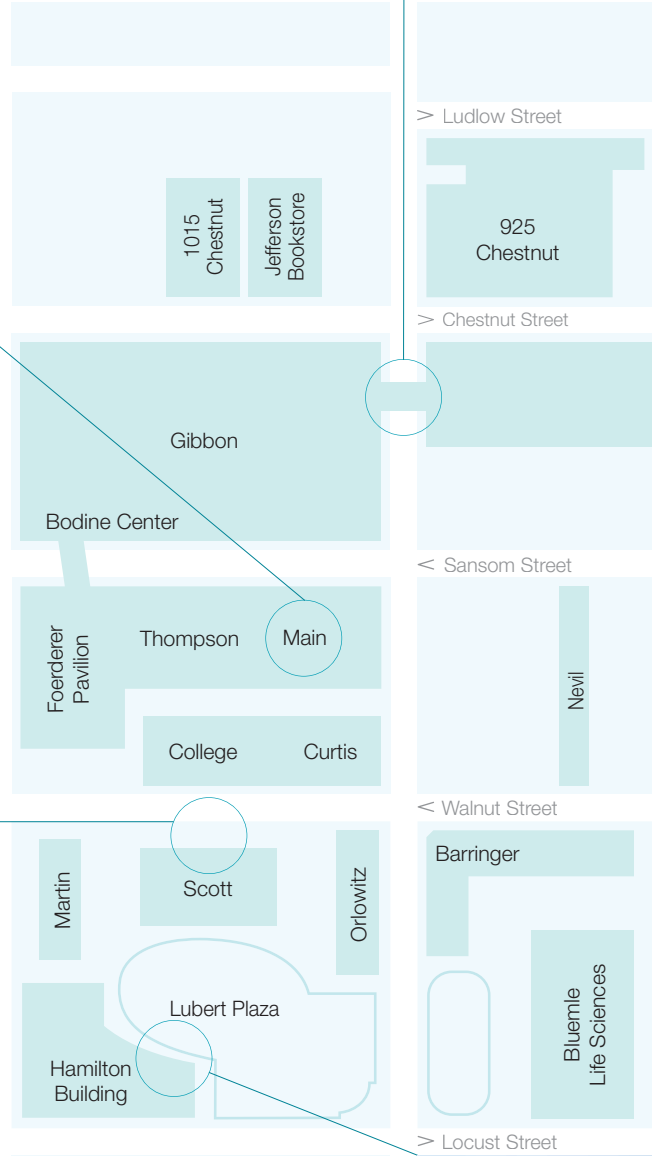


In less than six years, Jefferson has been transformed from a loose collection of buildings undistinguishable to outsiders into a vibrant campus with new buildings, a grassy plaza and lush landscaping.

A covered bridge bearing Jefferson's new logo spans a parking garage and the campus' main hospital building, Gibbon.

Street banners, building signs and maps, all sporting "Jefferson blue," tie the campus together and make navigation easy for visitors.

Renovations at the hospital, including the Emergency Department at right, meld the latest technology with conveniences for staff and comforts for patients.



The University replaced large expanses of concrete in front of the Scott Building and the dormitories with flowers and trees, turning a gritty street scene into an urban oasis.



Medical Office Building

11th Street

10th Street

The Dorrance H. Hamilton Building, which houses a state-of-the-art clinical skills center, opened in 2007; it was the first University building constructed on campus since 1991, when Bluemle Life Sciences opened across 10th Street. The Sidney and Ethal Lubert Plaza gives students a grassy area for studying and socializing on campus.

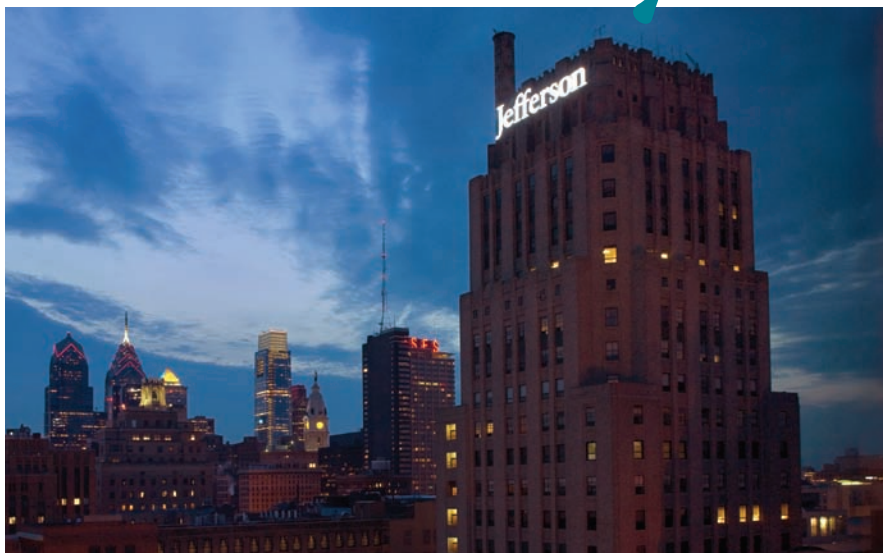


Jefferson Today

25 S. 9th

833
Chestnut East

Ben
Franklin
House



Edison

Sheridan

909
Walnut

901
Walnut

Jefferson Hospital
for Neuroscience

Wills Eye Institute

Walnut
Towers



A new sign atop the 24-story Edison Building defines the campus for miles. Jefferson's latest construction project, the 11-story Health Professions Academic Building and the Jefferson Clinical Neuroscience Center (at left), will connect to Edison to the north and incorporate the neurosurgery outpatient center to the west. Floors 2 through 4 will house clinical neurosurgery and neurology offices; floors 5 through 11 will comprise administrative and faculty offices for the four schools: Health Professions, Nursing, Pharmacy and Population Health.



New paint and signs plus refurbishment to George Sugarman's 1980 sculpture, *Four Wall Reliefs*, updated the outside of the Jefferson Hospital of Neuroscience.

ClassNotes

'46

James V. Mackell reports that he has served as his JMC class agent for 64 years. He lives in Stone Harbor, N.J.

Henry A. Seidenberg is former dean of the Institute for Psychoanalysis of Chicago and continues to practice psychiatry and psychoanalysis full time. He lives in Winnetka, Ill.

'49

Stuart W. Hamburger has retired from his position as clinical professor of surgery at the University of Michigan. He and his wife, Sylvia, split their time between Franklin, Mich., and Highland Beach, Fla. Their grandson, Brandon, entered JMC this summer.

Sheldon Rudansky has retired after 42 years of solo urologic practice. He continues to work as a physician adviser and case manager and enjoys spending time with his five great-grandchildren. Rudansky lives in Garden City, N.Y.

Patrick T. Bering, from Jefferson. Bering's son, **Joseph P. Bering Jr.**, is a JMC Class of 1988 alumnus.

'57

Ronald J. Yadusky has written a book, *The Truth Collector*, about personal transformations. He lives in Apex, N.C.

'58

Richard E. Eshbach and his wife, Lillian, are retired and live in Greece.

'59

Joseph A. Besecker is working as a research associate for a financial firm. Besecker enjoys good health and loves fishing.

'61

David K. Subin is retired from orthopaedic surgery practice and doing consultation work for the U.S. Social Security Administration. He and his wife, Elissa, live in San Diego and enjoy traveling and spending time with their son, a physician in Ithaca, N.Y.

W. Scott Taylor retired to Bloomington, Ind., after 40 years of practicing obstetrics and gynecology in New Mexico and Maryland. He and his wife have five children and five grandchildren, and Taylor says he is relieved that none is interested in a career in medicine.

'62

Stephen Gosin received the 2010 Shore Memorial Hospital Surgical Chairman's Award in recognition of his professional conduct, dedication and positive impact during more than 40 years of service at the hospital. Gosin lives in Mays Landing, N.J.

'64

Anthony M. Harrison spends several weeks a year at the University of Pittsburgh Medical Center

Hospital in Palermo, Italy. His permanent home is in Pittsburgh.

'70

Marilyn S.P. Kershner lives in Coronado, Calif., and practices diagnostic radiology with Kaiser Permanente. She plans to retire next year.

Richard Nemiroff is a clinical professor of obstetrics and gynecology at the University of Pennsylvania School of Medicine. An article he co-wrote about the importance of testing pregnant women for lipid disorders appeared in the November 2009 issue of *Contemporary OB/GYN*. Nemiroff lives in Moorestown, N.J., and enjoys spending time with his four grandchildren.

John Reichell and his wife, Linda Jefferson, RN '69, are enjoying retirement and celebrating the birth of their first grandchild. Reichell is looking forward to his reunion and extends many thanks to **Peter Scoles, MD '70** for his planning efforts.

'71

Alexander T. Baskous is chair of the family practice department at Alaska Regional Hospital. He

EVENTS

Annual Meeting of the American Society of Anesthesiologists

Sunday, Oct. 17
6 – 7:30 p.m.
Hilton San Diego Bayfront,
Aqua Room 311
San Diego

Annual Meeting of the American Academy of Physical Medicine and Rehabilitation

Friday, Nov. 5
7 – 9 p.m.
Grand Hyatt Seattle,
Menzius Room/6th Floor
Seattle

Annual Meeting of the Association of American Medical Colleges

Sunday, Nov. 7
6 – 7:30 p.m.
Marriott Wardman Park,
Balcony C
2660 Woodley Road NW
Washington, D.C.

JMC Alumni Association Ski Trip and CME Program

(See Page 22)
Jan. 31 – Feb. 4
Viceroy Snowmass
Snowmass Village, Colo.

'51

Victor F. Greco is retired from his surgery practice and recently was appointed professor of surgery at the Commonwealth Medical School in Scranton, Pa. Greco lives in Drums, Pa.

'52

Albert L. Babcock performs skin cancer screenings at senior centers near his home in Simsbury, Conn. He has many fond memories of voluntary reconstructive surgery practice with Project Esperanca, an organization that brings medical care to villagers along the Amazon River in Brazil.

'53

Norman Gladsden is 88 and retired from medical practice. He lives in Miami and looks forward to his next JMC class reunion.

'55

Robert E. Berry has written a book, *The Association of Program Directors in Surgery: A History of Origin and Maturation, 1966–2001*, chronicling the growth of the APDS and its work to improve surgical education. Berry lives in Roanoke, Va.

'56

Joseph P. Bering Sr. lives in Lebanon, Pa., and is celebrating the recent graduation of his grandson,



has been practicing in Anchorage for 30 years and considers it a wonderful place to raise a family.

Donald A. Bergman received the Master of the American College of Endocrinology Award during the American Association of Clinical Endocrinologists 19th Annual Meeting and Clinical Congress in Boston in April. The award recognizes a clinical endocrinologist who has been cited by peers as a distinguished practitioner, role model and contributor to endocrinology. Bergman lives in Tenafly, N.J.

Paul M. Fernhoff lives in Atlanta and works as a medical geneticist at Emory University, where he serves as medical director of the Lysosomal Storage Disease Center and the Jewish Genetics Disorders Center. His son, Nathaniel, just completed a doctorate in biochemistry at Berkeley and is beginning a post-doctoral fellowship at Stanford University.

'74

John P. Lubicky became chief of pediatric orthopaedics and professor of orthopaedic surgery at the West Virginia University School of Medicine last December. He lives in Morgantown, W.Va.

'75

Joseph J. Korey still enjoys delivering babies in his 60s. He and his wife, Linda, live in Reading, Pa., and remain happily married after 37 years. They are proud grandparents of a grandson whom Korey hopes to see in the JMC Class of 2035.

'77

R. Bradley Hayward lives in Beaver, Pa., and keeps busy with his general surgery practice. He hopes to see all of his classmates at their 2012 reunion.

'79

Jeffrey C. Brandon has been appointed acting chair of the radiology department at the University of South Alabama College of Medicine. He lives in Theodore, Ala.

Gary Alan Mohr has been practicing family medicine in rural Colorado since 1982. He and his wife, Christina, live at the base of the Sangre de Cristo Mountains and have eight children and six grandchildren. Mohr has climbed many of Colorado's "fourteeners," mountains with peaks exceeding 14,000 feet, as well as Mount Kilimanjaro. He also has trekked to Everest Base Camp on a medical mission.

'80

Susan C. Greve left her obstetrics and gynecology practice in Wilmington, Del., after 25 years. She now lives in Portland, Ore., with her new husband. Both are retired from medicine and enjoy skiing, cycling, hiking and rafting.

Mark J. Krawitz lives in Warren, N.J., and is proud of his son, **Steven Krawitz, MD '10**, for graduating from Jefferson Medical College. Steven is staying on to do his residency at Jefferson.

Gary T. Loh and his wife, Janell, have been living in Wheeling, W.Va., for 25 years and have three children, two birds, one gecko and 100 guitars. Loh is a radiologist at Wheeling Hospital.

'83

Timothy Walsh announces that his oldest son, Kevin, graduated from West Virginia University Medical School in May and has started his residency in neurosurgery at the Cleveland Clinic and his youngest son, Matt, started at Jefferson Medical College this summer, Class of 2014.

'89

Charles D. Tullius lives in Jefferson Hills, Pa., and invites you to join the Facebook page for the Jefferson Medical College Class of 1989.

'91

Steven R. Chmielewski serves on the board of directors for the Pennsylvania Radiological Society and recently was elected to a four-year term on the board of the Wilson School District in Berks County, Pa. He lives in Sinking Spring, Pa.

'92

Orlando J. Cicilioni Jr. is the chairman of plastic surgery for the Florida Hospital System. He and his wife, Lori, have three children and are expecting triplets in October. They live in Winter Park, Fla.

Randy Miller was named president-elect of the Florida Society of Plastic Surgeons. Miller was also appointed to the board of directors of the Dade County Medical Association for the third consecutive two-year term and is a member/delegate of the Florida Medical Association. As a long-standing clinical faculty member, Miller also is developing a new aesthetic surgery clinic for the

Louis C. Blaum Jr., MD '72: Newest TJU Trustee

The University's newest trustee knows the value of a Jefferson education more than most.

Louis C. Blaum Jr., MD '72, followed his father by 31 years as a Jefferson graduate, and Louis C. Blaum III continued the tradition in 1997. Blaum's daughter, Emily, recently completed her occupational therapy degree in the Jefferson School of Health Professions.

Alumni elected Blaum this spring to represent them on the University's board of trustees for three years. He replaces Peter V. Scoles, MD '70, who served six years. At Scoles' last meeting, board members passed a resolution conveying their "sincere respect and deepest gratitude" for his contributions.

A breast and thoracic surgeon, Blaum practices with the Community Surgical Group in Kingston, Pa., and has been affiliated with numerous hospitals in and around his hometown of Wilkes-Barre. Although his father's work as a surgeon always interested him, he did not become passionate about the field until he began working as an orderly in the operating room at Wilkes-Barre General Hospital between his freshman and sophomore years at the University of Notre Dame.

"What was only supposed to be a summer job ended up determining my entire life's path," he said. "Watching surgical procedures fascinated me, but I was also inspired by the way the doctors and nurses worked as a team. They reminded me of all of the sports teams I had played on during my youth, but instead of uniforms, they wore scrubs."

Encouraged by physicians at the hospital – particularly **Burton Benovitz, MD '55** – Blaum resolved to go to Jefferson.

In addition to his surgical practice, Blaum has served as an associate professor in thoracic surgery at the State University of New York-Binghamton and at Hahnemann Medical College, now Drexel University College of Medicine. Last fall, he became only the 10th person in the country to receive full certification in stereotactic needle biopsies of the breast, a diagnostic procedure used to determine the cause of radiographic abnormalities in breast tissue.

Blaum looks forward to his tenure as a TJU trustee. "Whenever possible, I try to use my skills and abilities to help others. It's nice to be in a position to give back to Jefferson after all the University has done for me and my family," he said.



Eliav Barr, MD '86: From Cardiology to Cancer Research

Eliav Barr, MD '86, had been working in cardiology for more than a decade when his employer asked him to help develop the world's first HPV vaccine. He agreed – after looking up what HPV meant.

Barr's unfamiliarity with human papillomavirus was understandable; it has nothing to do with heart health. Instead, HPV, the most common sexually transmitted infection, causes virtually all cervical cancer cases. Barr ended up leading the pharmaceutical team that created Gardasil, which protects against the most dangerous strains of the virus.

For Barr, the transition from cardiovascular research to vaccines and infectious diseases came easily. He had experience running large-scale clinical trials for antiplatelet drugs, used to treat heart disease.

"I was always interested in public health, and instead of the small steps we were taking in cardiovascular research, I wanted to make a quantum leap," he said. "My time in cardiology convinced me that it's better to prevent than to treat, whenever possible."

As vice president of oncology clinical research at Merck & Co. Inc., Barr spearheaded the design and execution of the clinical program for Gardasil, a massive undertaking that entailed 25 clinical trials involving nearly 30,000 patients across 34 countries on five continents.

He also led discussions with the Food and Drug Administration, the European Medicines Agency and the World Health Organization regarding the vaccine's licensure. The FDA approved Gardasil for American females ages 9 to 26 in 2006. Barr also helped expedite approval for the vaccine in more than 100 other countries, including Canada, Mexico, Australia, New Zealand, Brazil, Taiwan and 27 members of the European Union. More than 50 million doses have been distributed worldwide.

The WHO reports that every year, a half million women are diagnosed with cervical cancer. Killing nearly 300,000 women annually, the disease is the second leading cause of cancer death in women. Gardasil targets two HPV types that cause more than 70 percent of cervical cancer cases and two additional types that cause 90 percent of genital warts. The vaccine also protects against HPV-related cancers that affect men; the FDA approved Gardasil for men in 2009.

"Preventing cancer was our top priority, but we added protection against genital warts to make the vaccine more appealing to teens and young adults who might feel immortal in their youth and not view cancer as a real threat," Barr said.

Last year, the Pharmaceutical Research and Manufacturers of America honored Barr and his colleagues with its Discoverers Award, the pharmaceutical industry's highest scientific honor. Barr continues to study HPV and is exploring a second-generation vaccine to cover more HPV types as well as working to improve therapies for a variety of cancers.

"Having a major impact on public health has been a very exciting and emotional experience," Barr said, "but when it comes to preventing and treating cancer, the work is never done."

University of Miami. He and his wife, Jiyon Ko-Miller, have developed an anti-aging skincare line. The Millers have two children: Alexa, 5, and Ryan, 4. They live in Coconut Grove, Fla.

'94

Raymond K. Chung and wife Barbie had a great time catching up with classmates at the 15th year class reunion.

Vidu Garg lives in Columbus, Ohio, with his wife, Ami, and their two children. He practices pediatric cardiology at Nationwide Children's Hospital and is an associate professor of pediatrics at Ohio State University, where he runs a laboratory studying the genetic basis of congenital heart defects.

'97

John E. White is working in Boise, Idaho, for Primary Health.

'99

Nabile Safdar lives in Elkridge, Md., and has been appointed principal investigator of the bioengineering initiative at the Sheikh Zayed Institute for Pediatric Surgical Innovation. Safdar's research focuses on improving pre- and post-surgical evaluation through biomedical imaging and computational sciences and improving the training of radiologists and surgeons in these advanced methods, including the use of computer-assisted surgery.

'00

Michael A. Baumholtz practices and teaches in the division of plastic surgery at Temple University. He lives in Wynnewood, Pa.

'01

Rajeeb Kumar Guharoy and wife Sruba welcomed the birth of their second child, Siona Chloe, on Jan. 14. Kai, now 2½, and Siona keep them busy. Guharoy continues to

work in emergency medicine at Methodist Hospital in Houston.

'03

John and Thea Dalfino live in Albany, N.Y., and welcomed their second son, Roman Joseph Dalfino, on April 18. John recently began practicing endovascular neurosurgery at Albany Medical Center.

'04

Andrew S. Bilinski is serving in the U.S. Army Medical Corps as an active-duty medical doctor. He writes: "Thank you for the great education. Support our troops."

Leah and Michael Jacobson welcomed Baby No. 2 in August. Leah is going back to get her master's degree in public health at Yale University this year.

'09

Andrew J. Boryan reports that he and former classmates **Waleed Shah** and **Rob Oleszewski** made some great memories over the past year during their internships at Reading Hospital. Boryan lives in Chambersburg, Pa.



Honor for Family Physician

James Devlin, MD '85, pictured at his office in western Pennsylvania, recently won the Family Physician of the Year Award from the Pennsylvania Academy of Family Physicians. After his residency, Devlin returned to his rural hometown of Brockway to practice. "It has been a pleasure to be there for my patients as both physician and friend," he said.



It's now easier than ever to show your Jefferson Spirit!

Visit the Jefferson Medical and Health Science Bookstore online "Jefferson Shop" at www.jefferson.edu/bookstore to purchase Jefferson t-shirts, sweatshirts, sweatpants, shorts, caps and gift items such as mugs, water bottles, key chains, car decals and more!



InMemoriam

'39

Louis Leventhal, 95, died Oct. 6 in Long Beach, Calif. Leventhal served as a flight surgeon in the U.S. Army for nearly five years. He was board certified in general and thoracic surgery, having trained at Newington Veterans Hospital in Connecticut and at Harbor General Hospital in Torrance, Calif. He retired to Compton, Calif., in 1976. Leventhal is survived by his wife of 64 years, Isobel, and three daughters, including **Janet B. Leventhal, MD '79**.

'41

Robert H. Peters Jr., 93, of Shavertown, Pa., died Sept. 28, 2009. Peters served in the U.S. Army Medical Corps during World War II in the South Pacific as a regimental surgeon and then practiced family medicine and surgery in Forty Fort, Pa., for 40 years. He

was instrumental in establishing a full-time emergency room physician service at Nesbitt Memorial Hospital in Kingston, Pa. Peters is survived by his wife of 67 years, Celia; one daughter; one son; seven grandchildren; and five great-grandchildren. He was preceded in death by a son.

'46

Robert A. Grugan, 89, of Bonita Springs, Fla., died April 27. He was a World War II veteran who served in the U.S. Navy. Grugan was chairman of radiology at Baystate Medical Center in Springfield, Mass., and a clinical professor of radiology at Tufts University School of Medicine. He is survived by his wife of 40 years, Sally; one daughter; four stepchildren; 12 grandchildren; and five great-grandchildren. He was preceded in death by a son and a stepdaughter.

'52

Lawrence I. Bonin, 87, died Dec. 5 at home in San Clemente, Calif. Bonin served in the U.S. Army in the Philippines as a medic at the end of World War II. He is survived by his wife, Edee, and three children.

'53

Roy H. Hand, 84, died April 22 at his home in Abington, Pa. A former naval officer, he practiced general, orthopaedic, vascular, colorectal, oncologic and trauma surgery. He served on the surgical staffs of Abington Memorial, Warminster and Germantown hospitals for 40 years and taught surgery at Jefferson Medical College. He also was an accomplished pianist. After retiring from surgical practice, Hand worked as a tree farmer outside of Atlanta. He is survived by his wife of 56 years, Liz; two daughters; two sons; and six grandchildren.

He was preceded in death by a daughter.

'63

Edward A. Teitelman, 72, of Collingswood, N.J., died April 14. Teitelman had a private psychiatry practice in Camden, N.J. He was preceded in death by his wife, Mildred, and is survived by two sons.

James J. Kelly, MD '39

James J. Kelly, MD '39, known as a hero to Burmese in World War II and as a compassionate, skilled physician to suburban Philadelphians, died May 8 at the home he shared with his wife of 60 years in Drexel Hill, Pa.

As a major with the Army Medical Corps in Burma during World War II, Kelly used his skill to remove stray bullets from elephants, precious commodities employed to build the 770-mile Burma Road into China. As symbols of their gratitude, residents each time offered Kelly an egg, a luxury to locals and soldiers alike, but each time he declined, according to his wife, Carolyn.

In 1958, Kelly joined nine other physicians in opening Haverford Hospital, later Haverford Community Hospital and then Mercy Community Hospital, which closed in 2002. As part owner of the hospital, he was a member of the board of directors and chair of the general practice department.

Kelly maintained a family practice in Darby until 1988. He also worked as medical director at the Leader Nursing Home in Yeadon and as medical adviser at the St. Francis Country House in Darby.

Kelly was a member of the American Academy of Family Physicians and a diplomat of the National Board of Medical Examiners. He was a member of the Delaware County, Pennsylvania and American Medical associations. He held great pride in his medical alma mater, earning membership in the Presidents' Club for his generous gifts to Jefferson's annual fund. He was buried with his stethoscope and in the suit he wore to his graduation 71 years earlier, a Presidents' Club rosette on his lapel.

In addition to his wife, Kelly is survived by his sister, Sister Catherine Kelly, OCSO, and nieces and nephews.

'54

Barry Halpern, 81, died on June 27. He lived in Philadelphia. He is survived by his wife, Arlene, and three children.

C. Walter Hassel Jr., 83, died March 23 at Hospice of Lancaster County in Mt. Joy, Pa. Hassel served on the staff at Lancaster General Hospital, where he was chief of the division of dermatology for many years. He retired in 1990. He is survived by his wife of 31 years, Jean; three sons; one stepson; 11 grandchildren; and one brother. He was preceded in death by a son.

'59

Richard S. Kolecki, 77, of Cherry Hill, N.J., died June 9. Kolecki served in the U.S. Air Force and trained in pathology at Rochester General Hospital. He was a clinical assistant professor at Jefferson Medical College and a scientific and medical advisory board member of the Cord Blood Registry Program. He is survived by his wife of 50 years, Phyllis; three sons, all JMC graduates, **Richard '88, Robert '89, Paul '92**; and 10 grandchildren.

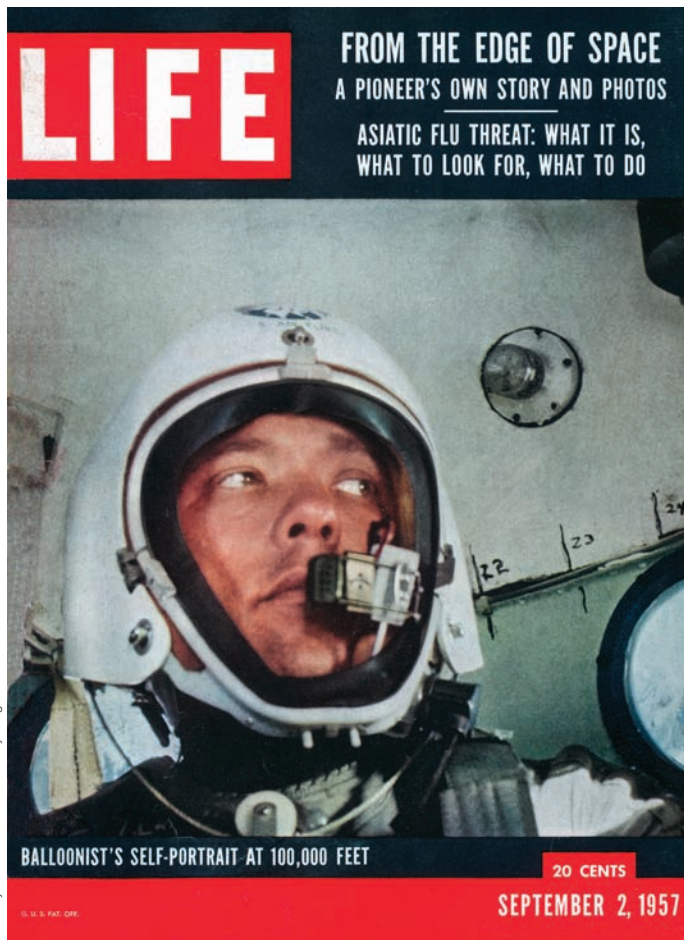


Photo by Time & Life Pictures/Getty Images



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Maj. David G. Simons, MD '46, squeezed into a pressurized aluminum capsule and left for the higher reaches of Earth's atmosphere on Aug. 19, 1957, as part of an experiment to test the effects of high-altitude travel on humans. Carried by a giant helium balloon, Simons reached 19 miles above Earth, setting a record. He conducted at least 25 experiments during his 32-hour journey. A self-portrait taken during the flight graced the cover of *Life* magazine two weeks later.

David G. Simons, MD '46: Physician in Space

Five years before John Glenn first orbited Earth, and more than a decade before Neil Armstrong walked on the moon, **David G. Simons** set the stage for the Space Age.

Squeezed into a capsule roughly the size of a CT scanner tunnel, Simons, MD '46, flew to the edge of space and back in August 1957, two months before Russia captivated audiences with the launch of its unmanned Sputnik satellite. By proving that humans could survive the journey, he cleared the path for manned space flight.

Simons died April 5 of heart failure at home in Covington, Ga. At 87, he still worked, serving as a clinical professor at Emory University in Atlanta and as an adjunct professor at the University of Saint Augustine in northern Florida.

His career took several twists. After graduating from JMC, Simons joined the Army Air Force and conducted experiments to determine the safety of space travel. He sent monkeys and rodents up in rockets and balloon gondolas, using radio devices to measure their breathing, heart rates and reactions to cosmic radiation and weightlessness. Promising results persuaded him to initiate Project Manhigh, a program to send men to the upper layers of Earth's atmosphere.

Simons first supervised the 97,000-foot ascent of a colleague, Capt. Joseph W. Kittinger II, then decided he could go higher – and he did, hovering at nearly 102,000 feet for 32 hours with the help of a helium balloon in a record-breaking mission that he documented in *Life*

magazine and his book, *Man High*. He noted “the stars were shining brilliantly” – although they did not twinkle.

He retired from the Air Force with the rank of lieutenant colonel in 1965 after devoting several years to studying the use of radio telemetry to monitor astronauts' health. He then changed his focus to rehabilitation medicine, spending two decades studying neuromuscular function at Veterans Administration hospitals. His research centered on myofascial trigger points – tiny, painful muscle knots – during the later part of his career, and he co-wrote the first text and standard work on this subject, *Myofascial Pain and Dysfunction: The Trigger Point Manual*, published in 1983. He was collaborating on the third edition of the book when he died.

“Dr. Simons not only was a distinguished graduate of Jefferson, but he contributed time and financial resources to nurture our development of a state-of-the-art program for treating patients with persistent muscle-related pain,” said John L. Melvin, MD, the Michie Professor and chairman of Jefferson's Department of Rehabilitation Medicine.

“He generated international interest in understanding, identifying and treating muscle-related pain conditions, and because of his advocacy, practitioners of many disciplines within and outside of medicine became involved in these activities.”

Simons is survived by a sister, two sons, two daughters, four grandchildren and five great-grandchildren.

Ski with the JMC Alumni Association in 2011



January 31 – February 4, 2011 - Viceroy Snowmass, Snowmass Village, Colorado

The Viceroy Snowmass is at the base of one of the world's finest ski mountains and host to ESPN's X Games. This luxury resort is located steps from the new Snowmass Base Village and only seven miles from Aspen. Visit www.viceroy snowmass.com to check out the hotel amenities and location.

What Every Doctor Should Know: A General Medical Update

January 31 – February 4, 2011

Medical updates for various specialties, directed to a general medical audience, will be presented by JMC faculty and your fellow alumni. Jefferson Medical College of Thomas Jefferson University is accredited by the ACCME to provide medical education for physicians. Jefferson Medical College designates this activity for a maximum of 16 AMA PRA Category 1 Credits™. Physicians should claim only credit commensurate with the extent of their participation.

Raft Debate: Who is most important in the management of the patient with pancreatic cancer?

- Franklin Maleson, *Moderator*
- Charles Yeo, *Surgery*
- Michael Ramirez, *Oncology*
- Edward Share, *Gastroenterology*
- David Axelrod, *Palliative Care*

Hot GI Diseases

- David Kastenberg, *Celiac Disease*
- Marianne Ritchie, *IBS: Is it an infectious disease?*
- Scott Goldstein, *Managing malignant obstruction of the colon*

Surgical Horizons

- Cataldo Doria, *Living donor liver transplant*
- Ernest Rosato, *Exploring the frontier of laparoscopic surgery*
- David Tichansky, *The operative management of obesity*

Medical Education

- John Spandorfer, *Teaching professionalism and ethics*
- Clara Callahan, *Medical School Admissions: The art and science of choosing tomorrow's physicians*

Primary Care

- Dawn Hirokawa, *Top 10 dermatologic diseases you need to know about*
- Carmen Sultana, *Update on contraception*

Emergency Medicine

- Stefanie Porges, *The Big Chill: Therapeutic hypothermia after cardiac arrest and other critical illness*
- Benjamin Braslow, *What ATLS doesn't teach you*

Cardiovascular disease

- Matthew Killian, *Pre-op evaluation*
- Joshua Eisenberg, *Diagnosis and management of aortic disease*

Registration Fee: \$425

Fee covers:

- All educational sessions and CME Fees
- Welcome Reception on Sunday, Jan. 30
- Breakfast each morning
- Afternoon snacks
- Group dinner for two (additional guests may attend the dinner for \$100 per person.)

Hotel Room Rates

Studio Residence: \$295/night or \$225/night
One Bedroom Residence: \$405/night or \$345/night
Two Bedroom Residence: \$745/night or \$545/night

Room Reservation Information

To book guest rooms, please contact the hotel directly at 970-923-8018 or online at reservations@viceroy snowmass.com. Ask for the "Thomas Jefferson Alumni Group" rate. Reservations accepted until December 15.

While booking, ask about the special lift ticket rates available with this package.

Register online: <http://jeffline.jefferson.edu/jeffcme>

For questions, call JMC Office of CME at 1-888-JEFF-CME



By THE Numbers

Student Matches

As of March, 234 graduating seniors matched in 26 specialties. As usual, students focusing on subspecialties in internal medicine led the class; family medicine, which came in fifth last year, moved to second place.

Forty-eight students will remain in the Jefferson community, serving their residencies at Thomas Jefferson University Hospitals, Wills Eye Hospital or the Nemours/Alfred I. duPont Hospital for Children in Delaware.

SPECIALTY

- 48** Internal Medicine (Categorical)
- 21** Family Medicine
- 16** Emergency Medicine
- 16** Pediatrics
- 15** Surgery (Categorical)
- 14** Anesthesiology
- 13** Radiology-Diagnostic
- 12** Psychiatry
- 11** Pathology
- 10** Ophthalmology
- 8** Urology
- 7** Obstetrics/Gynecology
- 7** Orthopaedic Surgery
- 7** Otolaryngology
- 6** Surgery (Preliminary)
- 4** Dermatology
- 4** Neurology
- 2** Emergency Medicine/
Family Medicine

SPECIALTY

- 2** Internal Medicine –
Primary Care Tract
- 2** Medicine/Pediatrics Combined
- 2** Neurosurgery

SPECIALTY

- 2** Plastic Surgery
- 2** Radiation Oncology
- 1** Pediatrics – Primary Care Tract
- 1** Peds/Psych/Child Psych Combined
- 1** Transitional



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