

2010

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Outlook



Washington
University in St. Louis
SCHOOL OF MEDICINE

SUMMER/FALL 2010

B/C Institute of Health
at
Washington University
School of Medicine

Collaborative environment

Innovative building and plaza
become focal point of
Washington University
Medical Center initiatives

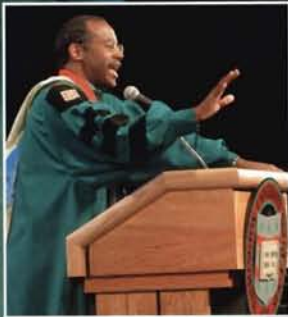
OUTLOOK • SUMMER/FALL 2010

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Moving on Benjamin S. Carson Sr., MD, director of the Division of Pediatric Neurosurgery at Johns Hopkins School of Medicine (above left), delivered the keynote address at the School of Medicine's 2010 Commencement Recognition Ceremony on May 21, 2010. At the event, 115 medical students were honored: 91 earned the MD degree, 12 earned the MD/PhD degree, nine earned the MD/MA degree, and three earned the MD/MS degree. In other areas of the School of Medicine, 13 earned the doctor of audiology degree, 23 earned the doctor of occupational therapy degree, and 80 earned the doctor of physical therapy degree. Above: Morton E. Smith, MD, with 2010 grads, from left, Lina Nayak, MD, Ana Kadkhodayan, MD, Efrat Shavit, MD, and Esther Y.H. Hsiao, MD. Left: Brendan C. Mackinnon-Patterson, MD with proud parents and faculty members Susan E. Mackinnon, MD, and G. Alexander Patterson, MD.

Outlook

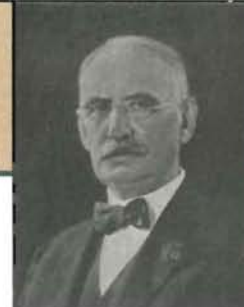
A continuing need for scholarship support

Turn this card for the inspiring story of a generous legacy that still helps students at the School of Medicine.



*Support for today's students
means a future of beneficial care
and scientific breakthroughs.*

See page 36



Jackson Johnson

His generosity lives on

"Under the will of the late Jackson Johnson, the sum of \$250,000 was donated to the School of Medicine, the income of which is to be used to aid worthy and desirable students in acquiring and completing their medical education."

With this brief item in the 1930 Washington University School of Medicine *Bulletin*, so began the endowed Jackson Johnson Scholarship Fund.

Jackson Johnson was president of International Shoe Company, the largest shoe manufacturer in the country early in the 20th century. He was elected to the Washington University Board of Trustees in 1919 and served until his death in 1929. He endowed the Jackson Johnson Scholarship Fund in memory of his son, Jackson Johnson Jr., who lost his life in "the Service of the United States during the Great War."

Coming during the Great Depression, these resources were critical in making it possible for aspiring young students to pursue their medical educations. And for over 70 years, this scholarship fund has continued to do just that. Since its inception, more than 700 young men and women have received about \$1 million in financial assistance.

To maintain its reputation for excellence, Washington University School of Medicine must continue to attract the most promising and best qualified students. Many of these exceptional students will require financial assistance, and the need for scholarship support is growing faster than available resources can sustain.

To learn more about how you can make an impact, please contact the Office of Medical Alumni and Development at (314) 935-9691.

Outlook

Washington University School of Medicine

SUMMER/FALL 2010



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The Center of the Medical Center

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21 Incoming medical students get a unique look at the state of public health in St. Louis — before they even set foot in a classroom.

FRONT & BACK COVER

Larry J. Shapiro, MD, dean of the School of Medicine and executive vice chancellor for medical affairs, stands in front of the new BJC Institute of Health at Washington University School of Medicine. The facility is the hub for BioMed 21, the university's initiative to translate scientific discovery into breakthroughs in patient care. To learn more, please turn to page 7.

PHOTO BY ROBERT BOSTON AND ERIC YOUNG

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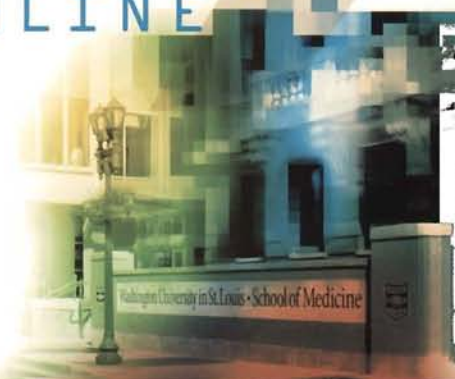
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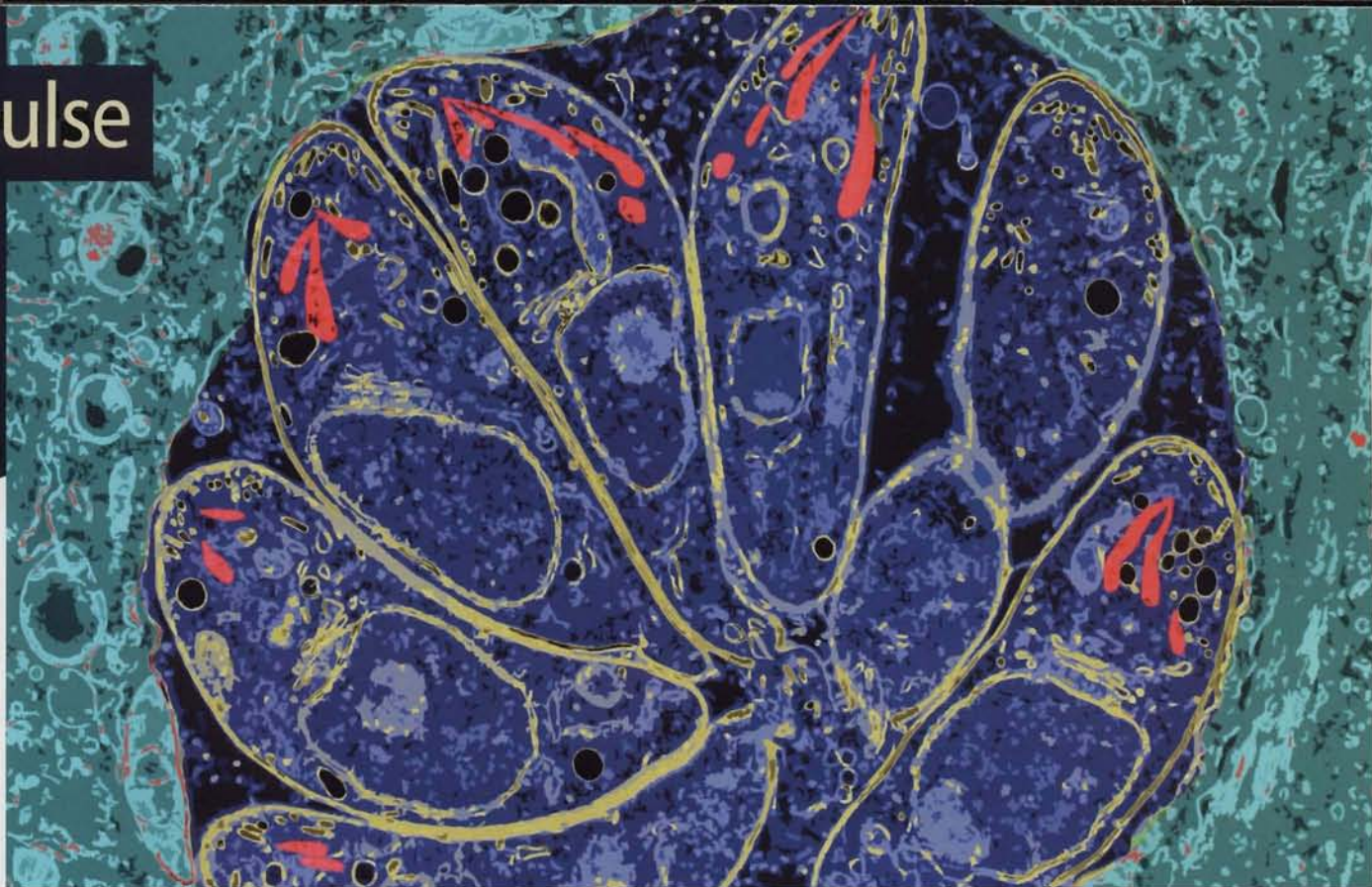
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COMING THIS FALL Watch medschool.wustl.edu for more information.

Outlook
ONLINE





WANGDA BEATTY, PHD

A newly identified protein may help stop the toxoplasma parasite, shown in purple and pink in the color-enhanced image above.

Parasite prevention

Easily blocked signaling protein may help to stop parasites

Researchers at the School of Medicine have identified a parasite protein that has all the makings of a microbial glass jaw: It's essential, it's vulnerable and humans have nothing like it, meaning scientists can take pharmaceutical swings at it with minimal fear of collateral damage.

The protein, calcium dependent protein kinase 1 (CDPK1), is made by *Toxoplasma gondii*, the toxoplasmosis parasite; cryptosporidium, which causes diarrhea; plasmodium, which causes malaria; and other similar parasites known as apicomplexans.

In the May 20, 2010 issue of *Nature*, researchers reported that genetically suppressing CDPK1 blocks signals toxoplasma uses to control its movement, preventing it from moving in and out of host cells. With researchers from other institutions, they identified a compound that blocks CDPK1.

"Kinases are proteins that are common throughout biology, but the structures of CDPKs in apicomplexans much more closely

resemble those found in plants than they do those of animals," says senior author L. David Sibley, PhD, professor of molecular microbiology. "We showed that these differences can be exploited to identify potent and specific inhibitors that may provide new interventions against disease."

As many as one in every four humans worldwide is infected with toxoplasma.

Infection with toxoplasma is most familiar to the American public from the recommendation that pregnant women avoid changing cat litter. Cats are commonly infected with the parasite, as are many livestock and wildlife. Humans also can become infected by eating undercooked meat or by drinking water contaminated with spores shed by cats.

Toxoplasma infections are typically asymptomatic, only causing serious

disease in patients with weakened immune systems. In rare cases, though, infection in patients with healthy immune systems leads to serious eye or central nervous system disease, or congenital defects in the fetuses of pregnant women.

Sibley studies toxoplasma both to find ways to reduce human infection rates and as a model for learning about other apicomplexans, such as plasmodium, that are more significant sources of disease and death.

The new study, led by graduate student Sebastian Lourido, began as an effort to determine what CDPK1 does for toxoplasma. Researchers genetically modified the parasite, eliminating its normal copy of CDPK1 and replacing it with a version of the gene that they could turn on and off. When they turned the new gene off, they found that they had paralyzed the parasite, preventing it from moving and from breaking into and out of host cells. Turning the gene back on restored these abilities.

Sibley and Lourido plan to learn more of the details of how CDPK1 works, using toxoplasma as a model to study the functions of parasites and how they differ from human cells. The successful toxoplasma inhibitor is now undergoing further testing in animals to see if it can eventually be adapted for clinical use to prevent infection in humans.

New center to treat, prevent developmental disabilities

University-wide clinical, research effort

Improving the lives of infants and children with developmental disabilities will be the focus of Washington University's new Intellectual and Developmental Disabilities Research Center (WUDDRC). More than 60 investigators from 12 university departments will be involved in the center's research.

Established with a five-year, nearly \$6 million grant from the National Institutes of Health (NIH), the center will focus on research to prevent and treat developmental disabilities in children. Special emphasis will be placed on clinical and translational research as well as on reaching out to families and the community with resources and services.

"Developmental disabilities are very challenging for families," says Terrie E. Inder, MD, PhD, director of the WUDDRC and professor of pediatrics, of radiology and of neurology and a neonatal specialist at St. Louis Children's Hospital. "Our long-term goal is to provide better care to children in our area through research, advocacy and better clinical services."

Many families with children who have developmental disabilities receive services from the state in which they live; however, those services have been limited due to budget constraints. The WUDDRC will work closely with the State

of Missouri and will assist state committees with recent research findings to guide future directions of services. The WUDDRC also has reached out to community partners and other programs in Missouri to engage them in the center's services and develop additional active collaborations.

The center's research focus will be on cerebral connectivity, genetics and environmental influences. Its sections are administrative, animal models, human clinical, imaging and biostatistics and informatics.

The WUDDRC received additional startup funding from the McDonnell Centers for System Neuroscience and Cellular and Molecular Neurobiology and from the School of Medicine.

Inder also plans to collaborate with other IDDDRCs in the Midwest to share knowledge and resources. "Collaboration will give us greater knowledge of opportunities for helping families and will move the science forward faster," she says.



Research will aid prevention and treatment of developmental disabilities.

PHOTOS.COM



RONNIE LOSSON

Egg-periment Sharon Allen, a doctoral student in the Program in Occupational Therapy, studies in the "Health Conditions" course what happens when grain alcohol is poured on an egg. The demonstration is part of a lecture on fetal alcohol spectrum disorder, a common and preventable cause of intellectual disability. Although it does not demonstrate the exact mechanism of how drinking alcohol can affect the fetus of a pregnant woman, the exercise gives students an idea of the powerful effect of alcohol. Looking on are (from right) fellow OT students Eva Tweedy, Chau Nguyen and C.J. Burhans.

Faculty honored for research efforts

Three School of Medicine faculty have been elected fellows of the American Academy of Arts and Sciences for their contribution to their disciplines and to society at large.

Susan K. Dutcher, PhD, professor of genetics and of cell biology and physiology, is a prominent geneticist. Her laboratory uses the single-celled green algae *Chlamydomonas* to learn how information in genes is used to construct cilia. Dutcher and her colleagues now are investigating the role of ciliary motility in childhood ear infections. Additionally, she and researchers in her laboratory will evaluate the role of cilia in cancer.

Timothy J. Ley, MD, the Alan and Edith Wolff Professor of Medicine, professor of genetics, director of the Stem Cell Biology Section of the Division of Oncology, and associate director for cancer genomics at the Genome Center, is highly regarded for his research to understand the mutations that cause acute myeloid leukemia (AML), a cancer of the blood and bone marrow. He has developed several mouse models of AML and characterized a key pathway by which immune cells kill tumor cells and virus-infected cells.

Robert D. Schreiber, PhD, Alumni Endowed Professor of Pathology and Immunology, professor of molecular microbiology, and leader of the Tumor Immunology Program at the Alvin J. Siteman Cancer Center, is internationally renowned for his studies of how the immune system and cancers interact. Schreiber and his colleagues also have proposed and won wide acceptance for a new theory of immune cell and cancer cell interaction called cancer immunoeediting.

Fellows of the American Academy of Arts and Sciences

- Susan K. Dutcher, PhD
- Timothy J. Ley, MD
- Robert D. Schreiber, PhD



ROBERT BOSTON

Outstanding research Han Kim, a second-year medical student, is the 2010 recipient of the Alpha Omega Alpha (AOA) Carolyn L. Kuckein Student Research Fellowship, which will fund an ophthalmology project he designed. With Kim are his research mentor, Susan M. Culican, MD, PhD, and Morton E. Smith, MD, councilor of Washington University's AOA chapter.

Schools collaborate on new degree

This fall, the School of Medicine is launching a Master of Population Health Sciences degree. The program, for medical students, resident physicians, clinical fellows and physicians, will provide training in health-sciences research methods and population health, which seeks to improve the health of groups, communities and populations through evaluating clinical interventions and implementing effective programs.

Master of Population Health Sciences Program

- One year, full-time
- Taught by 80 faculty from the School of Medicine and the George Warren Brown School of Social Work

"This is designed to give clinicians the skills to address the effectiveness and impact of clinical interventions to improve health in the population," says the program's director, Graham A. Colditz, MD, DrPH, the Niess-Gain Professor of Surgery, professor of medicine and associate director of prevention and control at the Alvin J. Siteman Cancer Center.

Alison J. Whelan, MD, senior associate dean for education and professor of medicine, says the program's graduates

will lead studies that answer the questions most important to the school's patients and community.

The program will complement the Brown School's Master of Public Health degree program which is designed for non-physicians committed to improving community health. Students in the Master of Public Health program may take electives at the School of Medicine in their second year. Some courses will be offered through both programs, offering a rich and efficient training opportunity, Colditz says.

New center offers complete care for high-risk births

A new Fetal Care Center has opened at Washington University Medical Center as the only comprehensive facility in the Midwest that offers advanced fetal diagnostics, surgery before and after birth, and newborn medicine under one roof.

The center taps into medical and surgical services from Washington University School of Medicine, Barnes-Jewish Hospital's maternity center and St. Louis Children's Hospital's neonatal intensive-care unit.

The center's goal is to provide families with a single, integrated approach to the complete continuum of care. The program includes evaluation, prenatal diagnostics, assessment, counseling and a full range of fetal interventions and surgery. It also offers support services and postnatal care.

"We don't think a mother-to-be should wait for answers," says Anthony O. Odibo, MD, co-director of the center and associate professor of obstetrics and gynecology. "That's why we designed our program to provide results, develop a plan, and begin treatment on the spot, if necessary."

The center specializes in surgical treatment, both in utero and after delivery, to correct many of the most complicated prenatal diagnoses.

Nearly 10,000 of the 600,000 annual live births in Missouri and its surrounding states have fetal anomalies that could be diagnosed and treated through the center.

Kornfeld honored with Kober Medal

Stuart A. Kornfeld, MD, the David C. and Betty Farrell Professor of Medicine, has received one of the highest awards in academic medicine, the 2010 George M. Kober Medal, from the Association of American Physicians. The award recognizes physicians who are leaders in academic medicine.

Kornfeld is a Washington University hematology specialist at Barnes-Jewish Hospital and professor of medicine in the Division of Hematology and professor of biochemistry and molecular biophysics at the School of Medicine.

In his early research, Kornfeld worked out the intricate steps that occur inside cells to build special sugar chains that become attached to individual proteins. He is best known for discovering how lysosomal enzymes are routed from where they are produced to where they are needed in lysosomes. He continues to research protein trafficking in cells, a multistep process that uses a series of recognition signals that mediate the sorting, packaging and transport of proteins.



Stuart A. Kornfeld, MD



Good neighbors Matthew Green, community development intern, left, and Brian K. Phillips, executive director of the Washington University Medical Center Redevelopment Corp. (WUMCRC), look over some maps of the area. The WUMCRC recently received a "What's Right with the Region" award from Focus St. Louis in the category of promoting strong communities. A partnership between Washington University School of Medicine and BJC HealthCare, WUMCRC works to improve the quality of life and promote economic development for the residents of the Forest Park Southeast and Central West End neighborhoods.

MOLECULAR MICROBIOLOGY AND GENOMIC SCIENCE

Tweet: Scientists decode songbird's genome

The Australian zebra finch, which gets its name from the black-and-white stripes on the male finch's throat, is the first songbird to have its genome decoded. The project, led by scientists at Washington University's Genome Center, has revealed intriguing clues about the genetic basis and evolution of vocal learning.

Nearly all animals make sounds instinctively, but baby songbirds learn to sing in virtually the same way human infants learn to speak: by imitating a parent.

An analysis of the genome, published April 1, 2010, in the journal *Nature*, suggests a large part of the bird's DNA is actively engaged by hearing and singing songs. The simple melodies last only a few seconds but are rooted in tremendous genetic complexity.

The new work provides insights to help scientists understand how humans learn language. It also sets the stage for future studies that could help identify the genetic and molecular origins of speech disorders,

such as those related to autism, stroke, stuttering and Parkinson's disease.

"Now we can look deep into the genome, not just at the genes involved in vocal learning, but at the complex ways in which they are regulated," says senior author Richard K. Wilson, PhD, director of the Genome Center. "There are layers and layers of complexity that we're just beginning to see. This information provides clues to



Zebra finch song sheds light on the genetics and evolution of vocal learning.

how vocal learning occurs at the most basic molecular level in birds and in people."

Aside from humans and songbirds, other animals known to communicate by vocal learning include bats, whales, elephants, hummingbirds and parrots.

"The zebra finch genome will be a valuable tool for neuroscientists," says lead author Wesley C. Warren, PhD, research professor of genetics at Washington University's Genome Center. "They can now carry out studies to identify a core set of genes in the zebra finch brain involved in both hearing and producing song and then look to see if any of these genes are disrupted in people with speech disorders."

On the horizon is the sequencing of the parrot genome, slated for completion later this year. That project is a collaboration between Washington University's Genome Center and Duke University.

To learn more about the international team of scientists who worked on the songbird project, visit medschool.wustl.edu.



ROBERT BOSTON

Doc talk Faculty members John H. Russell, PhD, left, professor of developmental biology and associate dean for graduate education for the Division of Biology and Biomedical Sciences (DBBS), and Scott J. Hultgren, PhD, the Helen L. Stoeber Professor of Molecular Microbiology, talk with graduate students Tracey Hermanstyn, University of Maryland; Tiffany Walker, Meharry Medical College; and Antony Schwartz, University of Southern Mississippi, during the Diversity Research Scholars Visit earlier this year. The two-day event, hosted by DBBS and the Office of Post Graduate Affairs, brought 19 prospective postdoctoral research scholars to Washington University.

Braverman named Alumni Professor

Alan C. Braverman, MD, a Washington University cardiologist at Barnes-Jewish Hospital, has been named Alumni Endowed Professor in Cardiovascular Diseases.

Braverman is a professor of medicine in the Cardiovascular Division at the School of Medicine and director of the Marfan Syndrome and Genetically Triggered Thoracic Aortic Aneurysm Clinic. He is also director of the inpatient cardiology service at Barnes-Jewish Hospital.

In addition to his clinical practice, which covers all aspects of noninvasive cardiology, Braverman is a nationally known authority on genetically triggered aortic diseases, such as Marfan syndrome, Loeys-Dietz aneurysm syndrome, thoracic aortic aneurysms and dissections and bicuspid aortic valve disease.



Alan C. Braverman, MD

The Marfan Syndrome and Genetically Triggered Thoracic Aortic Aneurysm Clinic is the largest multidisciplinary clinic in the Midwest. Braverman coordinates a multidisciplinary team that provides coordinated care in all disciplines related to these disorders, most notably cardiology, orthopedics, ophthalmology and genetics.

In gratitude for his dedication to cardiovascular research and education, the American Heart Association honored Braverman with its 2009 Hugh D. McCulloch Award.

Faculty bring unique experience to School of Medicine community

All sectors of society must play role

Four new faculty have been recruited to the School of Medicine through its Faculty Diversity Scholars Program: Cristina de Guzman Strong, PhD, Alexandra Gutierrez, MD, Jerry Jaboin, MD, PhD, and Allison Wright Willis, MD.

“As we strive for diversity among our student body, we also strive for diversity among our faculty,” says Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. “We welcome Cristina, Alexandra, Jerry and Allison — outstanding young scholars who will bring their own unique experiences to our students, patients, faculty and community.”

The four scholars were selected by the Faculty Diversity Committee, co-chaired by Consuelo Wilkins, MD, associate professor of medicine and of psychiatry, and Diana L. Gray, MD, associate dean for faculty affairs and professor of obstetrics and gynecology, and composed of 10 faculty, two staff and the co-presidents of the Student National Medical Association.

The program was established in 2005 to promote a broad diversity within the School of Medicine community and to enhance recruitment and retention of highly qualified underrepresented minority faculty.

De Guzman Strong’s research focuses on the Epidermal Differentiation Complex locus and its role in epidermal barrier formation. She had been a postdoctoral fellow at the National Human Genome Research Institute since 2003.

Gutierrez’ research and clinical practice focus on inflammatory bowel disease and its impact on underrepresented minorities. Most recently, she was an assistant professor in the gastroenterology division at the University of Alabama Medical Center and co-director of the Gastroenterology and Hepatology Clinical Research Program.

Jaboin’s research interest is in elucidating the functional role of the Tropomyosin Receptor Kinase (TRK) receptor and TRK receptor signaling in neuroblastoma, the most common extracranial solid tumor of childhood. He recently completed a radiation oncology residency at Vanderbilt University Medical Center and was an American Board of Radiology Holman Research Pathway Fellow.

Wright Willis’ research focuses on movement disorders, particularly Parkinson’s disease. Previously, she was a clinical instructor in neurology and chief resident of the Department of Neurology at Washington University School of Medicine, where she completed an internship, residency and fellowship.

A photograph of a modern, multi-story building with a light-colored stone facade and large glass windows. The building is identified by a sign as the BJC Institute of Health at Washington University School of Medicine. In the foreground, there is a circular paved area with a few people walking, and a pond with lily pads and pink flowers. The sky is clear and blue.

BJC Institute of Health
at
Washington University
School of Medicine

The *Center* of the Medical Center

BJC Institute of Health at
Washington University School of Medicine
becomes a focal point for collaborations
that translate science into medicine



Spaces throughout the building were designed to foster interaction.

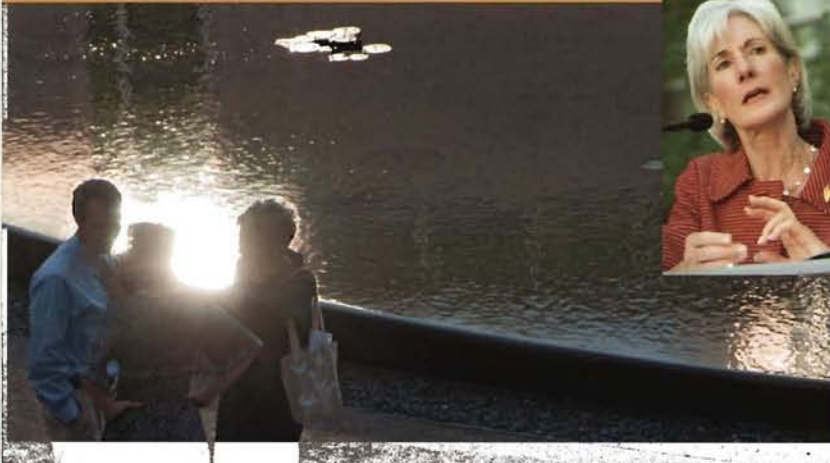
Collaboration Celebration

Friends of the university enjoyed a gala evening at the new BJC Institute of Health at Washington University School of Medicine on June 16, 2010. The central location and layout of the new facility — a beacon for innovative and potentially lifesaving research — enhances the spirit of collaboration by encouraging interaction and conversation among Washington University faculty. A \$30 million gift from BJC HealthCare helped to construct the 11-story building, which houses laboratories and support facilities for BioMed 21, the university's multidisciplinary and translational research imperative for basic scientists and clinician-researchers. Designed and built to be environmentally sustainable, the building is seeking Leadership in Energy and Environmental Design (LEED) Gold designation.

Below: Visitors enjoy the reflective pool.
Right: Speakers at the gala event.



ROBERT HUSTON



Kathleen Sebelius
U.S. Secretary of Health and Human Services



Francis S. Collins, MD
Director of the National Institutes of Health



IOH Institute of Health
at
Washington University
School of Medicine

SCHOOL OF MEDICINE
WASHINGTON UNIVERSITY MEDICAL CENTER



Steven H. Lipstein
*President and Chief
Executive Officer of
BJC HealthCare*

**Robert G. Clark, back
left, and artist Maya
Lin, front left, with
friends and family at
the Ellen S. Clark
Hope Plaza**

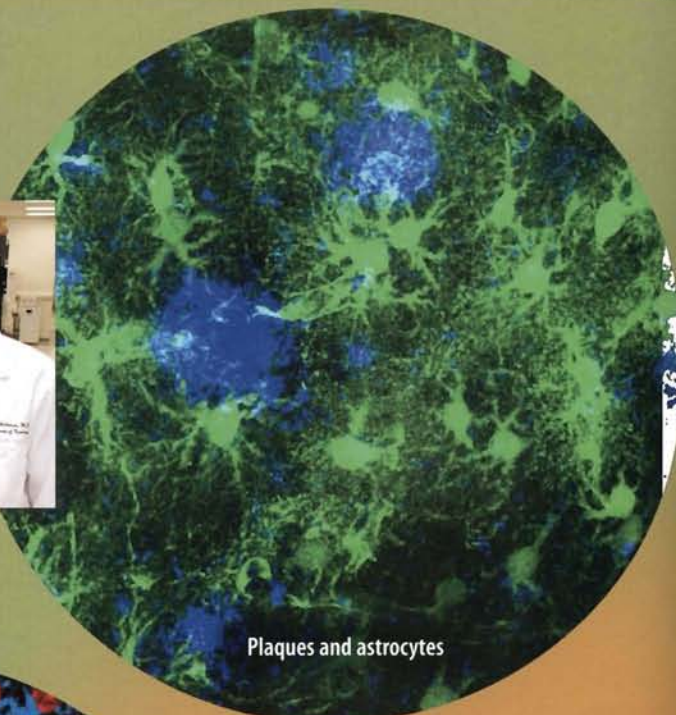


Hope Center Program on Protein Aggregation and Neurodegeneration (HPAN)

The BJC Institute of Health at Washington University School of Medicine houses five Interdisciplinary Research Centers (IRCs) and includes researchers from several scientific disciplines. In addition, the new facility includes several academic departments as well as other key research initiatives.



David M. Holtzman, MD,
Allison M. Goate, PhD



Plaques and astrocytes

Center for Women's Infectious Disease Research (cWIDR)



Scott J. Hultgren, PhD
Michael G. Caparon Jr., PhD



Uropathogenic *E. coli*-infected kidney tubules

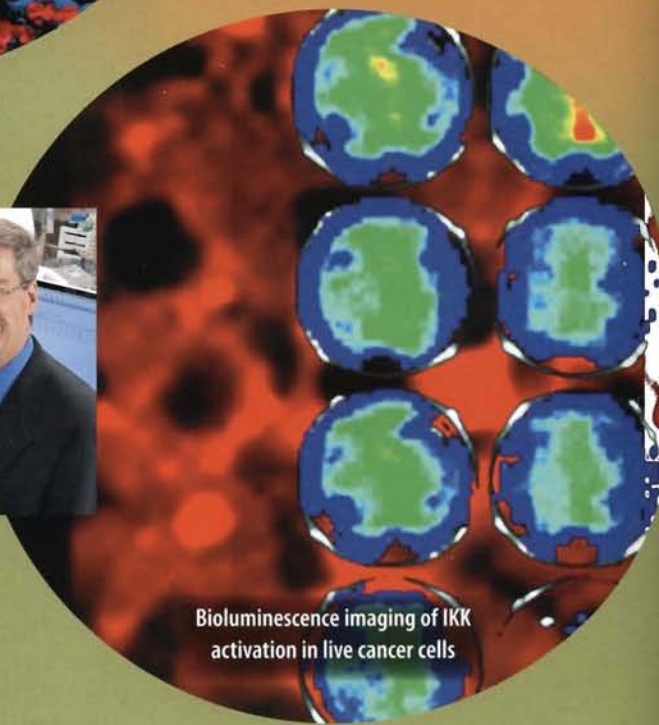
IRCs

Inter-disciplinary Research Centers

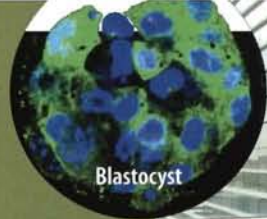
The BRIGHT Institute (Bridging Research with Imaging, Genomics and High-Throughput)



Helen Piwnica-Worms, PhD
David R. Piwnica-Worms, MD, PhD



Bioluminescence imaging of IKK activation in live cancer cells

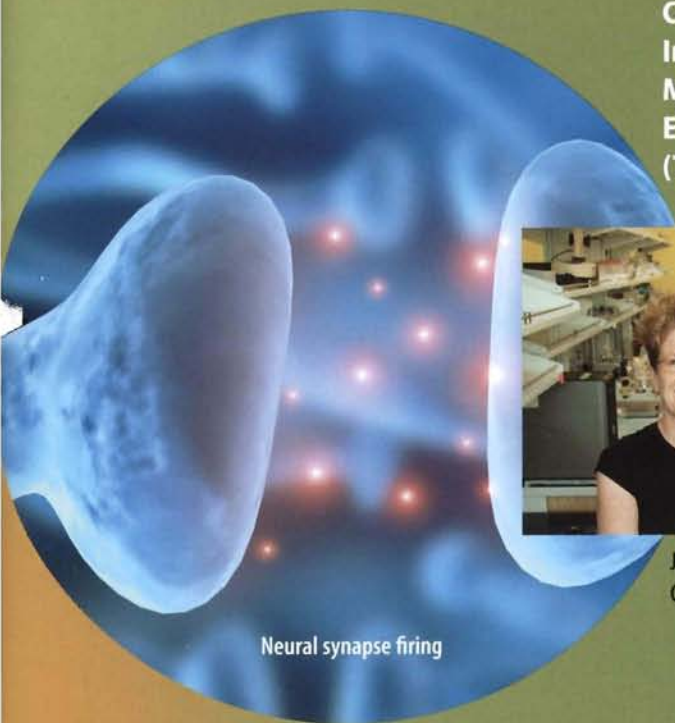


Blastocyst



**Center for Women's
Reproductive
Sciences Research**

Kelle H. Moley, MD
George A. Macones, MD

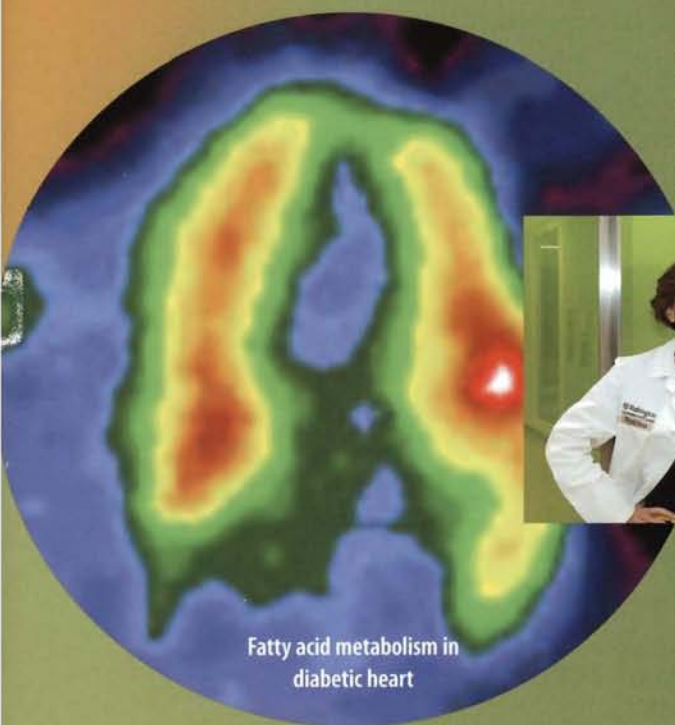


Neural synapse firing



Jeanne M. Nerbonne, PhD
Colin G. Nichols, PhD

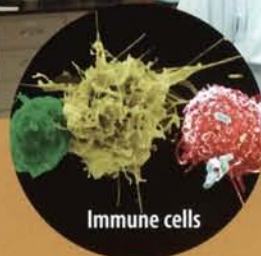
**Diabetic
Cardiovascular
Disease Center
(DCDC)**



Fatty acid metabolism in
diabetic heart



Jean E. Schaffer, MD
Daniel S. Ory, MD



Immune cells

Herbert W. "Skip" Virgin IV,
MD, PhD



**Division of
Pediatric Surgery**

Brad W. Warner, MD



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Visit biomed21.wustl.edu for more information.

BACK IN

Keeping depression from holding back older rehab patients

BY JIM DRYDEN

INJURY OR ILLNESS can cause major problems for patients of any age, but those difficulties can be more severe when a patient is older. Seniors often have a hard time recovering from a heart attack, stroke or hip fracture.

Oftentimes, hospital stays are followed by a stint in a rehabilitation facility. The goal of getting the older adult back home after a disabling medical event can be difficult to meet, and one of the main reasons for this difficulty is the clinical depression that affects 25 percent of older, medically ill patients.

"Depressed seniors can't participate as well in their rehabilitation, and they often don't recover as successfully as those who are not depressed," says geriatric psychiatrist Eric J. Lenze, MD. The presence of clinical depression significantly increases the risk that a person will end up in a nursing home permanently, he says, and it also increases both length of hospital stay and the risk for rehospitalization, making medical care more costly and less effective.

Marguerite Trout regains her sense of balance as she works with Washington University School of Medicine research study associate Roxanne Madrid, BS, left, and Barnes-Jewish Extended Care physical therapist Carolyn G. Carrabine, PT, DPT. Occupational therapist Linsey E. Kraus, OTR/L, (page 14, top left) also contributes to Trout's care.

THE GAME



“MANY OF THESE PEOPLE were playing golf, driving a car and cooking dinner before they got sick. ... In enhanced rehabilitation, patients are active partners in their own rehabilitation plan.” — Eric J. Lenze, MD



And although antidepressant drugs can work well in older patients, they aren't really an option for many rehabilitating patients.

“When an older adult in a rehabilitation facility develops depression, they need help fast; there is a narrow window of opportunity for recovery and return home,” says Lenze, an associate professor of psychiatry.

“Even when antidepressant drugs work well, they don't work immediately,” says Lenze. “Psychotherapy also takes several weeks to work. Meanwhile, the clock is ticking, and if a depressed patient's participation in physical and occupational therapy isn't improving, they often give up.”

To address these issues, Lenze is part of a team developing enhanced medical rehabilitation, therapy that addresses both physical and emotional recovery. Supported by a National Institute of Mental Health grant, enhanced rehabilitation consists of high-intensity physical and occupational therapy and a more effective transition to home. This new approach to therapy is being developed in collaboration with physical and occupational therapists at the Barnes-Jewish Extended Care (BJEC) facility in Clayton, Mo.

“We pride ourselves on sending more than 87 percent of our post-acute patients back home or to minimally supportive environments,” says Milissa Watkins, administrator at BJEC. “But we would love to increase that to 100 percent, and we're

happy to be part of this study because this effort may be able to identify enhanced rehabilitative practices that can help get more patients back to their pre-illness quality of life.”

On a recent Monday morning, BJEC physical therapist Carolyn G. Carrabine, PT, DPT, pushed patient Marguerite Trout's wheelchair into the therapy room at BJEC, and their session began in what might seem to be an unusual way, with a question: “What do you want to do first?”

“Having the patients choose their therapeutic exercises and activities helps them regain a sense of control over their lives,” explains Lenze. “That's important, because part of the reason depression is so common in these patients is that an illness has robbed them of their independence. Many of these people were playing golf, driving a car and cooking dinner before they got sick. Now they're in a rehab facility trying to get strong enough to go home again. In enhanced rehabilitation, patients are active partners in their own rehabilitation plan.”

In Trout's case, the first activity she chooses during this physical therapy session is to attempt to walk at least 10 feet with a walker. Carrabine, the physical therapist, wraps a gait belt around her patient's waist, and Trout rises, grabs the walker, and puts one foot in front of the other. Ten feet was a very conservative goal on this day, as Trout travels about three times that far before turning around and sitting back down in the wheelchair. This is part of the higher intensity of enhanced rehabilitation: patients are encouraged to go as far as they can tolerate.

“I have been surprised by how little exertion patients need to put forth for some activities that I thought would be harder,” Carrabine says. “In the past, we've frequently had patients who don't get better physically because depression is holding them back. In those cases, we continued to treat them in PT and OT and referred them for a psychiatric consult, with varying success. But I always want what's best for my patients; if enhanced rehabilitation gives them a better shot at recovery, then everyone will be happy.”

Carrabine teams with BJEC occupational therapist Linsey E. Kraus, OTR/L, and two therapy assistants, Marijon Stern, COTA, and Cindy L. Messenger, PTA, in the study. While the physical therapist works with patients on walking up stairs and doing exercises to improve their strength, stamina and mobility, the occupational therapist helps them relearn how to dress, groom, bathe and perform the activities of



GAME PLAN
Eric J. Lenze, MD, meets with patient Diana J. Simpson to plot a course of rehabilitation.



Patients in extended rehabilitation receive top-quality care and enhanced rehabilitative practices.

daily living. During the study, patients spend a lot of extra time in therapy.

"I see the enhanced therapy patients for 90 minutes per day, five days a week," Kraus explains. "In contrast, a patient in standard therapy gets treatment for about 30 to 60 minutes a day."

It's the same for physical therapy. The intensity of both types of therapy also is higher in enhanced rehabilitation because therapists constantly work on motivating patients to work harder.

Both Kraus and Carrabine say that during the early phases of the study, it's been impressive to see how these depressed patients improve during their rehabilitation.

"One of our first participants was really down in the dumps and obviously did not trust me or Linsey when we first started the enhanced program," Carrabine says. "We weren't sure that she ever was going to come around. But after those first few sessions, she began to start cracking jokes and to trust us. By the time she went home, she was putting on lipstick before therapy and was really motivated to do things for herself."

In addition to observing patients' demeanor, the therapists use the American Heart Association's exertion scale to determine how hard a patient is working during activities like walking or performing balance exercises. That scale helps them decide just how hard to push the patients.

Trout wants to be pushed. She spent time in the hospital battling problems related to high blood pressure. Then she began her rehabilitation at BJEC, but ended up back in the hospital, suffering from renal failure related to drug toxicity.

By the time her kidneys were functioning normally again, she had spent six weeks in bed.

"It really can be frustrating," Trout says. "Six weeks without walking around made my muscles weak. I have some arthritis in my knees, but I was able to walk pretty well before I got sick. Afterwards, I got very weak and very discouraged."

In fact, she was clinically depressed, discovered during a screening conducted by enhanced rehabilitation study coordinator Jacqueline K. Bitticks, BA, on the day Trout returned to BJEC. Investigators approached her about the pilot study, and she agreed to participate. "I wanted to do what I could to help them learn how to help other people," Trout explains. "I'm also in favor of anything that might get me home faster."

So Trout receives the extra therapy, motivated and empowered by her therapists. She will continue to participate in enhanced rehabilitation after going home, receiving visits from study staff to see if the benefits are maintained.

"The whole goal of enhanced rehabilitation is helping older adults leave the rehab facility and successfully return home," Lenze says. Part of the enhanced therapy is improving that transition, he says, offering patients a better chance at complete recovery, even in the face of continued stress and disability.

"So far, we are pleased to see enhanced rehabilitation improve the emotional and physical state of these patients," says Lenze. "Obviously, more research needs to be done, but it appears that the program really is giving people hope. And that hope is helping to improve both their physical and their psychiatric health." □

BACK IN THE GAME

Providing personalized care by "keeping an eye" on patients

Another thing that's different about enhanced rehabilitation is the constant presence of a video camera. Because this project is creating a new type of therapy program, the enhanced occupational and physical therapy is being taped to allow the study team to see what's happening and make suggestions for how to improve the therapy.

The video camera also goes to the patient's house to evaluate their home before they return there. The therapists say it's very helpful for them to learn about the environment to which they'll be discharging a patient. When an occupational therapist, for example, sees a cramped bathroom or a cluttered living room, that

A multidisciplinary team of experts works with patients to address both emotional and physical issues. The team's goal is to help patients return to their pre-injury or pre-illness quality of life.

therapist may recommend modifications to therapy or to the home environment to improve the patient's chances of a successful transition.

"This project has been a huge learning experience for the whole team, both the BJEC therapists and the researchers," says Eric J. Lenze, MD. "We're trying to develop a personalized approach to rehabilitation

and provide therapists with additional tools to overcome the barriers to good recovery from disability and depression."

The interdisciplinary team includes medical professionals from psychiatry, geriatric medicine, psychology, social work, occupational therapy and physical therapy. This fall, the investigators will compare enhanced rehabilitation to usual standard-of-care rehabilitation.

Lenze says that while some patients still may need antidepressant drugs or some sort of psychotherapy after returning home, he is impressed at just how effective better communication and patient empowerment has been in alleviating clinical depression.

HHT

Team

Uncommon, but far from rare, this **blood vessel disorder** requires a team-based approach for proper diagnosis and treatment.

BY GWEN ERICSON

Hereditary Hemorrhagic Telangiectasia (HHT) Center

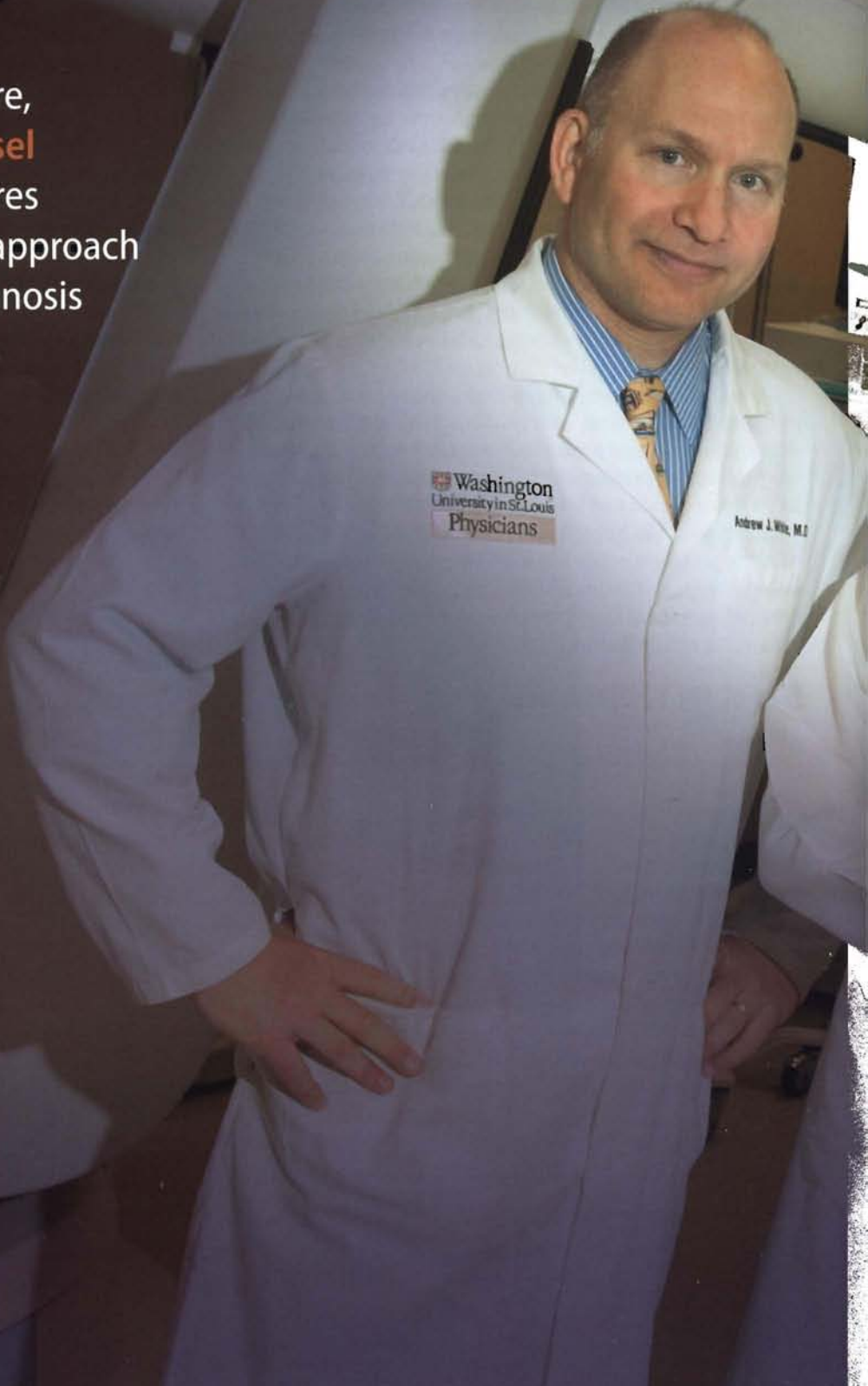
CO-DIRECTORS

Andrew J. White, MD
Murali M. Chakinala, MD

MULTIDISCIPLINARY TEAM (INSET)

BACK ROW: Daniel D. Picus, MD, Chakinala, Morey A. Blinder, MD, Dewitte T. Cross III, MD, Joshua J. Murphy, MD, Jay F. Piccirillo, MD, White, Gregory J. Zipfel, MD.

FRONT ROW: C. Prakash Gyawali, MD, Lynne Sekarski, Jacqueline Lott, Lynn Hoese, Sanjeev Bhalla, MD. Not pictured: Todd J. Schwedt, MD, Maribeth Duncan, Kathy Baker, Stacy Schrum, Lori Spangenberg.



m



A treatment center at the School of Medicine specializes in a disease that could be the basis of a medical mystery. First, there's its evocative tongue-twisting name: **hereditary hemorrhagic telangiectasia** (tel-AN-gee-ek-tay-zha), which everyone shortens to **HHT**. Then there's its varied and potentially misleading set of symptoms such as nosebleeds, back pain, anemia or strokes.

In fact, unusual attributes like these earned HHT a starring role on the popular TV series "House, MD," in which a brilliant doctor solves baffling medical cases. In the 2007 episode, a Gulf War veteran plagued with fatigue and joint pain develops spreading paralysis and nears death. Racing against time, House suspects parotid cancer, brain tumors and radiation exposure before realizing the former Marine has HHT.

In reality, an estimated one in 5,000 people in the United States has HHT. And although physicians at the HHT Center don't face a "House, MD" level of drama with all their HHT patients, they do know why HHT might be one of the last things that occurred to the fictional doctor.

"Most doctors don't know this disease; they hear about it once in medical school and never encounter it again," says Murali Chakinala, MD, co-director of the HHT Center along with Andrew J. White, MD. "Many people with HHT have mild symptoms and go through most of their lives without realizing they have the disease." White adds, "HHT is a fairly common disease, and yet no one has ever heard of it."

The School of Medicine's HHT Center started nearly 20 years ago with one patient who met two Washington University physicians who *had* heard of the disease. Cathy Goforth (see sidebar) was treated for her HHT by Daniel D. Picus, MD, professor of radiology, and his former colleague Daniel M. Goodenberger, MD. Goforth's case spurred them to create a specialized center for the disorder.

ROBERT BOSTON

Bad connections

People with HHT, hereditary hemorrhagic telangiectasia, suffer diverse health problems because a number of their arteries connect directly to their veins. The locations of these blood vessel malformations dictate patients' conditions. HHT's diverse, not-uncommon symptoms — nosebleeds, fatigue, shortness of breath — often confuse physicians unfamiliar with the disease. Although it may seem merely troublesome early in life, HHT's effects can become more severe, even life-threatening, as a patient ages. The HHT Center at Washington University School of Medicine assembles the multidisciplinary expertise needed to diagnose and treat this complex disease.

National HHT Patient and Family Conference

October 22–24, 2010

*Sponsored by
HHT Foundation International
at Washington University
Medical Center*

hht.org

Vein

Artery

Arteriovenous Malformation (AVM)

Sidestepping essential functions

Circulation city

The highway driver must enter the city and travel its streets — hopefully stopping along the way to do business. Similarly, arteries feed into beds of tiny capillaries, which then link back to veins. The pulmonary system uses capillaries to exchange oxygen and carbon dioxide for the body.

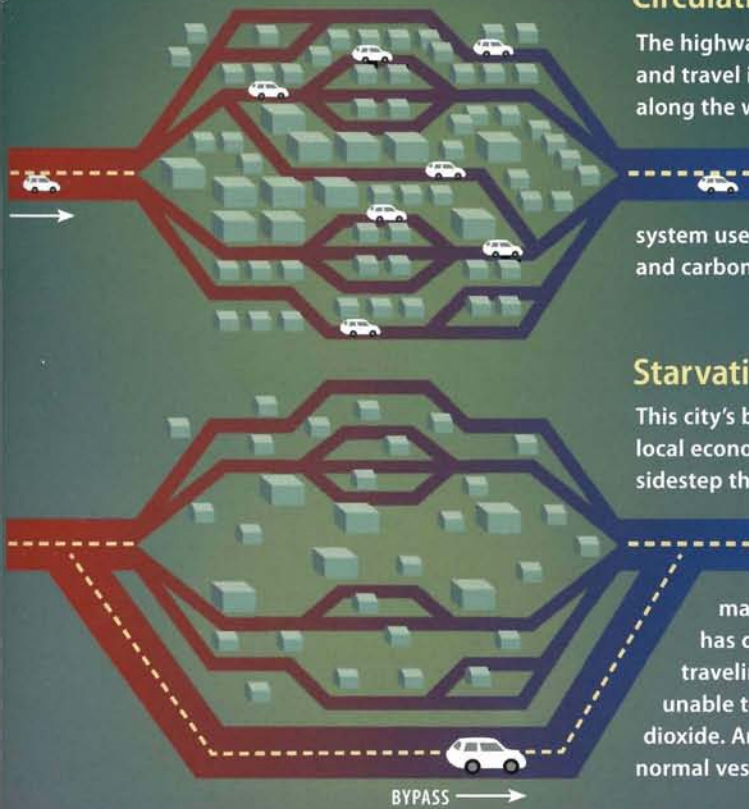


Starvation city

This city's bypass might shortchange the local economy if too many travelers use it to sidestep the business district. A circulatory system bypass — a direct artery-to-vein connection called an arteriovenous malformation (AVM) — likewise has consequences. For example, blood traveling through an AVM in a lung is unable to exchange oxygen and carbon dioxide. And, since the AVM is weaker than a normal vessel, it can rupture, spilling blood.

Embolotherapy procedure

This treatment stimulates natural clotting to plug the malformed blood vessel. A specialized team inserts and releases a metallic coil wrapped in synthetic fibers. This occlusion will seal off the problem area and prevent unwanted material from traveling through the AVM.



Troubles throughout the body

For many, the disease is very manageable, whereas others have disabling health problems.

hemorrhagic strokes at a young age

nosebleeds (often daily and profuse)

Rupture of the malformed blood vessels

blood leaking into lungs or chest cavity

gastrointestinal tract: loss of blood and anemia

External signs

Small red spots caused by dilated blood vessels on the face, hands or tongue.

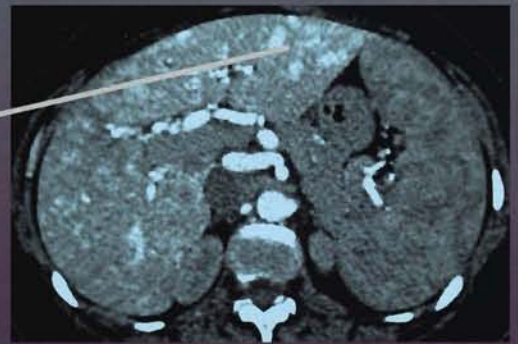
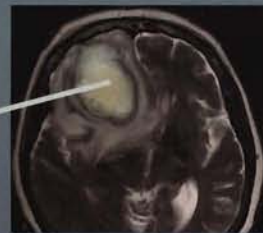


brain abscesses

spinal vessel AVMs can cause back pain and loss of function in arms or legs

arteriovenous malformations in the liver can cause heart failure because blood passes too rapidly back to the heart, overloading it

breathing difficulties due to AVMs in the lungs



Since 2006, the HHT Center, one of just 10 in the country, has been co-directed by Chakinala, associate professor of medicine in the Division of Pulmonary and Critical Care Medicine, and White, associate professor of pediatrics in the Division of Pediatric Rheumatology.

Because of HHT's range of symptoms, the center includes specialists in pulmonology, pediatrics, otolaryngology, radiology, neurosurgery, genetics, cardiology, gastroenterology, hematology and dermatology. In addition, these specialists partner with Barnes-Jewish Hospital and St. Louis Children's Hospital to provide comprehensive care to patients.

"With new patients, we put them through a core set of scans to detect abnormal blood vessels in the chest, abdomen and brain," Chakinala says. "We identify problem areas, treat current symptoms and work to avoid future problems."

With nosebleeds being a predominant symptom, Jay F. Piccirillo, MD, professor of otolaryngology, sees many of the center's patients. "The turbulent air flow in the nose can lead to dryness and irritation that stimulate bleeding," he says. "Some people's nosebleeds are so extreme that they need regular iron or blood transfusions."

Depending on severity and frequency, Piccirillo recommends moisturizing sprays or creams, cauterizes abnormal vessels or injects a scarring agent to close them, or replaces the nasal lining with skin from another part of the body.

The center regularly performs procedures on the lungs as well. Sections of lung with arteriovenous malformations (AVMs) can be surgically removed, but Picus often employs pulmonary embolization to block affected blood vessels and then reroute blood to healthy vessels.

For AVMs in the brain, an interventional neuroradiologist on the HHT team might use a similar procedure.

Malformations near the brain's surface, however, usually respond best to a surgical approach. A third option is to shrink the abnormal vessels with radiation.

Medications can manage heart failure caused by liver AVMs, and in severe cases, liver transplantation may be needed.

In addition to treatment, the HHT Center strives to improve understanding of the disorder. As part of a multi-center trial through the National Institutes of Health (NIH), the center's researchers are investigating various factors, including genetic factors, that contribute to complications in patients with brain arteriovenous malformations.

Awareness of the disease within families is vital, and screening for HHT mutations leads to earlier diagnosis and treatment. The HHT Center is assisting the HHT Foundation International in hosting its National Patient and Family Conference this October. The event will bring together specialists with the goal of providing education and support for affected patients and families.

HHT specialists also would like to increase knowledge of the disease among physicians, especially those in emergency medicine, otolaryngology and pediatrics who can play an important role in first identifying patients with HHT.

The center's directors believe patients benefit greatly from receiving care at an HHT treatment center throughout their lives. The disease can never fully be cured because new artery-to-vein connections can manifest anytime.

"HHT ages with you; you can be diagnosed at age 10, and by the time you are 60, your disease will be radically different," says Chakinala. "In addition to getting the best care, HHT patients who come to a center like ours learn more about their disease, and they can connect to an entire community of HHT patients." □

Focus on HHT began with one patient

Cathy Goforth was 25 years old in 1988 when she was first treated for HHT at the School of Medicine. Always a frail and sickly child, others made fun of her for not being able to keep up in gym class, and her health got worse as she grew older.

Although Goforth knew she had HHT as a child, her doctors didn't realize the extent of her disease and its effect on her health. While pregnant in her early twenties, the complications increased; she was diagnosed with pneumonia and congestive heart failure. Doctors were concerned about two lives — Goforth's and her baby's.

"I knew they were right because I couldn't cross the room without having to sit down and catch my breath," Goforth says.

Luckily, the baby was fine and Goforth was referred to Daniel D. Picus, MD, and Daniel M. Goodenberger, MD. Picus plugged seven arteriovenous malformations in her lungs, shunting blood back to normal lung tissue. Goforth's health improved immediately, and she was finally able to keep up with her young daughter and get back to her overgrown garden.

A short time later, an arteriovenous malformation in her spine caused paralysis below the waist. Surgery relieved the pressure on her spinal cord, but she remains partially paralyzed and walks with canes.

Goforth checks in periodically with Picus and Murali Chakinala, MD, to keep tabs on her HHT. She has the nosebleeds typical of



Cathy Goforth with Daniel D. Picus, MD

HHT patients, as well as characteristic red spots on her skin. Doctors also have found arteriovenous malformations in her liver.

Goforth has educated herself about HHT and is happy to talk with others about the disorder. "It can be a lifesaver to find out about the disease and have something done for it," Goforth says. "I want others to know how dangerous HHT can be if malformations are in crucial areas such as the lungs, liver, brain or spine."



Before medical students hit the books, they hit the streets of St. Louis, where their ideals meet face-to-face the realities of health care in America.



TAKE THE PLUNGE

BY HOLLY EDMISTON

Each year, first-year students are invited to St. Louis

a week before Orientation to participate in WUMP, the Washington University Medical Plunge — five days of lectures, site visits and community service related to public health. In one short week, the people they meet, the problems they face, and the lessons they learn may focus the trajectories of their medical careers.

In 2009, 55 students — nearly half of the first-year class — attended WUMP to learn how they might have an impact on the city's health problems.

According to Will Ross, MD, MPH, associate dean for diversity and the creator of and mentor for WUMP, the program began more than 10 years ago as an offshoot of the Saturday Neighborhood Health Center, a free, student-run health clinic located near the medical school. Ross recalls how the topic came up in a casual conversation with former medical student and Coro leadership fellow Edy Kim.

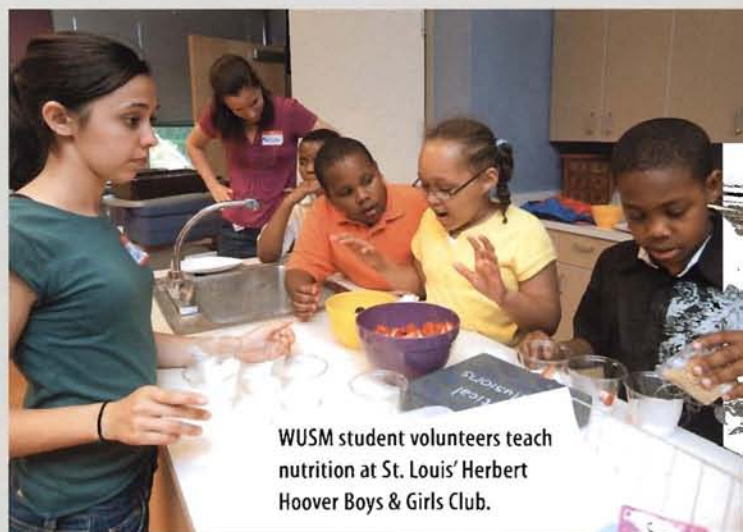
"The clinic was an excellent opportunity to get students involved in providing health care to a distressed neighborhood, but they wanted to know more about health care in St. Louis," says Ross, who had several goals for WUMP at its inception. He wanted to make students aware of St. Louis' unique public health challenges and to introduce them to the people and nonprofit organizations working to reduce disparities. He also hoped they would develop a long-term commitment to the city and create a variety of innovative and successful ventures. Ross says that over the years, his original goals have been exceeded.

"I assumed a handful of students each year would have an interest in population-based health," he says. "So, when almost half the class signed up in 2009, I was elated."

Bradley A. Evanoff, MD, MPH, the Richard A. and Elizabeth Henby Sutter Professor of Occupational and Environmental Medicine, was an early supporter of the program.

"Many of our incoming medical students are interested in health disparities and in public health," says Evanoff. "WUMP exposes them to diverse populations with a variety of health issues related to socioeconomic factors and helps them appreciate the complex determinants of health. And I hope that it inspires some to pursue careers that improve public health and reduce health disparities."

WUMP's schedule is dynamic, with speakers and subjects changing from year to year. One element that has



WUSM student volunteers teach nutrition at St. Louis' Herbert Hoover Boys & Girls Club.



Children and their families learn how to make healthy snacks as part of a WUSM student outreach program.

become a standard, however, is a bus tour of St. Louis hosted by Bob Hansman, associate professor at the Washington University College of Architecture and the Graduate School of Architecture & Urban Design. An artist-in-residence at the School of Architecture, Hansman is nationally renowned for his work with underprivileged inner-city youth.

"In my own teaching, at Washington University and in the Clinton-Peabody Housing Projects, health is a recurrent theme," says Hansman. "I often talk to my architecture students about health being the ultimate goal of design. In the projects, health — or the lack thereof — whether through issues of lifestyle, violence, nutrition or access to medical care, is a constant issue."

Hansman says that the bus tour shows medical students the "real" St. Louis and allows him to bring up certain issues related to health in an urban setting, such as exposure to environmental toxins, lack of access to safe, open green spaces, and difficulty in finding adequate sources of nutritional food. "Confronting these questions and issues is why I look forward every year to being a part of the WU Medical Plunge — and why, even against daunting odds, it fills me with hope," he says.

Second-year medical students Rashmi Agarwal and Elaine C. Khoong, president of the Class of 2013, are the student coordinators for this year's WUMP. They have worked to further enhance the experience for participants.

Agarwal believes that medical student interest in public health is representative of an overall rising interest in public health issues. To better accommodate student interests, Agarwal and Khoong added more student speakers. For instance, on the day of the sexual health panel, students from the STATS (Students Teaching AIDS to Students) and SHARE (Sexual Health and Reproductive Education) spoke alongside medical professionals. They also included more panel discussions and built in more informal discussion time so that participants could synthesize the information they learned from each day's activities.

After WUMP, first-year students who want a more formal exposure to public health can take Introduction to Public Health, a selective taught by Ross, which reviews the history, practices and administration of public health and epidemiology.

The course gives students the tools to translate what they observed and talked about in WUMP into action, channeling their enthusiasm into amplifying existing programs and implementing long-term, community-based programs.

According to Ross, many WUMP students go on to become active members of other student-led initiatives at the School of Medicine. One such program, the Public Health Interest Group, partners with people in the community to improve health by offering health screenings, nutritional outreach and public policy discussions.

"The projects have become very sustainable because of the large nucleus of interested students," says Ross. "They really are institutionalizing public health in the medical school."

Third-year student David Levine has been the leader of several successful community health efforts. In his first two years, Levine coordinated a series of student-run health screenings held at grocery stores in underserved areas and a nutrition program for children and parents at the local Herbert Hoover Boys & Girls Club. In the coming year, the nutrition program is expanding to add additional sites and, with a \$2,000 grant Levine recently received, two Farmers Markets will be held in the city.

It's not just School of Medicine students who benefit from involvement. Those living and working in the community appreciate their efforts.

"The WUMP students learn their new art of medicine with an eye for health care equity," says Heidi B. Miller, MD, an internist primary care doctor at the Family Care Health Centers, a community health center in the City of St. Louis that serves the uninsured and underinsured.

"Regardless of what field these students ultimately select, they have an obligation to care for the underserved in some capacity," says Miller, who also is a voluntary clinical faculty member of the School of Medicine. "WUMP enables them to act on this in an informed and committed way."

Another longtime community liaison is Judy Bentley, founder and CEO of CHIPS Health and Wellness Center (Community Health-in-Partnership Services), a not-for-profit organization on the city's North Side that provides health care and social services for the uninsured and underserved. Last fall School of Medicine students started a fundraising program with CHIPS and helped to put on a gala honoring the group's volunteers.

"There is a level of compassion and sensitivity of the broader world in these young people, which they are using to enrich not only their own lives but those of people in need," says Bentley. □



Tour guide Bob Hansman, associate professor and artist-in-residence at Washington University's College of Architecture, introduces incoming medical students to St. Louis' urban neighborhoods.

Don't miss this bus!

Forget the Gateway Arch or other St. Louis tourist attractions. The WUMP bus travels to parts of the city not covered during most tours, such as inner city neighborhoods and landmarks of the civil rights movement. WUMP examines the shifting demographics of a city that students will call home for the next four years and gives them glimpses into the lives of their future patients. Site visits for 2010 include:

St. Patrick Center

Helps homeless or at-risk individuals gain self-sufficiency and achieve positive changes in their lives through affordable housing and employment

Planned Parenthood
Reproductive health

Renal Clinic
Kidney health

St. Louis Crisis Nursery
Prevention of child abuse

and neglect, emergency intervention, respite care and support to families in crisis

Child Protection Program/Sexual Abuse Management Clinic
Multidisciplinary group of medical professionals caring for abused children

St. Louis County Justice Center

Medical and psychiatric care provided by the St. Louis County Department of Health

Covenant House
Empowering homeless, runaway and at-risk youth to live independently and become contributing members of the community

Women's Safehouse
Domestic violence shelter serving abused women and their children

The SPOT
Responds to the needs of teenagers by providing access to an array of health and prevention services

Youth Learning Center
Helping children to develop excellence in 21st century skills and inspiring them to lifelong learning and leadership



Will Ross, MD, with student coordinators Elaine C. Khoong and Rashmi Agarwal

Results are in!

MATCH DAY WAS HELD MARCH 18, 2010, and 114 graduating medical students took part in the National Resident Matching Program. During the annual ceremony, senior medical students in the United States learn which residency programs they will enter. School of Medicine graduates are highly successful in obtaining competitive training programs. In 2010, 28 percent of the graduating class selected a primary care field and 33 percent matched into highly competitive fields, including dermatology, diagnostic radiology, neurosurgery, general surgery, orthopedic surgery, urology, otolaryngology and plastic surgery.



Reading aloud: Ellie Lunt, 4-year-old daughter of Michael D. Lunt, MD 10, announces his match in pathology at the University of Rochester Medical Center in Rochester, New York.

ALABAMA

Birmingham

University of Alabama Medical Center

GENERAL SURGERY
Oluwafunmi Onaopemipo Awonuga

CALIFORNIA

Los Angeles

UCLA Semel Institute for Neuro- science and Human Behavior

PSYCHIATRY
Nicholas Wadsworth Reeves

San Diego

University of California- San Diego Medical Center

INTERNAL MEDICINE
Zachary David Permutt

San Francisco

University of California- San Francisco

OPHTHALMOLOGY
Michael John Geske
PEDIATRICS
Bryce Abram Mendelsohn
POSTGRADUATE RESEARCH YEAR
Patricia Ellen Goldhoff

Stanford

Stanford University

DIAGNOSTIC RADIOLOGY
Lina Nayak
INTERNAL MEDICINE
Jared David Miller

PEDIATRICS

Brian Francis Flaherty

Torrance

Harbor-UCLA Medical Center

INTERNAL MEDICINE
Thomas Tao Jiang

COLORADO

Denver

University of Colorado School of Medicine

OBSTETRICS AND GYNECOLOGY
Manuel Alejandro Doblado
PEDIATRICS
Craig Adam Press

CONNECTICUT

New Haven

Yale-New Haven Hospital

DERMATOLOGY
Jennifer Lynn Reeve

DISTRICT OF COLUMBIA

Washington

George Washington University

DIAGNOSTIC RADIOLOGY
Sunny Christopher Rhee

FLORIDA

Miami

University of Miami- Jackson Memorial Hospital

PEDIATRICS
Carolyn Marie Kienstra

ILLINOIS

Chicago

Loyola University School of Medicine

INTERNAL MEDICINE
Dominique Virginie Low

Northwestern University- McGaw Medical Center

DIAGNOSTIC RADIOLOGY
Laura Nicole Billadello
Vanessa Ann Lewis
GENERAL SURGERY
Carlie Rebecca Kennedy

Rush University Medical Center

OPHTHALMOLOGY
Fred Bernabe Chu

University of Illinois

OPHTHALMOLOGY
Kavitha Rajeswa Sivaraman

INDIANA

Indianapolis

Indiana University School of Medicine

GENERAL SURGERY
Dadrie Freda Baptiste

IOWA

Iowa City

University of Iowa Hospitals and Clinics

PSYCHIATRY
Eric Neil-Jensen Boyum

MARYLAND

Baltimore

University of Maryland Medical Center

INTERNAL MEDICINE
Yousef Zarbalian

MASSACHUSETTS

Boston

Beth Israel Deaconess Medical Center

INTERNAL MEDICINE
Zena Hassan

Brigham and Women's Hospital

INTERNAL MEDICINE
John Michael Gansner
PATHOLOGY
Jeanne Shen

Children's Hospital

PEDIATRICS
Erik Christian Madsen

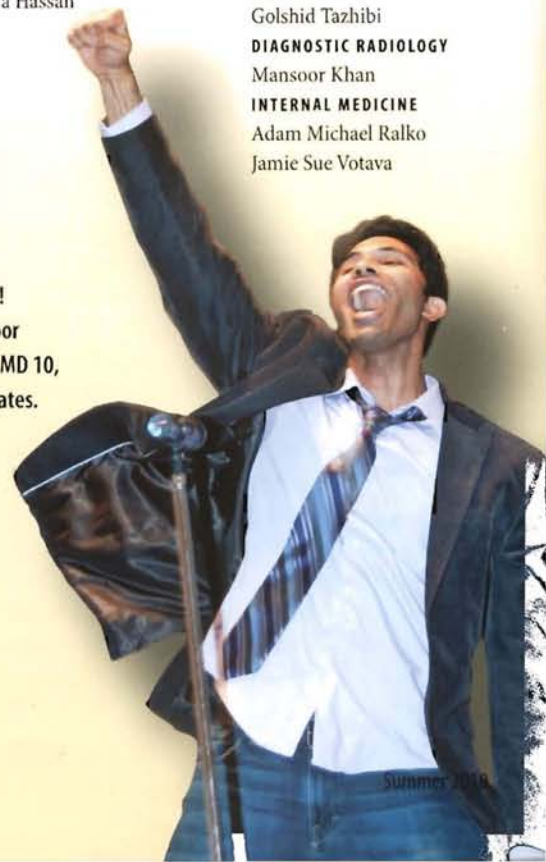
MICHIGAN

Ann Arbor

University of Michigan

ANESTHESIOLOGY
Golshid Tazhibi
DIAGNOSTIC RADIOLOGY
Mansoor Khan
INTERNAL MEDICINE
Adam Michael Ralko
Jamie Sue Votava

Yeesss!
Mansoor
Khan, MD 10,
celebrates.



OPHTHALMOLOGY

Tra Hyman Schachar

PSYCHIATRY

Cara Marie Fosdick

Detroit

Henry Ford Health Science Center

TRANSITIONAL YEAR

David Caleb Ham

MINNESOTA**Minneapolis**

Hennepin County Medical Center

EMERGENCY MEDICINE

Eleanor Ross Oakley

University of Minnesota

OTOLARYNGOLOGY

Jason Alan Meyers

MISSOURI**St. Louis**

Barnes-Jewish Hospital

ANESTHESIOLOGY

Shen Te Steven Hsu

Ilya V. Treskov

DERMATOLOGYBrundha Balaraman
Carrie Christine Coughlin
Shadmehr Demehri**DIAGNOSTIC RADIOLOGY**Seth-Emil Thomas Bartel
Preethi Rao Guniganti
Kareem Mawad
Sreevathsan Sridhar**EMERGENCY MEDICINE**

Seth Harold Kendler

Courtney Marie LeHew

GENERAL SURGERY

Iheoma Yvonne Nwaogu

INTERNAL MEDICINENatalie Christine Battle
Jake Michael Chanin
Matthew John Christopher
Ana Kadkhodayan
Jimmy Lee Kerrigan
Clare Elizabeth Moynihan
Amit Patel**NEUROLOGY**Joshua Hernandez Buck
Esther Yin Hsing Hsiao**OBSTETRICS AND GYNECOLOGY**Anna Sorensen Graseck
Jaclyn Mikela Grentzer**ORTHOPAEDIC SURGERY**Alexander William Aleem
Mary Claire Manske**PATHOLOGY**

Meredith Ellen Pittman

PSYCHIATRYJames Michael Harper
John Michael Vaszari**UROLOGY**

Elizabeth Bernette Roth

St. Louis Children's Hospital

PEDIATRICSJacqueline Leigh Anderson
Nicole Marie Cresalia
Sarah Alison Finger
David Aaron RosenSaint Louis University
School of Medicine**INTERNAL MEDICINE**

Sheena Mary Grant

ORTHOPAEDIC SURGERY

Philip Mark Sinatra

Washington University
School of Medicine**OPHTHALMOLOGY**

Kimberly Meng Hsu

NEW JERSEY**Newark**

UMDNJ-New Jersey Medical Center

ORTHOPAEDIC SURGERY

Heather Kong

OTOLARYNGOLOGY

Amit Arun Patel

NEW MEXICO**Albuquerque**University of New Mexico
School of Medicine**PSYCHIATRY**

Emiliano Valles

NEW YORK**New York**Albert Einstein-Beth Israel
Medical Center**PSYCHIATRY**

Gregory Mark Gale

Albert Einstein-Montefiore
Medical Center**OTOLARYNGOLOGY**

Kathleen Margaret Tibbetts

New York Presbyterian-Weill
Cornell Medical Center**GENERAL SURGERY**

Jennifer Michelle Murphy

INTERNAL MEDICINE

Mark Stephen Diamond

New York University
School of Medicine**ANESTHESIOLOGY**Cassandra Mabel
Armstead-Williams

Staying in St. Louis: Kimberly M. Hsu, MD 10, and her fiancé Albert Mao confirm her match in ophthalmology at WUSM.

EMERGENCY MEDICINE

Ambrose Hon-Wai Wong

ORTHOPAEDIC SURGERY

David Yi Ding

PEDIATRICS

Elliott Mark Weiss

RochesterUniversity of Rochester
Medical Center**ORTHOPAEDIC SURGERY**Peter Carl Chimenti
Robert John Thorsness**PATHOLOGY**

Michael Dennis Lunt

NORTH CAROLINA**Chapel Hill**

University of North Carolina

ORTHOPAEDIC SURGERYBrendan Clifford
Mackinnon-Patterson**Durham**

Duke University Medical Center

OBSTETRICS AND GYNECOLOGY

Cindy Erxin Zhang

OREGON**Portland**Oregon Health & Science
University**INTERNAL MEDICINE**Kristin Rebecca Brown
Vicky Patricia Wang**OPHTHALMOLOGY**

Manjool Manoj Shah

PENNSYLVANIA**Philadelphia**Hospital of the University
of Pennsylvania**ANESTHESIOLOGY**

Deepika Suresh Rao

NEUROLOGY

Sanjeev Vaishnavi

PittsburghUniversity of Pittsburgh
Medical Center**PSYCHIATRY**Richard Anthony
Schenkelberg Jr.**RHODE ISLAND****Providence**

Brown University

PSYCHIATRY

Jessica Lynn McAlister

TENNESSEE**Nashville**Vanderbilt University
Medical Center**ANESTHESIOLOGY**

Jessica Anne Quinlan

DERMATOLOGY

Eric Austin Millican

TEXAS**Dallas**University of Texas-
Southwestern Medical School**NEUROLOGICAL SURGERY**

James Andrew Botros

OPHTHALMOLOGY

Peng Lei

PEDIATRICS

Jennifer Brooke Williams

Fort Sam HoustonSAUSHEC-Brooke Army
Medical Center**ORTHOPAEDIC SURGERY**

Katherine Marie Bedigrew

Houston

Baylor College of Medicine

INTERNAL MEDICINE

Kaushal Vinod Patel

Lackland Air Force BaseSan Antonio Military
Medical Center**DIAGNOSTIC RADIOLOGY**

Bradley John Carra

Temple

Texas A&M College of Medicine

FAMILY MEDICINE

Casey Kent McCullough

VERMONT**Burlington**University of Vermont-
Fletcher Allen Health Care**PSYCHIATRY**

Efrat Shavit

VIRGINIA**Charlottesville**

University of Virginia

EMERGENCY MEDICINE

Edward Scott Hawkins

WASHINGTON**Seattle**University of Washington
Affiliated Hospitals**DERMATOLOGY**

Lauren Kali Biesbroeck

DIAGNOSTIC RADIOLOGY

Gerald Johnstone Palagallo

PATHOLOGY

Cheryl Alyssa Mather

PLASTIC SURGERY

Rahul Kasukurthi

Angelo B. Lipira

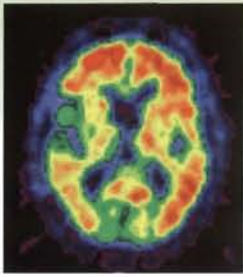
PSYCHIATRYRebecca Cappel
Hendrickson**WEST VIRGINIA****Morgantown**West Virginia University
School of Medicine**DIAGNOSTIC RADIOLOGY**

Aaron Scott McAllister

OTHER

Deferring Residency Training

Michael Anthony
Mahowald



Accelerating research

World-renowned Alzheimer's Disease Research Center named for Charles F. and Joanne Knight

WASHINGTON UNIVERSITY has recognized Charles F. and Joanne Knight by naming its world-renowned Alzheimer's Disease Research Center in their honor. The Knights have long been generous supporters of the School of Medicine and leaders in providing funding for Alzheimer's disease research. They have committed more than \$15 million to advance Alzheimer's research at Washington University School of Medicine.

"This magnificent gift from Chuck and Joanne Knight will enable significant progress in the fight against Alzheimer's, benefiting future generations enormously," says Chancellor Mark S. Wrighton. "I personally am convinced that Alzheimer's disease is one of the most serious problems of the 21st century. This gift is another reflection of the extraordinary generosity of the Knights to Washington University and the community."

This gift will serve as a catalyst for exploring opportunities at the forefront of Alzheimer's disease research. The funds will be used to support research efforts and to recruit and retain the most talented physicians and scientists, helping the Charles F. and Joanne Knight Alzheimer's Disease Research Center initiate and conduct projects that otherwise would not be possible.

Joanne Knight became familiar with Alzheimer's when her mother developed the disease in the 1980s. "We saw firsthand how this disease affects patients and their families," she recalls. "We also saw that Washington University is at the forefront of Alzheimer's disease research, and their work offers hope that one day there will be truly effective therapies for treatment."

"The School of Medicine is a leader in Alzheimer's research," Charles F. Knight says. "Researchers here are pursuing treatments that could one day dramatically improve the lives of millions of individuals worldwide. We want to do our part to fulfill that goal."

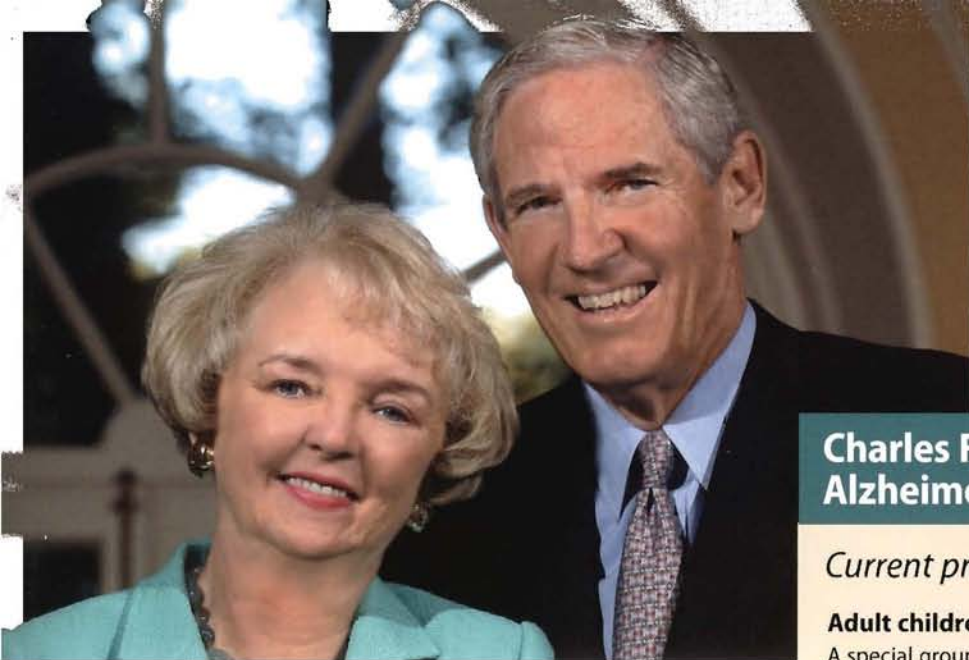
The Alzheimer's Disease Research Center (ADRC) was founded in 1985 by Leonard Berg, MD, a pioneer in Alzheimer's disease research who passed away in 2007. Research at the center seeks to distinguish between



Studies in Alzheimer's disease will lead to advances in early detection and treatment: Principal investigator John C. Morris, MD, Knight ADRC director, with Joy Snider, MD, PhD.

normal effects of aging on memory and the earliest symptoms of Alzheimer's disease and establishes that the causes of Alzheimer's disease begin damaging the brain decades prior to the first appearance of clinical symptoms.

"The Knight Alzheimer's Disease Research Center is making great advances in understanding Alzheimer's, as physicians and researchers home in on early detection as well



alzheimer.wustl.edu

Charles F. and Joanne Knight Alzheimer's Disease Research Center

Current projects in Alzheimer's research

Adult children study

A special group of volunteers with a parent who had Alzheimer's disease have been followed for years. Regular and extensive imaging studies, including unique neuroimaging techniques along with assays of spinal fluid, are used to detect changes in the brain. Because dementia typically does not occur in Alzheimer's disease until age 60 or 70, there could be a "window" of a decade or longer during which interventions with new drugs might prevent the appearance of dementia later.

Dominantly Inherited Alzheimer's Network (DIAN)

Another unique study is the newly created DIAN, a six-year international research collaboration dedicated to understanding rare, inherited early-onset forms of Alzheimer's disease.

DIAN includes Washington University; a consortium involving Harvard University, Massachusetts General Hospital and Brown University; Columbia University; Indiana University; the University of California, Los Angeles; the University College of London's Institute of Neurology at Queen's Square, and a consortium of the universities of

Brisbane, Perth and Sydney in Australia.

Forms of Alzheimer's disease linked to inherited mutations are rare but have provided scientists with many important insights into the more common "sporadic" forms of the disease. Through DIAN, investigators hope to organize and enroll a broad pool of qualified volunteers.

Current findings show that the growth of protein



Early treatment could enable longer, more productive lives

aggregations believed to cause Alzheimer's disease in the brain over time can be charted to predict when someone will develop the outward clinical signs of dementia. As progress is made in identifying the pre-clinical stage of Alzheimer's disease, researchers at the Knight ADRC are positioned to devote resources to accelerating the pace at which promising new drugs for the prevention of dementia are discovered.

as potential treatments to halt the progress of this terrible illness," says Larry J. Shapiro, MD, executive vice chancellor and dean of the School of Medicine. "The unwavering loyalty and generosity of Chuck and Joanne Knight will allow us to make even greater advances."

"This extraordinary gift, as well as those from others, will help us keep the Knight ADRC at the forefront of worldwide efforts to improve our ability to diagnose, treat and one day prevent Alzheimer's disease," states John C. Morris, MD, the Harvey A. and Dorismae Hacker Friedman Distinguished Professor of Neurology and director of the Charles F. and Joanne Knight ADRC.

"The acceleration in research and development that the Knights' generous support helps enable is coming at a crucial time," says David M. Holtzman, MD, the Andrew B. and Gretchen P. Jones Professor and chair of the Department of Neurology at the School of Medicine and neurologist-in-chief at Barnes-Jewish Hospital. "The age groups at highest risk for Alzheimer's disease are increasing in number faster than they ever have before, and to prevent the potentially enormous economic and human costs of the epidemic of Alzheimer's that will result, we must find new solutions for diagnosis and treatment."

The Knights' other gifts to the School of Medicine — including the Joanne Knight Breast Health Center and Breast Cancer Program at the Alvin J. Siteman Cancer Center and the Charles F. and Joanne Knight Distinguished Professorship in Orthopaedic Surgery — reflect their support for improving community health and wellness. In addition, the Knights have made many significant gifts to the Olin Business School.

Charles F. Knight is chairman emeritus of Emerson and a former member of Washington University's Board of Trustees. He chaired Barnes Hospital from 1991 to 1995, when he helped engineer the formation of BJC HealthCare and served as its chairman from 1993 to 1998. The hospital's Knight Emergency and Trauma Center was named for him in 2002. Both Charles F. and Joanne Knight have been awarded honorary doctoral degrees from Washington University.

The Brasington Family

Grief, channeled into *action*

A family that knows too well how mental illness can claim young lives supports physicians making significant contributions to psychiatry

Young Philip Byron Brasington had a wonderful, dry sense of humor. An accomplished musician, he could play Bach's "Tocatta and Fugue in D Minor" on the organ by ear.

Phil was diagnosed with schizophrenia at age 19 while going through U.S. Army basic training.

The Brasington family debated about where to seek treatment for Phil. Around the time that his older brother, Richard D. "Rick" Brasington, MD, now professor of medicine at Washington University School of Medicine, began medical school at Duke University in Durham, N.C., Phil was admitted to the Veterans Affairs (VA) hospital in the same city. The VA hospital was across the street from the medical campus, allowing Rick to visit Phil each day after class.

Sadly, Phil took his own life when he was 23. "We knew that Phil was going downhill when he sold his organ," Rick says.

Phil's death would not be the last painful loss for the Brasingtons.

Rick Brasington's second son, James Philip Brasington, loved playing hockey and acting. An honors student, he attended the University of Wisconsin-Madison on the President's Scholarship. He dealt with depression beginning in elementary school and later was diagnosed with a personality disorder. After suffering severe bouts of depression in college, he ended his life at age 20 by running his car into a tree.

**The "Brasington Family Band":
Becky on keyboards, Rick on guitar,
Evan on drums, Ben on bass, and
Phil playing the organ.**





Becky Brasington Clark, left, and Richard D. Brasington, MD, and his wife, Kathleen Ferrell, celebrate with Richard A. Schenkelberg Jr., MD, the first recipient of the James and Philip Brasington Memorial Prize. Schenkelberg began a psychiatry residency at the University of Pittsburgh Medical Center in June.

Research has shown that many mental illnesses have a genetic component. "Severe mental illness has been a serious problem for young adults in the Brasington family," says Rick, who also lost his father to suicide. "I want people to know that mental illness is just as deadly as cancer and heart disease, and victims are usually younger. I also want society to accept depression as a medical condition."

To honor the memory of both Phil and James, Rick and his wife, Kathleen Ferrell, along with Rick's sister, Rebecca "Becky" Brasington Clark, this year established the James and Philip Brasington Memorial Endowed Fund in the Department of Psychiatry.

A portion of the annual payout of the fund is used to award the James and Philip Brasington Memorial Prize. This prize annually recognizes a medical student who has demonstrated excellent preclinical and clinical academic performance in psychiatry and has the potential to make significant contributions to the field. The balance of the annual payout will support educational programs in the psychiatry department, such as a lending library for residents and medical students, and trainee-selected lecturers.

Becky Brasington Clark of Baltimore, Md., says she wanted to help establish the prize because it helped her channel her grief into action. "This field has done so much to help my family, and I really want prospective psychiatrists to know how powerfully their work can improve lives," she says. "The work is difficult, patients and families can be challenging, and you don't see too many miracles. This award gives us a way to encourage promising physicians to embrace the challenges and move the field forward."

Charles F. Zorumski, MD, the Samuel B. Guzé Professor and head of the Department of Psychiatry, calls the Brasington family gift truly inspirational. "Richard, Becky and their families have turned tragedies into an ongoing source of hope," he says. "Psychiatry is a field of disease management and incremental progress. Investing in medical students and medical education is one of the best things that can be done to promote the future of psychiatry."

Rick has two other sons and a daughter. Ned is a second-year law student at the University of Iowa, William is an actor in Los Angeles, and Liz is a senior at Smith College. He says that losing his son James was as difficult as any parent could imagine. But he decided that it was necessary for him to accept this tragedy and find a way to go on with life.

"Mental illness is not a weakness; it's an illness," says Rick, who notes that many other members of his family have battled depression. "I want students who didn't know Phil and James to realize that this disease killed these two young people that I loved. It also means a lot to me that their names will forever be memorialized in the Department of Psychiatry."

In addition to helping the Brasington family heal, this award serendipitously redeemed Becky's birthday after 32 years; Phil Brasington died on May 3, his sister's birthday. The first James and Philip Brasington Memorial Prize was given May 4. Becky says the award transforms spring from a time of painful anniversaries into a season of purpose and optimism.

"That the first award was presented the day after my 50th birthday gave me a profound sense of joy," she says. "It reminded me that the best way to fight grief is to get busy and *do* something."

Happy times: Richard D. Brasington, MD, and son James celebrate the success of the Marshfield Blades in 1995.



Where you belong!

REunion 2010

APRIL 29–MAY 1



Alumni enjoy an afternoon of Cardinals baseball.

Alumni visit the BJC Institute of Health at Washington University School of Medicine — home of BioMed 21 — during a campus tour led by a current student.



Alumni from across the decades returned to St. Louis to celebrate MD Reunion 2010. In addition to an array of CME opportunities, class parties and the Saturday night Alumni Banquet, participants enjoyed a variety of St. Louis attractions, including a Cardinals baseball game and trips to the Zoo, the Science Center and the Missouri Botanical Garden. Through all the events, alumni were able to reconnect with old friends and reminisce about their years at Washington University School of Medicine.

Photos by Robert Boston and Mark Beaven

Class of 2000 members and their families enjoy an afternoon at Shaw Park.





Joann Data, MD 70, and Marilyn Rymer, MD 70



Jackie Webel and husband, Richard A. Schenkelberg Jr., MD 10, and Alison Whelan, MD 86, HS 89, senior associate dean for education and 2010–11 Alumni Association president.



Shelley Miller, Brent Miller, MD 90, HS 91, George Gibbs, MD 90, and Karen Gibbs

REnew



Douglas Pogue, MD 95, and his wife, Lynne



Christy Schlafly and Edward Schlafly Jr., MD 80, HS 85



Class of 1970 alumni Scot Hickman, MD, William Shearer, MD, and Marilyn Escobedo, MD, reconnect at the Welcome Reception.



Gustav Schonfeld, MD 60, Miriam Schonfeld, Hillel Tobias, MD 60, and Karl Muench, MD 60, gather after morning CME courses.



Eric Green, MD, PhD 87, HS 91, director of the National Human Genome Research Institute at the National Institutes of Health, discusses breakthroughs in genomic medicine.



James Louie, MD 65, Albert Krause Jr., MD 65, and Roger Mell, MD 65, enjoy a moment together at the class dinner.



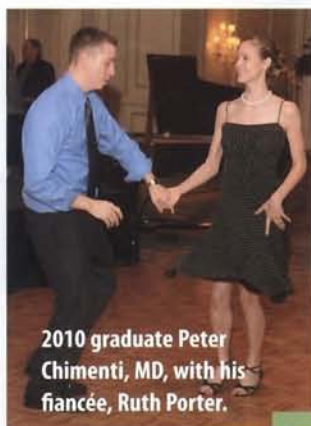
The School of Medicine honored six exceptional alumni, former house staff, and faculty at the Annual Awards Banquet. From left: James Bobrow, MD, HS 78 (Alumni/Faculty Award), David Mutch, MD 80, HS 84 (Alumni/Faculty Award), Bevra Hahn, MD, HS 66 (Distinguished Service Award), Floyd Bloom, MD 60 (Alumni Achievement Award), and W. Edwin Dodson, MD, HS 75 (Distinguished Service Award). Not pictured: Dan Littman, MD, PhD 80 (Alumni Achievement Award).



Maurice Lonsway Jr., MD 50, chats with current medical students Michele Wang, Elaine Khoong and Jared Wilkinson.



Gail Cindrich, Jeff Thomasson, MD 82, Robert Bruce, MD, HS 74, and Suzanne Bruce at the Alumni Awards Banquet.



2010 graduate Peter Chimenti, MD, with his fiancée, Ruth Porter.



Members of the Class of 1975: David Clifford, MD, Henry Mattis, MD, William Cloud Jr., MD, Jo-Elyn Ryall, MD, Sharon Tiefenbrunn, MD, William Benedict, MD, and Gordon Vogel, MD.

REvisit

Class of 1985 members laugh over yearbook photos.



Where you belong!

Save the dates for the
2011 MD Reunion • April 28–May 1



Dean Wochner, MD 60, 2010 Alumni Award recipient, Floyd Bloom, MD 60, and Dean Larry J. Shapiro, MD 71.



Allen Baudendistel, MD 85, HS 89, Elizabeth Hingsbergen, MD 85, Peter Weiss, MD 85, Cynthia Lund and Herluf Lund Jr., MD 85, HS 91.

1950s

Larry Crocker, MD 55

Crocker resides in Madison WI with his wife, Pat. He has retired from internal medicine and is now a self-proclaimed "house-husband" who enjoys spending time with his family. Until very recently, Crocker was playing the banjo professionally with an eight-piece Dixieland band. He also enjoys oil painting and the theater.

Robert C. Drews, MD 55

Drews is currently professor emeritus of clinical ophthalmology and a member of the National Council for Washington University School of Medicine. He resides in a St. Louis retirement villa with Lorene, his wife of 57 years. Drews continues to travel worldwide and also enjoys reading, music and photography.

Phillip B. Foreman, MD 55

Foreman is a retired general surgeon who lives in Hannibal MO with his wife, Priscilla. In his spare time, he likes to sing, garden and take college courses of interest. He is a member of the Mark Twain Foundation Board and the Hannibal Free Clinic Hannibal Regional Hospital Foundation Board.

1960s

Lyman Fogg, MD 60

Fogg retired in 2003 after 38 years of combined hospital and office practice in radiology. His most rewarding professional activities included serving as president of the medical staff and chairman of the Medical Executive Committee at Rockville General Hospital and Eastern Connecticut Health Network in Vernon Rockville CT, where he was also a member of the Board of Trustees from 1991 to 1999. He enjoys spending time with his wife, Sally, at their vacation home in Nantucket MA, visiting their grandchildren, taking long walks and playing golf.

William B. Grubb Jr., MD 60

Grubb resides in Sarasota FL with his wife, Pat. He has retired from radiology and enjoys volunteering for Meals on Wheels and Habitat for Humanity. He also enjoys traveling, playing golf and reading.

Gabriel S. Zatlin, MD 60

Zatlin lives with his wife, Jane, in Brooklyn NY. He is currently a clinical associate professor at the Albert Einstein School of Medicine and a family physician at The Institute for Family Health in New York NY. He volunteers for Care for the Homeless, the Kent Library Association and the Kent Historical Society in Kent CT.

John Forsyth, MD 65

Forsyth retired from private practice after 35 years. He now volunteers as a consultant with three community health centers in Jackson County OR. He has been actively involved in health care reform, providing direct clinical services to low-income families. He enjoys hiking, skiing, reading and taking courses in philosophy and Shakespeare at Southern Oregon University. He lives with his wife, Lynne, in Medford OR.

Jeannie Kinzie, MD 65

Kinzie retired from radiation oncology and nuclear medicine at the Denver VA Hospital in December 2008. She now spends her free time writing books and hiking in the mountains.

James S. Louie, MD 65

Louie lives in Los Angeles CA with his wife, Roella. After he retired from Amgen, he returned to UCLA's rheumatology department, where he is now professor emeritus. He currently lectures on artists with rheumatic diseases and enjoys teaching in Southeast Asia.

F. Thomas Ott, MD 65

Ott resides in St. Louis MO with his wife, Mary. Although he is retired from ophthalmology, he remains busy as a member of the Washington University School of Medicine Admissions Committee. He also enjoys gardening and growing orchids. Ott is a recent past president of The Garden Club of St. Louis.

1970s

Philip O. Alderson, MD 70

Alderson is vice president for Health Sciences and Dean of the School of Medicine at Saint Louis University in St. Louis MO. He was a faculty member from 1980–2008 at Columbia University in New York NY. He is also a member of the Advisory Council for the National Institute for Biomedical Imaging and Bioengineering of the National Institutes of Health. He resides in Des Peres MO with his wife, Marjorie.

Bruce D. Fisher, MD 70

Fisher resides in Edison NJ with his wife, Doris. He is the medical director of QualCare, Inc., and clinical professor of medicine at the University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School in Piscataway NJ. He is co-author of a textbook on microbiology going into its third edition. He teaches all four years in microbiology and internal medicine. In his spare time, he enjoys reading and attending the opera.

Clifton G. Harris III, MD 70

Harris practiced vascular and general surgery for several years before retiring after a significant injury. He has served on local hospital boards, worked as a financial consultant, and is currently a college science instructor. In his spare time, he enjoys farming, drawing, backpacking, woodworking and reading. Harris resides in Visalia CA with his wife, Charmaine.

Lincoln L. Berland, MD 75

Berland is professor emeritus, vice-chairman for quality improvement and patient safety and chief of the Body CT and 3D Laboratory, Department of Radiology at the University of Alabama at Birmingham. He resides in Birmingham with his wife, Nancy.

Jo-Ellyn M. Ryall, MD 75

Ryall is a board-certified psychiatrist in private practice and a member of the Executive Committee of the American Psychiatric Association. In her spare time, she enjoys playing duplicate bridge, gardening and participating in mini-triathlons. Ryall lives in St. Louis MO.

1980s

Robert Fried, MD 80

Fried is currently chief of surgery and vice president of medical affairs at Paoli Hospital in Paoli PA. He is also director of the Holloway Breast Health Center there. He enjoys golf, skiing and travel. Fried resides in West Chester PA.

Howard Steinman, MD 80

Steinman is the director of skin cancer and dermatologic surgery at Scott and White Medical Center and associate professor of dermatology at Texas A&M Health Sciences Center College of Medicine. He has co-authored two surgery textbooks. He lives in Temple City TX with his wife, Diedre.

Heather Edwina Gantzer, MD 85

Gantzer served from 2000–04 as a member of the board of the American Board of Internal Medicine and was designated as Laureate in 2008 by the Minnesota Chapter of the American College of Physicians. Currently she is an internist at the Park Nicollet Clinic, a nocturnist at Methodist Hospital, and governor-elect of the Minnesota Chapter of the American College of Physicians. She resides in St. Louis Park MN with her husband, Charles. In her spare time, she enjoys recreational cross-country skiing, canoeing and walking.

1990s

William Benevento, MD 90

Benevento is an ophthalmologist and the president of Eye Surgeons Associates in Bettendorf IA. He enjoys spending time running, tandem biking, gardening and wine collecting. He resides in Bettendorf with his wife, Judy.

Linda Peterson, MD 90

Peterson is associate professor of medicine and of radiology at Washington University School of Medicine. She enjoys spending time with her children, traveling, waterskiing and swimming. She resides in St. Louis MO with her husband, Clark McKenzie.

Francisco DeLaCruz, MD 95

DeLaCruz is the medical director of anesthesiology at St. Francis Hospital in Litchfield IL. He spends his spare time with his family, mountain biking, canoeing and playing basketball. He lives in Litchfield with his wife, Denise.

Brett Kissela, MD 95

Kissela is assistant professor, co-director of the residency program and vice-chair of education and clinical services for the Department of Neurology at the University of Cincinnati. He resides in Cincinnati OH with his wife, Lorie, and their three children.

2000s

Gretchen A. Champion, MD 00

Champion resides in Allen TX with her husband, **Paul Staveteig, MD 00**, and their two children. She is currently co-director of the Ear, Nose & Throat Centers of Texas and clinical assistant professor in the Department of Otolaryngology at UT Southwestern–Dallas.

Erik Wallace, MD 00

Wallace is associate professor and associate program director at the University of Oklahoma School of Community Medicine. He is a member of the American College of Physicians and Society of General Internal Medicine. He resides in Sapulpa OK with his wife, Nichole, and their two daughters.

IN MEMORY

Edwin G. Krebs, MD 43

Krebs died on Dec. 21, 2009. In 1992, at age 74, he was awarded the Nobel Prize in Physiology or Medicine. Krebs joined the University of Washington School of Medicine faculty in 1948. In the 1950s, he and a colleague, Edmond H. Fischer, PhD, discovered that enzymes that help release energy in cells can be activated and deactivated by the presence of phosphate. The men published their findings without much acclaim. The accolades didn't come until years later, as more scientists discovered that phosphate is a key regulator of many cellular activities and the human body's metabolic processes. Scientists say

that problems with regulatory processes are partly the source of disorders like cancer, diabetes, nerve diseases and heart conditions. Modern drug discovery efforts are aimed at the phosphorylation process, the process Krebs helped discover.

Mary L. Busch, NU 44

Busch, of Holland OH and formerly of St. Louis MO, died on Dec. 18, 2009, at Hospice of Northwest Ohio in Perrysburg. After graduating, she began her career at Barnes Hospital and, in 1958, began working as an industrial nurse with McDonnell Aircraft (Boeing) where she was head nurse on the Mercury Space Project.

W. Dow Edgerton, MD 47

Edgerton died on Dec. 13, 2009. He was in private practice in obstetrics and gynecology until his retirement in 1986. He was instrumental in forming the Maternal Health Center (now the Edgerton Women's Health Center) in Davenport IA to provide ob-gyn care to low-income women, serving as its director for 28 years. He developed an early interest in laparoscopy and taught the procedure to other physicians around the world, and he served as chief of obstetrics and gynecology and as president of the medical staff at area hospitals.

Johnnie Farmer Geisz, NU 51

Geisz died on Feb. 25, 2010. She graduated from Central High School of Tulsa in 1946, pursued further studies at what became Oklahoma State University in Stillwater and later graduated from Washington University School of Nursing with a Bachelor of Science. She married William Frank Geisz in 1951, and they had seven children. In St. Louis, her involvement at Hanley Road Baptist Church and Parkway Baptist Church included leadership roles in women's and mission ministries, teaching and singing in the choir.

Raymond M. Keltner Jr., MD 57

Keltner died on March 20, 2010. After graduating from Washington University School of Medicine, he trained in surgery at Barnes Hospital and served in the U.S. Navy. He then joined the faculty of the Department of Surgery where, along with William Newton, MD, he performed the first kidney transplants in St. Louis. In 1964, he joined Carl Moyer, MD (for-

mer Washington University School of Medicine Department of Surgery chair) in private surgical practice in Houghton MI. Returning to St. Louis in 1968, he joined the Department of Surgery at Saint Louis University and was chief of surgery at St. Louis City Hospital until its closing in 1985. He continued to teach students, interns and surgical residents until he retired in 1994 as professor emeritus of surgery.

David Near, MD 59

Near, a highly regarded surgeon, died on Feb. 25, 2010. Long associated with Florissant Medical Center and Christian Hospital, he was a Fellow of the American College of Surgeons and had served on the Board of Directors in long-range planning for Christian Hospital.

Charles L. Parks, MD 69

Parks, of Chesterfield MO, died on Feb. 7, 2010, at age 66. Employed as a surgeon at SSM Medical Group, Parks was known as an excellent surgeon and a kind and compassionate person.

Nathan Edward Hellman, MD, PhD 03

Hellman, a 2003 graduate of Washington University School of Medicine's Medical Scientist Training Program, died on Feb. 13, 2010, from a stroke. He attended Duluth East High School, where he was editor of the newspaper, played basketball, ran track and competed on the Knowledge Bowl team. He graduated magna cum laude from Yale University with a degree in molecular biology and biophysics and was Phi Beta Kappa. He then earned MD and PhD degrees from Washington University, completing his thesis work on multifunction oxidases and ceruloplasmin. Hellman completed his residency in internal medicine at the University of Pennsylvania, where he received the basic science award. In 2006, he received a Fulbright Scholarship to study renal cystic disease. He then completed a renal fellowship at Harvard University. Hellman truly loved his time at Washington University — the science, the medical training and the friendships. It was during his time in St. Louis that he met his wife, Claire. Hellman's parents — Richard, a former renal fellow at Washington University, and Patricia — and

the members of the Class of 2000 have established the Nathan Edward Hellman, MD, PhD Memorial Award.

FACULTY

I. Jerome Flance, MD 35

Flance, emeritus clinical professor of medicine, died April 2, 2010. He was 98. Flance spearheaded the university's development of the Forest Park Southeast neighborhood. He received many honors, including the 2nd Century Award and an honorary doctorate in humanities. In addition, a visiting lectureship, a professorship of pulmonary medicine and a distinguished alumni scholarship were established in his name. Flance was born in Brooklyn NY and attended City College. He moved to St. Louis in 1929 to attend Washington University, earning a bachelor's degree and a medical degree. He is survived by his wife, Rosemary; a son, Stephen Flance; a daughter, Patty Croughan; eight grandchildren, and nine great-grandchildren.

Saulo Klahr, MD

Klahr, former director of the Renal Division of the Department of Medicine, died June 3, 2010. He was 74. Klahr was on the Washington University School of Medicine faculty for 44 years until his retirement in 2007. He was widely known for his research into the causes of kidney disease, kidney metabolism and physiology, and regulatory control of fluid and electrolyte balance. In 1994, he was honored by the American Association for the Advancement of Science for his groundbreaking research into the causes of kidney diseases and for his service and leadership in the field of nephrology. Klahr earned a medical degree from Universidad Nacional in Bogotá, Colombia, in 1961. He came to Washington University School of Medicine that same year as a postdoctoral fellow, and then joined the faculty as an instructor in 1963. He became full professor and director of the Renal Division in 1972, a position he held for 20 years. He then became co-chair of the Department of Medicine and chief of medicine at Jewish Hospital. In 1991, Klahr was named the John E. and Adaline Simon Professor

in Medicine. He served as president of the American Society of Nephrology and of the National Kidney Foundation. He is survived by his wife, Carol; sons James and Robert; a brother; a sister; and four grandchildren.

Joseph C. "Bo" Koster, PhD 96

Koster, research assistant professor of cell biology and physiology, died Feb. 23, 2010. He was 45. Koster had been in the Department of Cell Biology and Physiology since he was a graduate student. He started working as a research assistant in cardiology in 1987 and earned a doctorate in cell biology and physiology in 1996. He researched the mechanism of insulin release by the pancreas and discovered one of the fundamental causes of neonatal diabetes. He enjoyed running, bird-watching and the St. Louis Rams. He is survived by a brother, a sister and nephews.

Roy R. Peterson, PhD

Peterson, professor emeritus of anatomy, died July 2, 2010. He was 86. He joined the faculty in 1952 as an anatomy instructor and taught until his retirement in 1988. He was named an Alumni Teaching Scholar and awarded Teacher of the Year four times. He became director of the division of gross anatomy in 1974. After he retired, a group of students, faculty, alumni and friends wanted to honor his service in a way that would reflect both his long-standing commitment to first-year medical students and to the anatomy course he taught and loved for so many years. The Department of Anatomy and Neurobiology now gives an award in Peterson's honor annually to a first-year medical student for outstanding achievement in the Human Anatomy course. He is survived by his wife, Dixie; sons Paul and Richard; daughters Karen Peterson and Susan Hawkins; seven grandchildren and four great-grandchildren.

If you would like to make a tribute in honor of any of the aforementioned alumni or faculty, please contact: Brian DeFilippis, Washington University Medical Alumni and Development, 7425 Forsyth Blvd., Campus Box 1247, St. Louis MO 63105, (314) 935-9711.

Scholars in Medicine

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- Scholarship support is one of the highest priorities of the School of Medicine. As the costs of medical education continue to increase, it is our goal to provide financial support that reduces debt upon graduation and allows students to make career choices based more on passion and less on income.

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- You will receive an invitation to the annual scholarship dinner.

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PERMANENTLY ENDOWED SCHOLARSHIPS

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Founder's Endowed Scholarship	\$500,000
Sustaining Endowed Scholarship	\$250,000
Endowed Scholarship	\$100,000



Scholarship support
Fourth-year medical student Victoria Yom with Ann Randolph Flipse, MD 59, at the second annual Scholars in Medicine Donor Recognition Dinner. Yom was the 2009-10 recipient of the Ann Randolph Flipse, MD Scholarship at Washington University School of Medicine.

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If you wish to make a gift or request more information, please complete and return this card. Or call the Office of Medical Alumni and Development at (314) 935-9691 for a personal consultation. Thank you for your interest and ongoing support of the School's vital mission.

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Downtown view

"St. Louis Courthouse Reflection," created by Rosalie A. Veile, staff scientist in the Department of Genetics, is included in the 2010 issue of *Hippocrene*, Washington University School of Medicine's arts magazine. Published annually by and for the school's students, faculty and staff, *Hippocrene* is supported by the WUSM Arts Commission, the Alumni Association and the Office of Admissions. Other efforts supported by the Arts Commission include the annual arts show, the annual musical, and its Coffeehouse Concert Series. For more information or to download a copy of *Hippocrene*, please visit hippocrene.wustl.edu.



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