



PENN Medicine

FALL 2011



GROSS ANATOMY: A TRADITION CONTINUES

A New Home for Penn's Thriving
Translational Research
When Einstein's Brain Was at Penn
Doctoring 101: Learning About Dying

Aspirations and Opportunities

Philadelphia is rightly proud of its remarkable place in American history. This includes the field of medicine, with the founding nearly 250 years ago of the nation's first medical school at the University of Pennsylvania. Nonetheless, some feel that we have a predisposition to underplay our rich legacy and long record of accomplishment – perhaps as a reflection of the Quaker influence of William Penn and the early colonists. This may or may not be true, but that same heritage of reticence gave birth to a culture that valued humility, deep reflection, and tolerance. By comparison, other cities are not as hesitant in declaring their own greatness. As a newcomer to Penn, recently arrived from Chicago, I am keenly aware of these differences. For example, the poet Carl Sandburg described Chicago as “Stormy, husky, brawling, / City of the Big Shoulders.” Many decades later, few in that city would disagree.

But times have been changing in Philadelphia and at Penn Medicine. There is broad recognition on campus that we have much to be proud of – and that by proclaiming our accomplishments, we provide added reassurance to our patients, draw in the best faculty members and students, and help disseminate our research advances nationally and globally. For example, in 1995 Penn Medicine launched a fund-raising campaign boldly called “Creating the Future of Medicine.” And the strategic plan initiated by my outstanding predecessor and friend Dr. Arthur Rubenstein laid out such goals as developing “world-leading programs” in select areas of research and building “superb clinical programs.” And today Penn Medicine is a crucial part of the University's campaign, “Making History.” Can we back up these claims and aspirations?

I believe that we can. For the second straight year, the Perelman School of Medicine was ranked #2 among the nation's research-oriented medical schools by *U.S. News & World Report*. For 14 straight years we have been ranked among the top five in the same category. And we continue to receive large numbers of applications from some of the most accomplished and dedicated students in the nation (many of whom I had the pleasure of meeting at this year's White Coat Ceremony).

In addition, for the fourth consecutive year the Hospital of the University of Pennsylvania was ranked among the country's top ten hospitals by *U.S. News* and included in its Honor Roll for exceptional performance. Our research sup-



port, particularly from the National Institutes of Health, is consistently strong. The Health System is pushing ahead with important initiatives, such as unit-based clinical leadership, which is making major contributions toward reducing mortality, and knowledge-based charting, which offers caregivers immediate access to patient information right at the bedside. In short, I believe the record confirms that Dr. Rubenstein was right: we at Penn Medicine are indeed a guiding force in academic medicine.

And there's more. This spring, our medical school received an extraordinarily generous \$225 million gift from Raymond and Ruth Perelman. President Gutmann called this naming gift “transformational,” affirming that it will keep us at the pinnacle of global medical care, investigation, and instruction.

The opening of our Translational Research Center in May also helps us stand tall in a crowded field. Translational medicine represents one of the most promising directions in medicine, and our leadership in the field will be immeasurably fortified by this amazing new facility. New knowledge and treatments from our translational investigators and clinicians, creative collaborations across disciplines and departments, and an ethos of high expectations among those who enter the facility – all embody the future of medicine at the highest level.

When I came to Penn, I quickly learned the priority placed on the “Making History” campaign. This emphasis is certainly paying off. Both the larger goal and the goal for Penn Medicine have already been reached a full year before the campaign closes (and as the nation remains in an economic standstill). This inspiring generosity

speaks volumes about the deep loyalty and commitment to our institution by its graduates, friends, and admirers. Perhaps I should not have been surprised, because even before I took office I received literally hundreds of messages of encouragement (and no small number of suggestions!) from our own alumni.

Dr. Rubenstein made a characteristically wise move when he initiated his strategic plan in 2003. The ensuing effort was comprehensive in its sweep and laid an excellent foundation for:

- impressive clinical growth with a renewed focus on quality
- the creation of new centers and institutes to promote translational research, and
- the recruitment of exceptionally talented faculty and staff members, students, residents, and fellows.

A lot has happened since then and, as a result, we've begun the process of developing a new strategic plan for Penn Medicine. We're fortunate that we can approach our future from positions of strength in each of our central mission areas of research, education, and patient care. The new plan will build on these assets and make full use of our strong connections to the university at large. We're confident that it will help prepare the way for more great achievements in the years to come.

I've asked two of our talented leaders, Deborah Driscoll and Jon Epstein, to co-chair the planning process, and they've graciously agreed. They're already hard at work, beginning with a recent retreat of department chairs, center and institute directors, senior faculty members, and administrators. At the session we identified six thematic areas that will anchor the plan, and we have established working groups for each.

Our commitment is to an inclusive planning process as well as one that makes its workings visible to all. Therefore we'll be using web sites, blogs, e-mails, newsletters, and in-person meetings to elicit ideas and keep everyone informed. I'll be keeping you up to date about our progress as well. I also urge you to weigh in by sending me your own hopes and aspirations for our future. Our obligation to excellence will be best achieved through the active contributions of the many talented people who make up the Penn Medicine family – including you! ♥

J. Larry Jameson, M.D., Ph.D.
Executive Vice President of the University of Pennsylvania for the Health System
Dean, Perelman School of Medicine



THE ANATOMY LESSON

By Marshall A. Ledger

The University has a distinguished tradition in gross anatomy. In fact, the course was on the medical program's first roster, in 1765. Even with today's technical and educational advances, medical students continue to learn essential lessons in such classes.



A RITE OF PASSAGE – AND MUCH MORE

By Mark Attiah

A second-year medical student looks back at his anatomy lab, when doctors-in-training experience having an actual dead body in front of them for the first time. Students at Penn and other local schools can also join in a ceremony to honor the donors who gave their bodies.



“OUR HOPE FOR THE FUTURE OF MEDICINE AT PENN”

By John Shea

The Translational Research Center, dedicated in May, will enhance interactions and collaborations among scientists, clinicians, trainees, and students of different departments and disciplines. The overarching goal is to bring the fruits of research to the patient as swiftly and safely as possible.



WHAT EVER HAPPENED TO EINSTEIN'S BRAIN?

By Marshall A. Ledger

The 20th century's most famous brain had an unusual post-mortem journey. One stop along the way was Penn's pathology lab, where Einstein's brain was brought for sectioning and slicing, in preparation for research.

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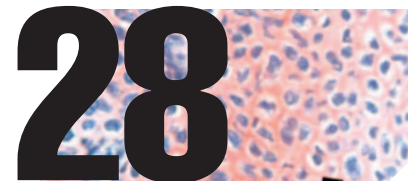
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LEARNING ABOUT DYING

By Jennifer Baldino Bonett

Doctoring 101 is unlike the other classes medical students take. In some sessions, it brings patients and family members to speak to them about complex topics beyond the basic and physical sciences. One such topic: hospice.



A NEW CENTER WILL TACKLE “ORPHAN” DISEASES

By John Shea

Thanks to a \$10 million gift from an anonymous donor, the Perelman School of Medicine has launched the first center of its kind. The interdisciplinary center will bring together approaches to attacking and treating rare diseases that otherwise might be overlooked.



A VIEW FROM BOTH SIDES OF THE BED

By Marcelle J. Shapiro, M.D.

At this year's White Coat Ceremony, Dr. Shapiro, an alumna, shared the story of her medical crisis – and some lessons it helped underscore for health-care professionals in their dealings with patients.



PROVIDING A VOICE FOR VICTIMS OF DISASTER

By Gregory Richter

In a new book, a Penn medical student and his writing partner tell the story of a flood that ravaged a city in India. To do the necessary research, Utpal Sandesara returned to his family's old home.

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A Medal for Distinguished Achievement



Photograph by Daniel Burke

Wearing his medal and an honorary white coat, Raymond Perelman is flanked by J. Larry Jameson, left, and Arthur H. Rubenstein.

At a reception to celebrate the naming of the Raymond and Ruth Perelman School of Medicine, Amy Gutmann, Ph.D., president of the University, presented Raymond Perelman with the University of Pennsylvania Medal for Distinguished Achievement. The medal, created in 1993, is awarded periodically “to those individuals whose performance is in keeping with the highest goals of the University and who have contributed to the world through innovative acts of scholarship, scientific discovery, artistic creativity, or societal leadership.” In May, Perelman and his late wife, Ruth Perelman, donated \$225 million to Penn – the largest single gift in

the University’s history – to benefit the School of Medicine.

A prominent Philadelphia philanthropist, Perelman has been a member of the Penn Medicine Board of Trustees and has championed the importance of advances in health-care education and innovation.

Mr. Perelman’s wife, Ruth, passed away on July 31. In a statement, Gutmann noted that the University of Pennsylvania “benefitted invaluablely from her tireless generosity and that of Raymond and their family. Ruth’s generous spirit and strong commitment to education, medicine, and culture in Philadelphia will be remembered for countless generations to come.”

Speeding Discovery to Patient Care

Three laboratories at the University of Pennsylvania have received \$12.5 million from the National Institutes of Health

(NIH) as part of its \$143.8 million national grant program. Its goal is to challenge the scientific status quo with innovative ideas that have the potential to speed the translation of medical research into improved health for the American public.

These awards are granted under three innovative research programs supported by the NIH Common Fund: the NIH Director’s Pioneer, New Innovator, and Transformative Research Projects Awards. The Common Fund, enacted into law by Congress through the 2006 NIH Reform Act, supports NIH programs with a particular emphasis on innovation and risk taking.

Penn has recipients in each of the three categories.

The key investigators on the Pioneer Award are Jean Bennett, M.D., Ph.D., principal investigator of the study; Luk Vandenbergh, Ph.D.; and Albert M. Maguire, M.D., all at the F. M. Kirby Center for Molecular Ophthalmology and Scheie Eye Institute. They have been awarded \$4 million over the next five years to use gene therapy to treat inherited forms of blindness, which can be caused by mutations in any of hundreds of different genes. The researchers plan to develop a small number of therapeutics that could restore vision to millions of patients who are blind because of a diverse set of retinal disorders. They propose re-sensitizing the blind eye by delivering light-sensitive molecules to the remaining retinal cells. This “optogenetic therapy” approach takes advantage of circuitry between the retina and the brain that remains intact in many individuals long after they have become blind. Preclinical studies in blind animals have demonstrated that this strategy is effective.

Arjun Raj, Ph.D., assistant professor of bioengineering in the School of Engineering and Applied Science, received the New Innovator Award, for \$1.5 million over five years. His research involves developing and applying new microscopic imaging tools to reveal how the physical organization of the genetic code determines the manner in which the cell reads the code itself. The development of these methods will establish a “nuclear GPS,” which would

allow researchers to directly visualize genetic organization in single cells. Understanding this organization will be important for elucidating how defects in translating the genetic code contribute to such diseases as cancer.

A team of researchers from the Perelman School of Medicine, Emory University, and Georgia Tech received a \$7 million, five-year Transformative Research Project Award. The team includes Sunil Singhal, M.D., director of Penn's Thoracic Surgery Research Laboratory. If a tumor is more visible and easier to distinguish from surrounding tissues, surgeons will be more likely to be able to remove it completely. To that end, the team has developed fluorescent nanoparticle probes that home in on cancer cells. The researchers' main goals are to help surgeons distinguish tumor edges, identify diseased lymph nodes, and determine if the tumor has been completely removed. Having these capabilities can be expected to have a major impact in reducing recurrence rates of lung cancer after surgery. The proposed technologies could be broadly applicable to many types of solid tumors.

According to James M. Anderson, M.D., Ph.D., who guides the Common Fund's High-Risk Research program, "The awards are intended to catalyze giant leaps forward for any area of biomedical research, allowing investigators to go in entirely new directions."

– Karen Kreeger

The Problem of Health-care-Acquired Infections

Penn's Center for Clinical Epidemiology and Biostatistics (CEEB) has received a \$2 million grant from the Centers for Disease Control and Prevention. The grant, which covers five years, will fund research to find new ways to reduce infections in health-care settings. CCEB is

one of five academic medical centers across the nation that received the funding. Ebbing Lautenbach, M.D., M.P.H., M.S.C.E., associate professor of medicine and of epidemiology, will head Penn Medicine's program. Its focus is on the use of biomarkers, such as C-reactive protein, to improve the use of antibiotics in intensive-care settings. The Centers for Disease Control and Prevention estimates that 1 out of 20 hospitalized patients will become infected while receiving hospital care for other health conditions.

On the same topic, a study in *Infection Control and Hospital Epidemiology* suggests that as many as 70 percent of certain

cases of health-care-acquired infections may be preventable by making use of current evidence-based strategies. Craig A. Umscheid, M.D., M.S.C.E., assistant professor of medicine and of epidemiology, and five Penn colleagues used estimates from national reports and published studies related to health-care-acquired infections. Their study proposes that if best practices in infection control were applied at all U.S. hospitals, reducing the number of cases of bloodstream infections associated with the use of catheters could save as many as 5,520 to 20,239 lives per year. In the same manner, for ventilator-associated pneumonia,



Photograph by Daniel Burke

Chairs Times Four

John Tomaszewski, M.D. '77, G.M.E. '83, a longtime member of the Department of Pathology and Laboratory Medicine and most recently its interim chair, has joined the School of Medicine and Biomedical Sciences at the University at Buffalo. He is chair of its Department of Pathology and Anatomical Sciences. Tomaszewski is cur-

rently serving as president of the American Society for Clinical Pathology. Among those attending his farewell reception at Penn Medicine were three of the previous department chairs. Shown from left to right: Tomaszewski; Leonard Jarett, M.D.; David B. Roth, M.D., Ph.D., the current chair; and Mark L. Tykocinski, M.D.

13,667 to 19,782 lives per year; for urinary tract infections associated with catheters, 2,225-9,031 lives per year; and for surgical site infections, 2,133 to 4,431 lives per year.

Examples of current prevention strategies include educating clinicians, washing hands, taking the maximum precautions with sterile barrier during catheter insertion, using chlorhexidine to disinfect catheters and surgical sites, removing unnecessary catheters promptly, and using antibiotics appropriately.

Reducing hospital-acquired infections also saves money. Based on the studies

examined, preventable cases of bloodstream infections associated with catheters are likely to have the highest associated costs, ranging anywhere from \$960 million to \$18.2 billion per year. Similarly, the hospital costs of preventable ventilator-associated pneumonia are estimated to be \$2.19 billion to \$3.17 billion per year.

According to Umscheid, who serves as director of the Center for Evidence-based Practice, “Given the limitations of the data used in this study and the resulting uncertainty in our estimates, it is our hope that this study guides future research to accurately measure the impact of strate-

gies to reduce health-care-acquired infections, as well as the incremental costs of these infections.”

Schizophrenia and How the Brain Processes Sound

Recent studies have identified many genes that may put people with schizophrenia at risk for the disease. But what links genetic differences to changes in altered brain activity in schizophrenia is not clear. Now, three laboratories at the Perelman School of Medicine have come together using electrophysiological, ana-

The IOM Selects Three

Three members of the Perelman School of Medicine faculty have been elected to the Institute of Medicine, one of the nation’s highest honors in biomedicine. The new members bring Penn’s total to 75, out of a total active membership of 1,688. Established in 1970 by the National Academy of Sciences, the Institute honors professional achievement in the health sciences and serves as a national resource for independent analysis and recommendations on issues related to medicine, biomedical sciences, and health.

The new Penn IOM members are:

Vivian G. Cheung, M.D., professor of genetics and of pediatrics and an investigator of the Howard Hughes Medical Institute. A pediatric neurologist, Cheung studies human genetics and genomics. In particular, her laboratory combines computational and experimental methods to study normal variation in human traits and genetics of complex diseases. She and her colleagues demonstrated that like other quantitative traits, expression levels of genes are variable and genetically regulated. More recently, this work has led them to a surprising finding that



Vivian G. Cheung, M.D.

questions the fundamental step of how DNA is copied into RNA and proteins. In 2010, Cheung received the Curt Stern Award from the American Society of Human Genetics, honored for her outstanding contributions to genetic research. She is a councilor of the American Society for Clinical Investigation and serves on the board of directors of the American Society of Human Genetics. Cheung also serves as the William Wikoff Smith Chair of Pediatric Genomics at the Children’s Hospital of Philadelphia.

Paul Offit, M.D., professor of pediatrics. He is director of the Vaccine Education Center and chief of infectious diseases at The Children’s Hospital of Philadelphia. In addition, Offit holds the Maurice R. Hilleman Endowed Chair in Vaccinology. During his tenure as a pediatrician specializing in infectious diseases, Offit developed RotaTeq, one of the main vaccines currently used to fight rotavirus, the leading cause of severe, dehydrating diarrhea in infants and young



Paul Offit, M.D.

tomical, and immunohistochemical approaches – along with a unique high-speed imaging technique – to understand how schizophrenia works at the cellular level. In particular, they are identifying how changes in the interaction between different types of nerve cells lead to symptoms of the disease. The findings were reported in the *Proceedings of the National Academy of Sciences* in October.

“Our work provides a model linking genetic risk factors for schizophrenia to a functional disruption in how the brain responds to sound, by identifying reduced activity in special nerve cells that are de-

children. He is also one of the most public faces of the scientific consensus that vaccines have no association with autism. Through his advocacy, Dr. Offit has successfully cut through misinformation and helped to educate parents on the health benefits of vaccinating their children. Offit has also received the 2011 David E. Rogers Award, from the Association of American Medical Colleges, in recognition of both his work with RotaTeq and his public advocacy. According to the A.A.M.C., since the inclusion of RotaTeq in the recommended U.S. vaccination schedule by the Centers for Disease Control and Prevention, the number of hospitalizations for rotavirus diarrhea has decreased by 90 percent.

Daniel J. Rader, M.D., the Cooper-McClure Professor of Medicine and chief of the Division of Translational Medicine and Human Genetics in the Department of Medicine. He is also associate director of Penn’s Institute for Translational Medicine and Therapeutics and director of the preventive cardiology program at Penn Medicine. Rader’s basic research laboratory focuses on genetic and pharmaco-

signed to make other cells in the brain work together at a very fast pace,” explains the lead author, Gregory Carlson, Ph.D., assistant professor of neuroscience in psychiatry. “We know that in schizophrenia this ability is reduced, and now, knowing more about why this happens may help explain how loss of a protein called dysbindin leads to some symptoms of schizophrenia.”

For the current *PNAS* study, Carlson, Steven J. Siegel, M.D., Ph.D., associate professor of psychiatry and director of the Translational Neuroscience Program, and Steven E. Arnold, M.D., professor of

logic regulation of lipoprotein metabolism and atherosclerosis, and he directs a translational research program focusing on human genetics of lipid disorders and



Daniel J. Rader, M.D.

atherosclerosis and novel approaches to the treatment of dyslipidemia and atherosclerosis. He is a recipient of several awards, including the Burroughs Wellcome Fund Clinical Scientist Award in Translational Research. Rader is a member of the Board of External Experts of the National Heart, Lung, and Blood Institute.

psychiatry and director of the Penn Memory Center, used a mouse with a mutated dysbindin gene to understand how reduced dysbindin protein may cause symptoms of schizophrenia.

The team demonstrated a number of sound-processing deficits in the brains of mice with the mutated gene. They discovered how a specific set of nerve cells that control fast brain activity lose their effectiveness when dysbindin protein levels are reduced. These specific nerve cells inhibit activity, but do so in an extremely fast pace, essentially turning large numbers of cells on and off very quickly in a way that is necessary for normally process the large amount of information travelling into and around the brain.

Other previous work at Penn in the lab of Michael Kahana, Ph.D., has shown that, in humans, the fast brain activity that is disrupted in mice with the dysbindin mutation is also important for short-term memory. This type of brain activity is reduced in people with schizophrenia and is resistant to current therapy. Taken as a whole, says Carlson, this work may suggest new avenues of treatment for currently untreatable symptoms of schizophrenia.

– Karen Kreeger

Honors & Awards

Joel S. Bennett, M.D., professor of medicine in Penn’s Division of Hematology/Oncology, and **Barry S. Collier, M.D.**, vice president for medical affairs and physician-in-chief at the Rockefeller University, received the Ernest T. Beutler Lecture and Prize. The highest honor given annually by the American Society of Hematology, the Beutler Prize is given to a basic scientist and a clinical investigator whose work fundamentally changed the field of medicine. Bennett was recognized for his pioneering laboratory research on the integrin receptor, GPIIb-IIIa. Collier

was recognized for advancing Bennett's discoveries into a widely used drug.

Clifford S. Deutschman, M.D., professor of anesthesiology and critical care and an attending physician on the Surgical Critical Care Service at HUP, was elected president-elect of the Society of Critical Care Medicine, the leading international organization dedicated to ensuring excellence and consistency in the care of critically ill and injured patients. Deutschman, an internationally known sepsis investiga-

tor, has served for eight years as a member of society's council.

Susan Ellenberg, Ph.D., professor of biostatistics in the Department of Biostatistics and Epidemiology and the School of Medicine's associate dean for clinical research, was appointed chair of the board of trustees of the National Institute of Statistical Sciences. Her research has focused on practical problems and ethical issues in designing, conducting, and analyzing data from clinical trials, including surrogate endpoints, data monitoring committees, clinical trial designs, adverse event monitoring, vaccine safety and special issues in cancer and AIDS trials. In addition to her teaching and administrative duties, Ellenberg serves as senior statistician for three multicenter clinical trials and directs the Biostatistics Core of the Penn Center for AIDS Research.

Judd Hollander, M.D., professor of emergency medicine and clinical research director for the Department of Emergency Medicine, had received the Leadership Award from the Society for Academic Emergency Medicine. It is considered one of the most prestigious awards in the field of emergency medicine. Hollander's primary area of research pertains to emergency care for patients with acute cardiac problems; he has conducted extensive research about the use of CT angiography in patients with chest pain. A former president of the Society, is credited with establishing the Academic Associate Emergency Medicine Research Program, which forms the backbone of one of field's most successful and most replicated clinical research programs.

David W. Kennedy, M.D., professor in the Department of Otorhinolaryngology – Head and Neck Surgery, received the Clinical Excellence Award of Castle Con-

nolly Medical Ltd. The award, from the creators of America's Top Doctors® guide, is designed to recognize physicians who exemplify excellence in clinical medical practice and is part of their National Physician of the Year Award honors. Kennedy is widely noted for bringing endoscopic sinus surgery to the United States and fundamentally changing how these procedures are performed. Kennedy has also helped advance image-guided surgery, minimally invasive endoscopic skull base surgery, and trans-nasal endoscopic orbital surgery.

Jack Ludmir, M.D., G.M.E. '87, professor and chair of obstetrics and gynecology at Pennsylvania Hospital, was appointed the 2011 chair of the Section for Maternal and Child Health of the American Hospital Association. Ludmir also serves as vice chair of obstetrics and gynecology at HUP. He has spearheaded several quality and patient-safety initiatives in obstetrics, including the successful introduction of Philadelphia's first laborist practice – a model that focuses on providing in-hospital labor and delivery care – at Pennsylvania Hospital.

An advocate for making high-quality obstetrical care available to the most vulnerable populations, Ludmir has worked with Women and Children's Health Services in Philadelphia and is coordinator for the Dominican Republic Section of the American Congress of Obstetricians and Gynecologists. For these efforts, he was recently awarded the organization's Award for Outstanding District Service.

Teresa M. Reyes, Ph.D., research assistant professor of pharmacology, has been appointed to the NIH Study Section on Neuroendocrinology, Neuroimmunology, Rhythms, and Sleep Study Section. Her research interests include the central nervous system circuitry that controls food intake and metabolism; anorexia and cachexia associated with illness and

Fellows Three

Three University professors were named Fellows of the American Association for the Advancement of Science, two of whom are professors in the Perelman School of Medicine.

James C. Alwine, M.D., professor of cancer biology, is also associate director for core facilities at the Abramson Cancer Center. His laboratory has been at the forefront of studying how DNA viruses alter cellular signaling in order to manipulate stress responses for the advantage of the infection.

Gideon Dreyfuss, Ph.D., the Issac Norris Professor of Biochemistry and Biophysics, is a Howard Hughes Medical Institute investigator. He studies RNA-binding proteins and their complexes with RNAs (RNPs), the key mediators of post-transcriptional gene regulation, and their role in disease. His current research focuses spinal muscular atrophy, the motor neuron degenerative disease; splicing regulation; and high-throughput technologies for research and drug discovery.

John C. Trueswell, Ph.D., is a professor of psychology in the School of Arts and Sciences. His areas of research are developmental psychology; language and communication; memory and learning; and sensation and perception.

infection; development of obesity and metabolic syndrome in response to maternal and fetal undernutrition, stress, or infection.

Judy A. Shea, Ph.D., associate dean of medical education research and professor of medicine in the internal medicine di-



Judy A. Shea, Ph.D.

vision, was the recipient of the 2011 Career Achievement in Medical Education Award of the Society of General Internal Medicine. In particular, the Society noted Shea's work in evaluating medical programs and developing instruments to measure efficacy. Shea also received this year's John P. Hubbard Award from the National Board of Medical Examiners for her sustained contributions to advancing the methodology of evaluation in medicine. According to the award committee, her work has had "substantial impact on medical education processes and in multiple organizations."

Jason L. Schwartz, associate fellow at the Center for Bioethics and doctoral candidate in the Department of History and Sociology of Science in the School of Arts & Sciences, was elected to the board of directors of the American Society for Bioethics and Humanities. The society is the national professional organization for

scholars in clinical and academic bioethics and the medical humanities.

Thomas Sollecito, D.D.M., chair of the Department of Oral Medicine in Penn's School of Dental Medicine and chief of the oral medicine service at HUP, was named president of the board of trustees of the American Academy of Oral Medicine. He has been active in leadership roles on the board over the past several years.

Scott O. Trerotola, M.D. '86, the Stanley Baum Professor of Radiology and professor of surgery, received the 2011 Leaders in Innovation Award from the Society of Interventional Radiology. The honor recognizes an individual who has conceptualized and implemented an idea that has had an impact on the practice of interventional radiology. Trerotola, who is also associate chair and chief of vascular and interventional radiology, holds eight patents on devices for interventional procedures. His extensive contributions to the field of hemodialysis access interventions have helped shape the role of interventional radiology in this field. Trerotola also received the 2010 Louis Duhring Outstanding Clinical Specialist Award,



Scott O. Trerotola, M.D.

one of the annual Awards of Excellence presented by the School of Medicine to the medical faculty.

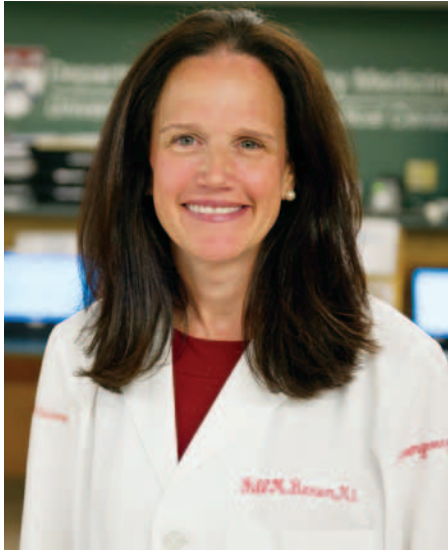
Kelly C. Wade, M.D., Ph.D., G.M.E. '03, a neonatologist at Pennsylvania Hospital and the Children's Hospital of Philadelphia, was named Physician of the Year by PRO-LC, a local organization that promotes, supports, and protects breastfeeding. Wade, an academic clinical assistant professor, worked with nurses and lactation consultants to create an education module that supports NICU babies and their parents in establishing breastfeeding. She also ensures that medical students learn about breastfeeding during their training. As a neonatologist, Wade advocates for breast milk as the gold standard for premature babies.

Alan J. Wein, M.D., received the Ferdinand C. Valentine Award in Urology from the Section on Urology of the New York Academy of Medicine. Chief of the division of urology, Wein serves as director of HUP's Urology Residency Program. The award selection committee noted Wein's "uncanny ability to sift through huge volumes of data and extract those which drive clinical practice. He is one of the world's great technical urological surgeons." Wein is a former vice president of the American Board of Urology and is editor in chief of *Campbell-Walsh Urology*, considered the gold standard in the field.

Zhaolan (Joe) Zhou, Ph.D., assistant professor of genetics, was one of 12 investigators across the nation who received 2010 Biobehavioral Research Awards for Innovative New Scientists (BRAINS) from the National Institute of Mental Health. Individual awards are made in the vicinity of \$2.5 million over five years. Zhou will use mouse models to examine the molecular underpinnings that link early life stress and subsequent mental illness.

Transitions

Jill M. Baren, M.D., M.S.E. '06, has been named chair of the Department of Emergency Medicine. A member of Penn's medical faculty since 1997, she is professor of emergency medicine and



Jill M. Baren, M.D., M.S.E.

holds a secondary appointment as professor of pediatrics. Baren is an attending physician at both HUP and The Children's Hospital of Philadelphia. She succeeds William G. Baxt, M.D., who served with distinction as chair since 1994, when the Department of Emergency Medicine was established.

Baren is recognized as an expert in pediatric emergency medicine. A fellow of both the American College of Emergency Medicine and the American Academy of Pediatrics, she has held major leadership positions in professional organizations of both specialties. She has lectured and written on informed consent issues in emergency medicine research, bioethical issues in resuscitation, and end-of-life issues in the emergency department. Widely published, Baren is senior editor of *Pediatric Emergency Medicine*. She was associate editor of *Journal Watch Emergency Medicine* for 10 years and continues

as associate editor of the journal *Academic Emergency Medicine*. Baren has been consistently recognized for her teaching and mentoring.

After earning her medical degree at the University of Pittsburgh (*magna cum laude*) in 1989, Baren completed an internship and a residency in emergency medicine and a fellowship in pediatric emergency medicine at Harbor-UCLA Medical Center in Los Angeles.

Rebecca Cooke, M.B.A., has been appointed vice dean for administration and finance for the Perelman School of Medicine. She has executive experience in research administration, higher education administration, and the management of physician practices and hospital clinical programs. Most recently, she served as chief operating officer of Northwestern University's Feinberg School of Medicine. Cooke received her M.B.A. degree in health-care management from the Wharton School and earlier worked for The Children's Hospital of Philadelphia and Thomas Jefferson University.

As COO at the Feinberg School, Cooke was responsible for strategic, operational, and financial leadership. Previously, she was senior associate dean for



Rebecca Cooke, M.B.A.

administration and administrator of Feinberg's Department of Medicine, during which time she helped double the department's clinical revenue in five years by developing faculty incentives and increasing efficiency of staff and space.

At the Wharton School, Cooke was awarded the Hospital Association of Pennsylvania's Student Award.

Chi Van Dang, M.D., Ph.D., has been appointed director of the Abramson Cancer Center of the University of Pennsylvania.



Chi Van Dang, M.D., Ph.D.

He comes to Penn Medicine from The Johns Hopkins University School of Medicine, where he was a professor in the departments of Medicine, Cell Biology, Oncology, Pathology, and Molecular Biology & Genetics. He also served as vice dean for research and executive director of the Institute for Cell Engineering.

Dang's laboratory has contributed to the understanding of the function of the MYC cancer gene, which has emerged as a central transcription factor or gene switch in many different human cancers. Most recently, Dang was the principal investigator for Johns Hopkins in a Stand Up to Cancer grant awarded to Penn Medicine from the American Association for Cancer Research to investigate how to "cut off the fuel" for pancreatic cancer.

With more than 200 scientific publications, Dang is the editor of a special issue of *Genes & Cancer*, "MYC: A Far-Reaching Cancer Gene," published last year. He has been senior editor and associate editor of *Cancer Research*, associate editor of the *Journal of Molecular Medicine*, and scientific editor of *Cancer Discovery*.

Born in Saigon, Viet Nam, Dang earned his Ph.D. degree in chemistry at Georgetown University, with distinction. Four years later, he received his M.D. degree from Johns Hopkins University, where he was inducted into the Alpha Omega Alpha Honor Medical Society. Following his internship and residency in medicine at Johns Hopkins Hospital, Dang took a fellowship in hematology-oncology at the Cancer Research Institute of the University of California at San Francisco. In 1987, he was appointed assistant professor of medicine at Johns Hopkins, where he remained until joining Penn Medicine.

The inaugural recipient of the Johns Hopkins Family Professorship in Oncology Research, Dang is also an elected member of the Association of American Physicians and of the Institute of Medicine, and he is a fellow of the American Academy of Arts & Sciences. He has served as president of the American Society for Clinical Investigation.

Timothy R. Dillingham, M.D., M.S., has joined Penn Medicine as chair of the Department of Physical Medicine and Rehabilitation. He had been chairman and professor of physical medicine and rehabilitation at the Medical College of Wisconsin. His research interests include the rehabilitation and long-term outcomes for amputees, especially when the amputations are caused by a limb's poor vascular status. He is also recognized as an expert in the electrodiagnosis of patients with limb symptoms and musculoskeletal disorders. Dillingham has

Welcome to the Academy

Amita Sehgal, Ph.D., Jonathan A. Epstein, M.D., and Katherine High, M.D., were elected members of the American Academy of Arts and Sciences.

Sehgal, the John Herr Musser Professor and vice chair of the Department of Neuroscience, serves as co-director of the Comprehensive Neuroscience Center. She studies the molecular and genetic components of sleep and circadian rhythms using a fruit fly model. Sehgal is also a Howard Hughes Medical Institute investigator.

Epstein, the William Wikoff Smith Professor of Cardiovascular Research, is

chair of the Department of Cell and Developmental Biology. He is known for his studies of the molecular mechanisms of cardiovascular development and their role in understanding human disease.

High, the William H. Bennett Professor of Pediatrics, is widely recognized as a hematologist and researcher. She is a Howard Hughes Medical Institute investigator and serves as director of the Center for Cellular and Molecular Therapeutics at the Children's Hospital of Philadelphia.

Founded in 1780, the Academy selects top experts in areas such as academia, the arts, business, and the sciences to support the independent policy center's research.



Timothy R. Dillingham, M.D., M.S.

served as associate editor of the *American Journal of Physical Medicine and Rehabilitation* as well as a referee for several other journals. He was an editor of two volumes of *Rehabilitation of the Injured Combatant*, published by the Office of the Surgeon General.

Among Dillingham's many honors is the Distinguished Researcher Award from the American Association of Neuro-muscular and Electrodiagnostic Medi-

cine. He is a fellow of the American Academy of Physical Medicine and Rehabilitation and has been honored for his teaching.

Dillingham earned his medical degree from the University of Washington and took his internship and residency there while also earning his M.S. degree in rehabilitation medicine. From 1990 to 1994, he was a clinical instructor and then assistant professor in the Department of Neurology at the Uniformed Services University of Health Sciences in Bethesda, Md. He then joined the Johns Hopkins University as an assistant professor of physical medicine and rehabilitation. Dillingham joined the Medical College of Wisconsin in 2003.

Commissioned as a second lieutenant in the United States Army in 1982, Dillingham eventually rose to major. In 1994, he received the Meritorious Service Medal for exemplary performance of duties at Walter Reed Army Medical Center, where he had served as staff psychiatrist and director of research for PM&R; he was honorably discharged that same year.

Ezekiel J. Emanuel, M.D., Ph.D., has joined the University's faculty as the 13th Penn Integrates Knowledge University Professor. As the Diane v.S. Levy and Robert M. Levy University Professor, he has appointments in the newly reconstituted Department of Medical Ethics & Health Policy in the Perelman School of Medicine, where he is chairman, and the Department of Health Care Management in the Wharton School. In addition, he serves as vice provost for global initiatives for the University.



Ezekiel J. Emanuel, M.D., Ph.D.

Emanuel was founding chair of the Department of Bioethics at The Clinical Center of the National Institutes of Health and served for two years as special advisor for health policy to the director of the White House Office of Management and Budget. He is the author or editor of nine books, including *The Ends of Human Life* (Harvard University Press, 1991), and hundreds of articles and essays, across such topics as health-care reform, the ethics of clinical research, end-of-life care, and the physician-patient re-

Letters

An Accurate Count

In the obituary section of the Winter 2010/2011 issue of *Penn Medicine*, we reported that Grace I. (Chen) Yuan, M.D. '52, "was the only female graduate of her medical school class." Our information came from an item in a Newton, Mass., publication. Louis M. Palles Jr., M.D. '52, has informed us that there were two other female graduates in the Class of 1952: Elizabeth Eliason Whereat and Shirley Levin Jacobs. We regret the error.

An Instance of Unfairness

John A. Fust, M.D. '45, responded to "The Goal Is Transformation" (Winter 2010/2011) by raising the case of Dr. Helen Taussig. He recalled reading about her treatment within the medical establishment: "How she had been the prime mover in the diagnosis and ultimate treatment of what became known as Blalock-Taussig's disease. How other residents and others whom she trained were promoted over her. . . . I think, in these days when there is momentum toward giving women their due, the recall of Dr. Taussig's lifetime of mean treatment, all within the respect and admiration which she did receive, would be worthwhile. 'Those who forget the past . . .'"

The editor replies:

A letter in the *Texas Heart Institute Journal* notes that, "In 1921, Helen Taussig was denied admission to Harvard Medical School because she was a woman, yet she wrote the first textbook on pediatric cardiology that incorporated hemodynamic principles. We must also remember that Helen Taussig almost singlehandedly averted the thalidomide disaster in the United States" (Heinrich Taegtmeier, M.D., D.Phil.).

In *Transactions of the American Clinical and Climatological Association* (2005; 116: 1–12), Mary Allen Engle, M.D., wrote of her experiences with Dr. Taussig as a pediatric intern in pediatric surgery and as a fellow at Johns Hopkins. She noted Dr. Taussig's challenges: "Despite her father's prominence on the faculty, Harvard was adamant against women in medical school and even against awarding her a degree should she study in the School of Public Health. She was, however, allowed to study Histology while seated in a remote corner of the lecture hall, 'so that she would not contaminate the students,' she said. . . . Despite being an excellent student [at Hopkins], elected to Alpha Omega Alpha, she did not upon graduation obtain the internship in Internal Medicine that she sought." Later in her career, however, Dr. Taussig received the

Medal of Freedom from President Lyndon Johnson for her work on thalidomide.

A Question of Placebos

I am somewhat taken aback by a statement that appears in the article by Lynn Selhat in the recent issue of *Penn Medicine*. ["The Goal Is Transformation," Winter 2010/2011]

1) On page 15 she supplies the reader with what I consider to be "relative" misinformation. In randomized trials, besides the treatment group there is a control group, as she states. However, the control group does *not* receive "no intervention." This group usually receives a "placebo," which is not the same thing as no treatment. This is critical in clinical trials because there can be a beneficial effect from just taking a sugar pill with presumably no efficacy in the disorder under study . . . which brings me to the second and more critical question.

2) In the study by Drs. Grisso and Abuhhl, multi-level interventions are to be undertaken in the "treatment group," such as writing and leadership seminars, etc. It is unclear what is the approach to the control group. If this group is not being brought together in some meaningful (albeit non-leadership-related) ways, the results from the experiment could well be fatally flawed and uninterpretable. I

relationship. He has published in such leading medical journals as *The New England Journal of Medicine*, *The Lancet*, and *JAMA*, as well as in *The New York Times* and *The Wall Street Journal*.

Emanuel has been elected to the Institute of Medicine and served on the National Bioethics Advisory Commission. His awards include the AMA-Burroughs Wellcome Leadership Award.

Emanuel earned an M.D. degree and a Ph.D. degree in political philosophy from Harvard University and an M.Sci. degree

in biochemistry from Oxford University. Before joining the N.I.H. in 1997, he was associate professor of social medicine at the Harvard Medical School, where he taught since 1992.

Mark O. Winkelman, M.B.A., a member of the University of Pennsylvania's board of trustees, has been named chair of the board of Penn Medicine, effective November 1. He currently serves as a member of the Penn Medicine board and its executive committee. Winkelman,

who received an M.B.A. degree from the Wharton School in 1973, is a senior director of Goldman, Sachs & Co. A member of the University trustees since 2002, he serves on the board's executive committee and is chair of the Budget and Finance Committee.

Winkelman replaces James S. Riepe, former chair of Penn's trustees and retired vice chairman of the board of directors of T. Rowe Price Group Inc. Riepe will continue to serve on the Penn Medicine executive committee.

may have missed some details in my read but asking the "controls" to just complete questionnaires will not be adequate as the placebo.

As written, it is unclear to this reader that, indeed, (as stressed in the article) "our best scientific rigor" is being applied to this effort.

Marie J. Stuart, M.D., G.M.E. '72

Jeanne Anne Grisso, M.D., M.Sc., replies:

We appreciate the questions raised by Dr. Marie Stuart.

We are conducting a cluster-randomized trial to evaluate whether a multi-level institutional change strategy can help women faculty succeed compared with the usual academic environment. We randomly assigned eligible departments and divisions (along with the faculty in those units) to either intervention or "usual care" groups. The intervention is complex. Organizational change theory has documented that institutional change is more likely to occur if interventions target multiple levels. Thus, we have designed interventions that engage junior women faculty, mid-level to senior faculty and administrators, and department chairs and division chiefs.

You are correct in saying that the control status does not represent "no activity." At each level, the faculty from de-

partments and divisions in the control group carry on with their usual activities, including faculty development and mentorship, writing grants and manuscripts, and contributing to the academic, teaching, and clinical missions of their departments or divisions. This kind of active control is essential to address whether the intervention is superior to the usual academic environment.

Including an *additional* active control activity that ensures comparable contact with research staff is controversial. Because such an "attention" condition would need to match our multi-level intervention, implementation at the level of faculty members, departments, and administration would be complicated and likely infeasible. More importantly, Silverman, et al. argue that there are "potential ethical pitfalls when protocolized care in a control group deviates substantially from the care typically provided."¹ The Hawthorne effect is another potential problem that can occur when the control intervention is so involved that it significantly changes participant behavior.² Finally, commitment of participants' time and efforts should be considered carefully; burdening participants with time-consuming activities (just to provide an active control condition) is ethically difficult to justify.² The Declaration

of Helsinki states that the benefits, risks, burdens, and effectiveness of a new method must be tested against those that are the best currently available.³ Unfortunately, there is no intervention proven to help women advance in academic medicine. However, for the past 20 years, the University of Pennsylvania School of Medicine has had active programs in place to support women faculty. Thus, we believe that this environment serves as the best available comparison treatment.

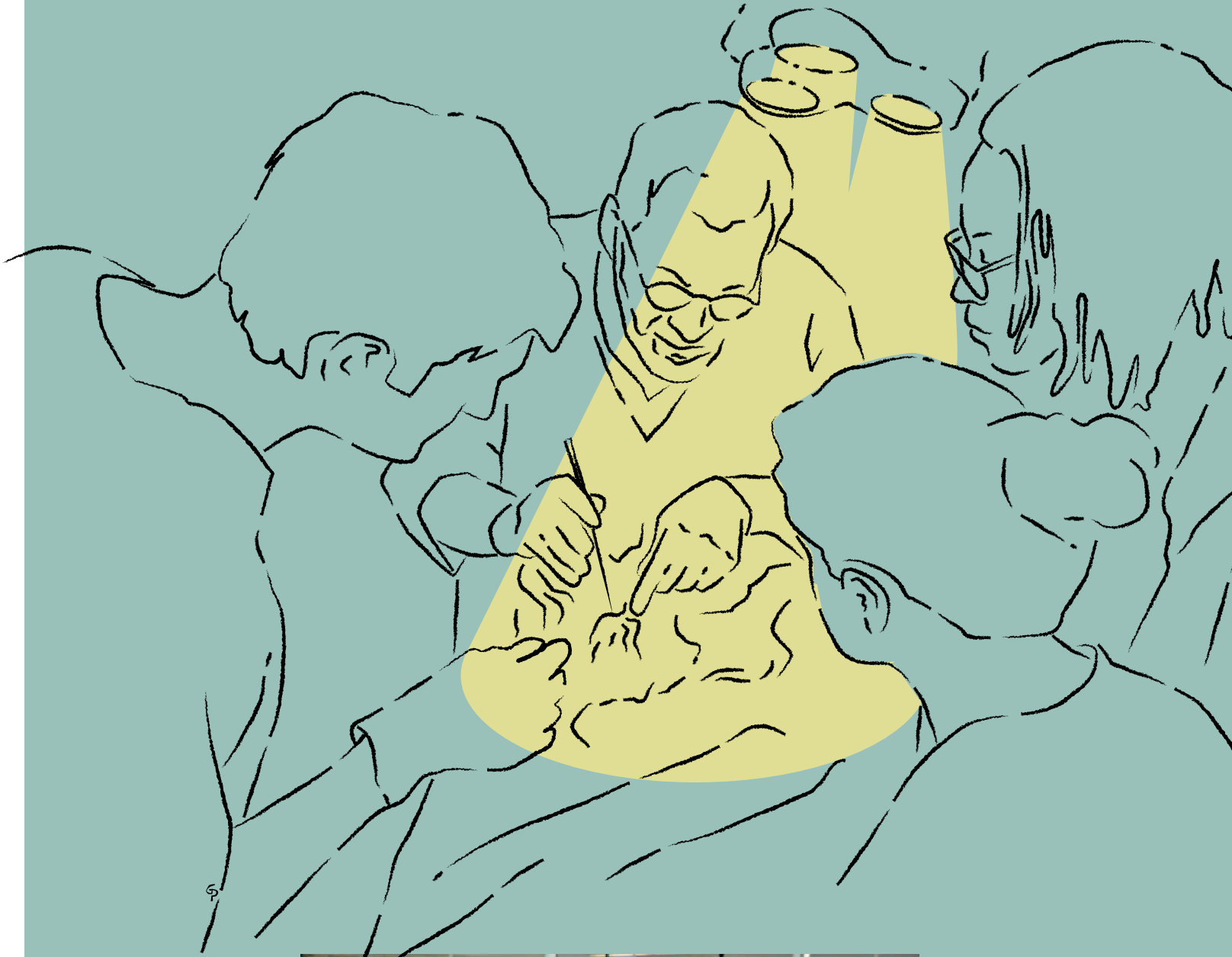
¹ David H. Au, Mario Castro, and Jerry A. Krishnan, "Selection of Controls in Clinical Trials" (Introduction and Conference Summary), *Proceedings of the American Thoracic Society*, 4: 567-569 (2007).

² Ruth Lindquist, Jean F. Wyman, Kristine M. C. Talley, Mary J. Findorff, Cynthia R. Gross, "Design of Control-Group Conditions in Clinical Trials of Behavioral Interventions," *Journal of Nursing Scholarship*, 39: 3, 214-221 (2007). *Proceedings of the American Thoracic Society*, 4:567-569

³ <http://www.fhi.org/training/en/RETCT2/RETCTraditional/p96.html>. World Medical Association Declaration of Helsinki, "Ethical Principles for Medical Research Involving Human Subjects," in *Research Ethics Training Curriculum*, Second Edition. Family Health International.

The Anatomy


By Marshall A. Ledger



Lesson

Photographs by Candace diCarlo

“We want them to **DISCOVER** –
to **LOOK**, to **EXAMINE**
the structures, to **THINK**
about what they’re doing.”



Poems, thank-you notes, messages to self about living up to expectations – these and other personal expressions are occasionally tucked under the cadavers in the medical school’s gross anatomy lab, placed by grateful first-year students at the end of the course and found by the diener as he is about to take the body for cremation.

Gross anatomy inspires that kind of soul-searching – and other forms as well. Some students, after the last session, gather around their cadaver to discuss their experiences and reflect. And some write essays, as did first-year Penn Med student Mark Attiah in *The Daily Pennsylvanian* (see pp. 15-16) and second-year student Kristin Schwab in the *Yale Journal for Humanities in Medicine* (“Lessons Beyond the Body”).

Clearly, most students find the course special. They begin it in their first Penn Med semester, after a month-long run through genetics, embryology, physiology, and biochemistry. “They know how to handle traditional courses,” says Neal Rubinstein, M.D. ’73, Ph.D., who directs the gross anatomy course. But gross anatomy “is not just a medical course,” he continues. “Yes, you can stay out of the lab. You can study books, pictures, models, and you would learn a lot of gross anatomy. But that’s not all that we want them to learn. We want them to discover – to look, to examine



Conferring, from left to right, are Emily Privette, Hayley Goldbach, and Colleen Bennett.

the structures, to think about what they're doing." He tells the students this right away, partly to calm their nerves.

"And we want them to think about the people involved," he adds. "They come to appreciate that someone has done something pretty spectacular for their education – donated their body." (The school does not use unclaimed bodies.)

The University has a distinguished tradition in gross anatomy. The course was on the school's first roster, in 1765. In fact, because one of the school's founders, William Shippen, M.D., had already been teaching it for three years, Casper Wistar, M.D., Shippen's successor as chair of anatomy in 1808, reasoned that the school originated in that course.

Wistar went on to revolutionize the subject. He wrote the first anatomy text in America, created sustainable anatomical models by injecting wax into human remains to keep them preserved, and gave compelling lectures. Decades later, William Osler, M.D., chair of clinical medicine at Penn from 1884 to 1889, brought students into his post-mortem laboratory,

part of the "practical" medical education that would lead to his recognition as "the father of modern medicine."

A century after Osler, the standard bearer is Neal Rubinstein. In some respects, he is an unlikely descendant. In his student days, he avoided the class as

Dealing with cadavers introduces students to the privileged society of doctors, to medical uncertainty, and to the limited state of medical **KNOWLEDGE.**

often as he could ("I'm actually embarrassed to tell you this," he says, "but I didn't like anatomy at all"). And he is based not in a clinical department, where he might apply the information gained from gross anatomy, but in basic research – cell and developmental biology, where he focused on muscle development using techniques from biochemistry and, later, molecular biology. (His lab, which he

closed last year, isolated the first human myosin locus.)

When Rubinstein joined the faculty in 1978, he was hired to do research and "teach something specific." That happened to be gross anatomy, and he has proven to be the perfect heir to the Penn tradition. The proof: In each of the past seven years – almost covering the span of his leadership – the course has been voted the top-rated in the medical school. The administration has noticed his fine touch, making him overall head of Module I, which essentially teaches "core principles" during the first semester of medical school. He also runs the cell and tissue biology course.

For gross anatomy's high standing, Rubinstein credits his faculty, all of them hired solely to teach gross anatomy (he is the only one on the standing faculty): Bob Boyd, Joe Curci, Robin Fisher, John Ladman, Mike Speirs, and Jim White. The credentials of this collection of professional anatomists include teaching awards, surgical practice, neuroanatomy research, and anatomy department chairmanships.

Rubinstein summarizes their contribution: "Most people think of anatomy class as the stern professor asking the students question after question, grilling them until they get to the point where they don't know the answers. To me, that's negative reinforcement, and it doesn't work.

"I'm a positive-reinforcement guy, and they are, too. You go to the table, the student doesn't know the answer, you help

the student find the answer. You always give them the idea that, boy, they really know a lot of material – well, let's just find out some more material.”

Rubinstein also credits the teaching assistants he recruits from the fourth-year

class. About half, or some 80 students, participate. “When we first started getting them, I thought they’d be extra hands to say *yes, you can cut that* or *yes, that’s the aortic artery*, but they’ve turned out to be more than that by giving out all this clin-

ical information that I don’t have. They are role models. They’re comfortable, self-assured, they know what they’re doing.

“And I say to the first-years, ‘You know, three years ago, these guys were you – and this is what you’re going to be like.’ I think

A RITE OF PASSAGE – AND MUCH MORE

BY MARK ATTIAH

A PENN MEDICAL STUDENT EXAMINES WHAT HE HAS LEARNED FROM THE DEAD.

The first day of anatomy lab for most medical students is the turning point in their education when they realize that they are, in fact, in medical school. Before taking the course, students understand that they will have to learn about the human body, and they may have toured cadaver labs. But the experience of having an actual dead body in front of them is something that no syllabus or course description can really convey.

Like any occasion of such gravity, it can make many first-year medical students uneasy. “They are worried that they will have nightmares,” wrote Neal A. Rubinstein, M.D. ’73, Ph.D., the anatomy course director, in an e-mail. “They see it as a rite of passage, but have heard that it is a terribly difficult rite of passage and that scares them.” The course, he concedes, has the potential to be emo-



Close inspection: from left to right, Andrew Taylor, Chen Yan, Mark Attiah, and Ray Hu.

tionally harrowing for some. “A few students each year have had a recent experience with death: grandparent, parent, sibling, close friend,” added Rubinstein, a professor of Cell and Developmental Biology, “and seeing a dead body brings back all the emotions of those traumas.”

Before the first dissection, last fall’s first-year students were feeling a wide range

of emotions. “I think it’s going to be really fun,” said Ofole Mgbako. Jerome Molleston looked ahead with some enthusiasm, suggesting that “the learning will be more relevant, more active.” On the other hand, when asked what she was concerned about, Alexandra Charrow responded, “I don’t want to cut the face.”

Charrow’s comment articulates a concern that many students have about the experience. It is not only disgust at the sight

of human entrails: the anatomy class amounts to a crash course in how to tread the fine line between embracing your own feelings of shared humanity – and restraining them.

My own greatest concern was that I might become numb – that someone else’s eyes would no longer be the window to his soul, but simply the corneas,

zonular fibers, and optic nerves. As Molleston put it, these cadavers “had their own hopes and dreams, and we’re dissecting an endpoint.” The muslin cloth that covers a cadaver’s face is not so much a mask to protect the donor’s dignity as it is to protect our still-fragile sensibilities.

But it is not only the students’ feelings that are considered. The organizers of the course take the dignity of the donors very seriously. For instance, Penn does not use unclaimed bodies for dissection, a gesture of respect for the autonomy of a potential donor. After dissection, bodies are cremated and preserved for the families afterward. This procedure is a far cry from the practice of “resurrectionists,” the professional body snatchers who supplied anatomy labs in olden times.

This spring, Penn hosted the Celebration of Remembrance, a ceremony to honor the donors who gave their bodies. In a concerted gesture not unlike a 21-gun salute for fallen soldiers, a multitude of brothers, sisters, wives, husbands, children, grandchildren, and other loved ones of the donors filed into Irvine Auditorium to hear words, verses, and musical notes of gratitude from medical students. It was not an impersonal occasion; instead,

“**MY OWN GREATEST CONCERN WAS THAT I MIGHT BECOME NUMB – THAT SOMEONE ELSE’S EYES WOULD NO LONGER BE THE WINDOW TO HIS SOUL, BUT SIMPLY THE CORNEAS, ZONULAR FIBERS, AND OPTIC NERVES.**”

there was something very earnest about hearing a eulogy from a person who never spoke a word to the deceased, yet knew him, in some ways, better than he even knew himself. “It felt very human,” wrote Karthikeyan Muthuswamy, a first-year Penn medical student and one of those who gave the eulogies. As he put it in an e-mail message: “It was obvious that the name readers had great respect for each person on the list.” Regardless of their occupation in life, each of the donors had become an educator for the sake of a healthier future, and the families appeared to be touched by this acknowledgment. “It was hard to look out into the audience and see some people starting to cry while making my speech,” wrote Muthuswamy. “But they also had a smile on their face. One of them said that he always wanted to donate his body to science. He’d always had great doctors take care of him in life,

and he wanted to make sure that the next generation of doctors would be as amazing if not better than the ones who took care of him.”

In the auditorium’s mezzanine, many students from Philadelphia’s medical schools looked on attentively. The dense sea of short white coats at the event underscored the fact that even the most “type A” students among us know that no learning is ever really independent. There are many people involved, often in unpublicized ways, so that doctors can do what they do – and someone had to give for us to get.

Anatomy is by far the highest-rated course among first-year students at Penn, according to Rubinstein. Given that you can smell the unmistakable aroma of a first-year taking anatomy from 400 feet away, thanks to the hours spent in a formaldehyde sauna, this is not a trifling feat. My classmates and I know full well that dead men do indeed tell tales, and we’re fortunate enough to learn how to listen to them.

Mark Attiah is a second-year medical student from Dallas. An earlier version of his article appeared in The Daily Pennsylvanian.

that’s helpful. And it’s helpful for them to see that there must be some importance here if, after all their medical-school experience, the fourth-years think it’s better to do some anatomy than anything else.”

As Renée C. Fox, Ph.D., the Penn sociologist known for her studies of medical education and medical ethics, has noted, gross anatomy is difficult partly because it makes visceral, emotional, and intellectual demands on the students. In addition, it begins to define them as physicians: Dealing with cadavers introduces students to the privileged society of doctors, to



medical uncertainty, and to the limited state of medical knowledge. Fox suggests that the course is a rite of passage: Though far from being a physician, the student becomes more like one by the end of the course. “Some call the cadaver their first patient – which it is,” says Rubinstein.

To help foster a good climate for learning as well as a good attitude, students work in teams of four of their own choosing. They take practical exams – on tagged body structures – together as a team. “No matter how hard we make the questions, you put the team together on it, they ace this exam,” Rubinstein reports. It’s rare

Going by the book are Ibarido Zambrano, left, and Ivor Asztalos.

that anyone slacks off: “No one wants to let the team down.” And because they’re studying harder for the team, the scores on their written exams, which they take individually, have been rising.

Lectures play a smaller role than they did in the past—but likely a more exciting one because, when possible, they are based on real-life examples. When orthopaedist Brian J. Sennett, M.D. ’88, discusses sports medicine, he begins with a video of Tom Brady, the New England Patriots quarterback, smashing his knee at the start of the 2008 season. Sennett asks what could be injured, explains the structure of a healthy knee, and then shows what happened to Brady (he tore both his anterior cruciate ligament and his medial collateral ligament).

“We’re not teaching them to be sports medicine people,” says Rubinstein, adding, “but if that grabs their interest, that’s great.” Instead, he emphasizes, “We’re showing them that there’s a reason that we’re teaching anatomy.”

Technology is making the lectures interactive. Speakers may use “smart boards,” slides on which they write and draw, which the students see developing



Jerome Molleston, Lucie Guo, and Ryan Jamiolkowski observe as Ankona Ghosh, then a teaching assistant, shares information. Ghosh is now an intern in otolaryngology at HUP.

and the speaker could address the various answers.

Technology is also making cadavers more life-like. The Department of Orthopaedic Surgery is constructing a human fresh-tissue laboratory where cadavers

is used sparingly, as when the radiology residents give the lectures. Currently, students view structures in cross-sections and various planes, “but they tend not to reconstruct them into 3-D images,” he says. “I’d really like to see us doing that. It would be a great advance on how we teach gross anatomy, and students could put it on their own computers and work on it themselves.”

Rubinstein considers what technology has done to gross anatomy: “When I was a medical student, they said that anatomy was going away, that soon it would all be biochemistry. Then molecular biology came, and they said it would all be molecular biology. But it’s not. Because of all the imaging, you don’t need to do surgical interventions to see what’s going on inside someone. It has actually ended up being more anatomy.” ♥

Marshall A. Ledger, Ph.D., is former editor of Penn Medicine and Trust, the magazine of The Pew Charitable Trusts.

Penn students take practical exams – on tagged body structures – as a team.

“No matter how hard we make the
QUESTIONS, they ace this exam.”

in real time. The slides are then posted on the “virtual curriculum,” where students can download the images and make notes on their own copies. One innovation last fall was the use of remote-control clickers, which enabled students to answer questions; the results were tabulated instantly,

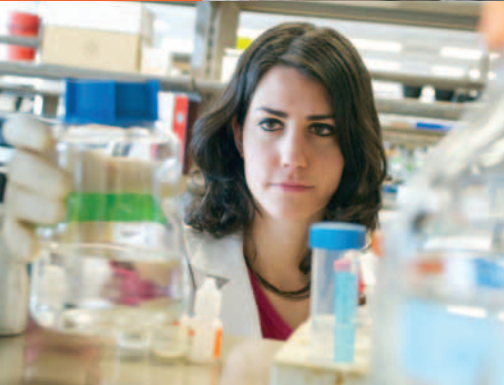
will be “lightly fixed” so that residents can be trained on more normal-appearing bodies. Rubinstein looks forward to having the first-year students rotate through the lab.

He also foresees expanded use of three-dimensional imaging. At present, it

“OUR HOPE FOR MEDICINE AT

By John Shea

Photographs by Scott Spitzer
except where noted



THE FUTURE OF PENN™

The Translational Research Center Will Enhance Collaboration and Accelerate Discoveries

What could make Francis Collins, M.D., Ph.D., one of the nation's most respected and powerful physician-scientists, "a little jealous"? What could lead Collins, director of the National Institutes of Health and former director of the international Human Genome Project, to confess that, at the end of a site tour, "I veritably *drooled*"? What could inspire Collins, while showing a slide of that same facility, to describe it poetically as "looking somewhat like a ship, ready to move out across the coming horizon"?

The answer: Penn Medicine's Translational Research Center, which officially opened in May – although some happy researchers had moved into the building earlier.

Collins was on the Penn Medicine campus as the keynote speaker, helping to dedicate the \$370 million facility. The title of his presentation was "An Acceleration of Translation," and it was clear that, in his view, the TRC is well prepared to provide a good deal of that necessary acceleration. Collins was certainly not alone in expressing enthusiasm for what he called "this remarkable research center." The reasons are not hard to find. The numbers in themselves are impressive: 531,000 total net square feet of research space; more than 700 laboratory work stations; and 180 research bays. Filling the space will be 100 lead researchers and 900 staff members from a wide range of departments, centers, and institutes, including the three that were established in 2005: the Penn Cardiovascular Institute, the Institute for Diabetes, Obesity, and Metabolism, and the Institute for Translational Medicine and Therapeutics.

As was stated at that time, these three institutes represent high priorities for Penn Medicine. Back in 2005, Arthur H. Rubenstein, M.B.,B.Ch., then dean of the medical school, stated that, "although only one of the three new institutes has the word *translational* in its name, all three share a general impulse to bring the fruits of research to the patient as swiftly and safely as possible. All three will be doing what centers and institutes can do more effectively than loose confederacies of in-

- 531,000 total net square feet
- More than 700 laboratory work stations
- 180 research bays

Photograph by Daniel Burke



Francis Collins: "A little jealous."

Photograph by Daniel Burke

investigators – that is, encourage the interactions among researchers, physicians, trainees, and students more systematically.” And now the three institutes have a home especially designed to encourage those very efforts.

J. Larry Jameson, M.D., Ph.D., now the executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine, made sure not to miss the TRC’s opening. Even before taking office at Penn Medicine, he was a champion of translational research at Northwestern University’s Feinberg School of Medicine, which had its own version of the Institute for Translational Medicine and Therapeutics. Jameson has called the newly opened TRC “a remarkable example of Penn’s commitment to accelerate clinical advances through research.” In addition, he noted that Penn Medicine’s particular expertise in translational research and collaborative science are “topics of clear focus for funding agencies.” In a recent letter to



alumni, Jameson placed translational medicine at the top of a list of highlights “of great importance to the future of Penn Medicine.”

He also mentioned another recent achievement: ITMAT received a \$55 million renewal from the National Institutes



of Health in recognition of its success during the first five years of the Clinical and Translational Science Awards program. Penn’s institute ranked first in the review of the renewal applications. In this connection, Jameson noted the role of Garret A. FitzGerald, M.D., director of ITMAT, who was recently named associate dean for translational research.

INTERACTION AND COLLABORATION

At the TRC’s dedication, Francis Collins specifically discussed the idea of interaction. In fact, his brief touch of jealousy was triggered, he said, “when I got a look at the lab space, the offices, the conference rooms, the flexibilities provided by the way in which the architect put together the space, the way in which it’s going to encourage conversations between students and postdocs and faculty – and that’s often what drives the next set of ideas.” (The architect in question is Rafael Viñoly, who also designed the adjacent Perelman Center for Advanced Medicine in collaboration with the firm of Perkins Eastman.)

It was a theme echoed by other speakers. Among them was Jonathan Epstein,

M.D., chair of Cell and Developmental Biology, one of the faculty panelists who spoke about the research they conducted and how the new facility would support them. In his words, it is “courageous and visionary” to house certain of the basic sciences in the TRC, and doing so underscores the effort to “reach out and bridge” the various scientific areas in Penn Medicine. Glen Gaulton, Ph.D., executive vice dean and chief scientific officer, also emphasized that the center would serve “different kinds of approaches and different kinds of people” from different schools across the University of Pennsylvania. He gave a quick list: wet scientists, computational researchers, clinical trial coordinators, a blend of junior and senior faculty members, graduate students, and medical students. The Translational Research Center, he asserted, “will have no walls” but be “truly open” and platform-based. As a result, he predicted “a lot of smiling people” would be working and studying there.

Those people will find an open, flexible design that includes DNA-like spiral stairs allowing for quick connections between floors, as well as a direct connection with

the state-of-the-art outpatient facility, the Perelman Center for Advanced Medicine.

INCUBATE, ADVANCE, ACCELERATE

Collins, in his presentation, described some of the areas of innovation in which the NIH is investing. At an event celebrating the Translational Research Center, it was especially appropriate that Collins also noted that the NIH has established a National Center for Advancing Translational Sciences; its mission is to catalyze the development and testing of novel diagnostics and therapeutics across a wide range of human diseases and conditions. He made clear that it was not a matter of *making* discoveries but of helping move the discoveries along – building a bridge across what is often a daunting gap. In this category, one of the interesting plans is to examine the oversight process for new drugs, which Collins described as “failure-prone and very expensive.” Another plan is to explore new uses for abandoned and approved therapeutics – “to liberate these compounds,” as he put it, that have already been shown to be safe for humans.

Collins also cited some recent Penn successes. One is the work of Jean Bennett, M.D., Ph.D., and Albert Maguire, M.D., in restoring some sight to patients with Leber’s Congenital Amaurosis, a rare disease. (“Isn’t that amazing!” exclaimed Collins.) Another example is the success of Carl June, M.D., who happened to be one of the event’s faculty panelists. June and his team, working with Sangamo BioSciences, have used engineered zinc finger proteins to modify the T cells of a patient with HIV/AIDS. The procedure knocks out the CCR5 gene necessary for HIV infection. Then the modified cells are put back in the patient, and there is no need for immunosuppression. In nine patients so far, the engineered cells remained free of infection, and they multiplied dramatically in eight of the nine

cases. Building resistance to HIV in this way appears to be a very promising direction.

As Collins put it, “it’s just one example of the kinds of things that are now becoming possible with this combination of technologies being applied from basic to clinical and which I think will be a wonderful incubator, right here, at this Translational Research Center.”

LOOKING BACK AND AHEAD

In her opening remarks, Amy Gutmann, Ph.D., president of the University of Pennsylvania, thanked Collins for the \$13 million Penn received last year from the National Institutes of Health as part of the American Recovery and Reinvestment Act, specifically to construct additional research space in the TRC. (All told, Penn Medicine received more than \$185 million in ARRA funds.) The new center, she said, “represents our hope for the future of medicine at Penn.”

In addition to celebrating the opening of the new center, the event was also the occasion for celebrating Arthur Rubenstein. He was praised for his role in making the TRC a reality as well as for his very successful decade as leader of Penn Medicine. President Gutmann said there was “no better capstone for . . . Penn Medicine’s most passionate advocate.” According to Collins, he came to Penn to celebrate not only the new center but Rubenstein as well, who had made “legendary contributions” to academic medicine. And at the cake-cutting after the main program, Ralph Muller, CEO of the Health System, said that he and all those involved in the TRC’s construction did their very best to make sure it was ready before Rubenstein stepped down as dean and executive vice president of the University of Pennsylvania for the Health System.

A glance back at the strategic plan that Rubenstein initiated early in his tenure – and which drew substantial input from faculty and staff – suggests that the Trans-

lational Research Center can indeed be seen as a capstone to his tenure. This passage appeared on the very first page when the draft for the *Plan for Penn Medicine* appeared, more than nine years ago: “To benefit from the opportunities that lie ahead, greater collaboration amongst researchers, clinicians, and educators is required. . . . This collaboration is facilitated by establishing an intellectual environment in which highly talented individuals are working together in teams to integrate a full continuum – from basic science to clinical practice to population health observations and back to basic, translational, and clinical research – to achieve remarkable results in research, patient care, and education.”

The Translational Research Center is intended to be a place where Penn investigators can fulfill such aspirations. ■



What Ever

By Marshall A. Ledger



Happened to Einstein's



The 20th century's most famous brain had an unusual post-mortem journey. At Penn, at least, it was treated right.

Brain?



Early in 1933, the trustees of the University of Pennsylvania invited Albert Einstein to attend graduation ceremonies that year and receive an honorary degree. The world-famous physicist could not come, the invitation was never extended again, and there seems to be no public record that he ever did make it to Penn's campus.

After his death in Princeton, N.J., in 1955, however, his brain was brought to Penn Medicine labs for sectioning and slicing, in preparation for research. At the time, the tissue processing was a hush-hush procedure, but now it is generally acknowledged. But until now, few details had come forth.

Inherent interest – and speculation

There is likely to be great curiosity, especially among the public, in the study of a genius's brain, yet Einstein's brain shouldn't have survived him. He explicitly directed that his body be cremated, and so it was, with the exception of his brain and his eyes.

Thomas S. Harvey, M.D., the Princeton Hospital pathologist who conducted the autopsy, removed those organs, certainly without prior approval to do so. Whether he received permission during the operation (from the executor of Einstein's estate, who was present) or after the fact has been a matter of longstanding debate.

The eyes went to his ophthalmologist, Henry Abrams, M.D., G.M. '41, and reportedly are still locked away. (Abrams, who taught at Penn Medicine for 15 years, died in 2009.)

The brain stayed with Harvey for nearly 45 years. He took it home with him, even though not returning it to Princeton Hospital cost him his job there. He carried it to the Midwest, where for two decades the world seemed to forget about him. And he took it with him when he moved back to New Jersey in the 1990s.

In 1997, Harvey traveled to the West Coast by auto, and the sectioned organ made the trip in Tupperware containers inside a duffel bag in the trunk. Harvey seemed to be an improper caretaker, to say the least, and the brain took on the mystique of an urban legend.

Not a caper

This past spring, two former Penn employees decided that they had had enough. In the 1950s, they worked in the Gradu-



The histology laboratory in Penn's Graduate School of Medicine, circa 1954.

ate School of Medicine, then part of Penn's School of Medicine. Edna Rogers Hughes was secretary to William E. Ehrich, M.D., the chair of pathology (a department that included histology and neuroanatomy), and Monica Carr Fox was a lab technician there. The women knew Harvey and had small roles to play in the care of the brain, and what they read about the pathologist did not ring true to them.

Hughes and Fox were especially offended by the 2000 book *Driving Mr. Albert: A Trip Across America with Einstein's Brain*, by the journalist Michael Paterniti. He had befriended Harvey and indulged his impulsive desire to take the brain to the West Coast. The former pathologist seemed to have a vague idea of discussing research possibilities with neuroscientists and showing the brain, perhaps even leaving part of it as a gift, to Evelyn Einstein, the scientist's granddaughter, who lived near San Francisco. (She died this past April.)

The trip took place in 1997. In Paterniti's narrative, Harvey, then 84, came across as a genial, shambling eccentric; the writer, as an eager, wonderstruck but clueless, 30-something partner on a "buddy" adventure; and the pieces of brain, as the ludicrous link between them.

Hughes and Fox discussed their disagreements with Paterniti's portrayal of Harvey and the implication in the book's title that the brain was whole rather than much diminished after being dissected and distributed to researchers over the years. (In the book, Paterniti clearly explains that the brain was "in parts," but the mere phrase *Einstein's brain* arouses particular awe as the physical home of his genius.)

After another former colleague, Barbara Johansen Smith, a technician in the department, corroborated their recollections, Hughes this spring took an unusual step: She e-mailed Penn Medicine's administration, offering their first-hand account – the first full disclosure of the brain's stay at Penn.



Photograph by Frederick E. Lepore. Copyright © 2000

Einstein's sectioned brain in a glass specimen jar. At the upper left, the letters "GSMUP" (Graduate School of the University of Pennsylvania) are visible.

I met with Fox and Hughes in Hughes's home in suburban Philadelphia. As it turned out, Hughes knew Harvey even before he arrived with the brain in 1955. They had both arrived at the pathology department in 1949, she as Ehrich's secretary and he as an instructor. Harvey went on to the Hospital of the University of Pennsylvania as a medical associate in clinical pathology from 1950 through 1956; in 1952, he became director of the pathology lab at Princeton Hospital, while apparently retaining his HUP affiliation four more years.

The women recalled Harvey's professionalism and the proper care that Einstein's brain received. "Dr. Harvey was a man worthy of respect, and Paterniti introduces him other than that," said Fox. "And that makes me unhappy."

"Dr. Ehrich was a proper German gentleman," Hughes added. "Nothing questionable would have ever happened in a lab that he was in charge of."

Sectioning the brain at Penn

Hughes and Fox described the vital role played by Marta Keller, a histology technician who probably was the reason that Harvey brought Einstein's brain to Penn for sectioning. Hughes must have known her from the pathology lab, and they had another link: She formerly worked at Montefiore Hospital in New York,

for the noted neuropathologist Harry Zimmerman, M.D.; in the 1930s, he had taught at Yale University's School of Medicine, where he was a mentor for Harvey.

Hughes, Fox, and Smith all recalled Keller as exceptionally able. Smith, whom I reached by phone, reported to Keller, who also trained her in the lab. "She was a wonderful, patient teacher," said Smith. "I didn't realize how unusual she was until later years, but she was one of only 11 technicians in the United States who could use a Sartorius microtome," the state-of-the-art brain slicer of the mid-1950s.

The machine was huge, the size of a kitchen table, with a 12-inch blade. Using it "required great skill," Fox said. "The brain was mounted in the center in a celloidin block. It had to be properly embedded, and then the tech needed great skill to obtain a full brain section without shattering the specimen."

Keller produced 240 blocks and, from each, cut microscope slides. (To understand

exactly what she did, I later contacted Frederick E. Lepore, M.D., a neurologist at the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School. He reviewed the research on Einstein's brain and interviewed Harvey for *Cerebrum*, the Dana Foundation publication, in 2001. "The slides were labeled to indicate their block of origin," he pointed out. "Harvey sketched a master map showing the anatomical place of origin of the numbered blocks.")

Most of the accounts that mention Penn's work on the brain credit Keller's efforts. Paterniti noted that "she must have been a highly competent technician, for some of those experts who've ultimately come by slides of Einstein's brain still praise her work."

Hughes and Fox described the schedule: After Harvey got Keller started, he traveled from Princeton on Fridays once or twice a month and, under a microscope, examined the slides that Keller had prepared. When he finished, he took the whole brain out of the jar and told Keller the part he would like to study next. Over the following week or two, she did the slicing, staining, and mounting, and the slides would be ready for Harvey on his next visit. This routine lasted about eight months.

Fox worked alongside Keller as she put litmus paper between the sections ("because they were so thin," Fox pointed out). Hughes recalled looking at the samples under a microscope to make sure that the staining was correct, so that it would highlight the cells that Harvey wanted to see.

The work took place in the basement of the Anatomy-Chemistry Building, where the pathology lab was located. Go down the hallway, turn left and you'd find a vestibule, and at the back of that small space was a closet. There the famous organ was stored, along with brains used to teach the Graduate School of Medicine students. "Einstein's brain never got to students," Hughes said. "It was kept there

At press time, *Penn Medicine* has learned that Lucy Rorke-Adams, M.D., has donated 46 slides containing slices of Einstein's brain to the Mutter Museum of the College of Physicians of Philadelphia. Rorke-Adams, a neuropathologist at The Children's Hospital of Philadelphia and a clinical professor at the Perelman School of Medicine, received the slides in the mid-1970s.

because that was the only place we had.” As she added: “It was locked.”

Hughes saw the brain regularly. Ehrlich, the department chair, lectured on Saturdays, and she prepared his teaching materials: “I’d go in on a Saturday, get a cart, go to the closet, put six brains on it, put rubber gloves on, wash the brains off, put them on a metal plate, a pie plate, and give them out. The doctor-students would dissect them while Dr. Ehrlich was speaking.”

But information about the brain’s presence was restricted to those who needed to know. According to Hughes, “We were told not to mention to anybody that we had the brain in our lab, because they were actually afraid that it would be stolen.”

Fox told her husband. “I told my mother, and she didn’t care,” said Hughes.

Eventually, the whole brain was sectioned, “as far as we know,” Lepore told me in our later e-mail exchange. So it did leave Penn “in parts.” That phrase has its own visceral impact, but Harvey in fact had accurate dissections, responsibly done in a scientific and confidential manner by one of the best technicians of the day.

After Harvey left Penn with his blocks and slides, Hughes said, “Dr. Ehrlich wanted to have a plaque put up, stating the location at Penn where this work was performed.” Whether he never got around to making an official request or whether his request was turned down is not known.

Research results so far

Marta Keller wrote down her observations of the brain only after Edna Hughes posed some questions to her in a letter in 2000. Keller, who died at 96 two years later, remembered Einstein’s organ as “a perfectly healthy, normal adult brain.” Asked about its convolutions – as if the fissures might have patterns relating to intelligence or creativity – Keller said they were typical.

Hughes also asked her about “any unusual conclusions reached, giving the

reason for Einstein’s genius?” “None as far as I know,” Keller wrote.

These findings concur with most research on Einstein’s brain from the start. For instance, its weight was normal (the relationship of brain weight or size and mental powers is an continuing question). In addition to preparing work for Harvey, Keller prepared slides for several clinical scientists around the country to whom Harvey sent them. Harry Zimmerman, his former mentor, received a set and noted that he did not expect to “find the cells that made him a genius.”

According to Lepore, the other slide recipients apparently had nothing to report. Harvey’s own examination found “plaques and neurofibrillary tangles” associated with Alzheimer’s disease but “within normal limits for a man his age”; he apparently did not publish this result.

Later studies, done with specimens from Einstein’s brain that Harvey provided to select scientists over the years, have shown that a “neural basis of intellect” still eludes us, Lepore concluded. But, he added, neuroscience is a young field and may

yet produce interesting links between the organ and intellectual creativity.

If that happens, he suggested, Einstein’s brain may yet make a contribution. Harvey died in 2007, but nine years earlier he gave the remaining parts of the organ – some 170 of the original 240 celloidin blocks – to the Princeton Medical Center. Parts also are held at a brain bank assembled by the neuroscientist Sandra F. Witelson, Ph.D., at McMaster University; and, according to Lepore, at an institution that has requested anonymity.

Based on what he has seen, Lepore credited Harvey for the “meticulous and systematic preservation of Einstein’s brain.”

Which is exactly the conclusion that Penn’s former employees reached. “Dr. Harvey might have really managed to protect that tissue so that farther down the road, further studies could be made,” said Fox. “He may end up being the hero.” ■



Top: Edna Hughes, second from right, and Monica Fox, right, with Graduate School of Medicine students.

Bottom: In the foreground is the wheel of the histology lab’s Sartorius microtome, used for slicing brains for slides. From left to right, Edna Hughes, Marta Keller, Donna Liormanans, and Barbara J. Smith.

Learning About Dying

In some sessions, Doctoring 101 brings patients and family members to speak to medical students about complex topics beyond the basic and physical sciences. One such topic: hospice.

By Jennifer Baldino Bonett

Married for 27 years, Robert G. Rossheim and his wife Diane lived “a great romance.” It was the second marriage for both. When the country boy wed the city girl, the couple enjoyed each other’s avocations – sailing for him and opera for her – and an active social life with friends.

Mr. Rossheim was diagnosed with thyroid cancer in 2006 at age 81, and the couple remained active long into his illness. They had led a good life together and, when it was clear that Mr. Rossheim’s condition was terminal, the couple wanted a “good death” for him as well. Working with their physician, they sought out Penn Home Care and Hospice Services.

“I think he died in peace,” said Diane F. Rossheim, a 1952 Penn graduate. “The time that he had was good time and he knew that.”

Speaking clearly and quietly to a class of first-year medical students, Rossheim unfolded the story of her husband’s passing in 2010 and their hospice experience, which was, she said, “a blessing.” The students sat in rapt attention, listening carefully and respectfully as their guest speaker expressed both grief and joy.

They had come together to talk about hospice care in Doctoring 101, a class

unlike any others the students would be taking during their education. Required over three years, Doctoring 101 covers complex topics beyond the basic and physical sciences, such as giving difficult news, handling an angry patient, and

to heal and cure and save lives, learning about death and dying is an important part of their education.”

Hearing the Rossheims’ story is a particular privilege and teaching moment, said preceptor Leslie S. Kersun, M.D., M.S.C.E.

“Hospice isn’t a death sentence. It’s about getting most out of life. But in many cases, people don’t understand what hospice is. Hospice should be one of the options offered to patients and families.”

working with patients and families during terminal illness.

“This course gives our students a unique experience and exposure to areas of patient care and practice that aren’t encountered elsewhere in medical school,” said Paul N. Lanken, M.D., G.M.E. ’77, a critical care specialist, professor of medicine, and associate dean for professionalism and humanism. “They are dealing with difficult topics in a comfortable setting among faculty preceptors and student colleagues. For medical students preparing

’04, an assistant professor of pediatrics and inpatient medical director in the oncology division at the Children’s Hospital of Philadelphia.

“Medical students haven’t really had much patient interaction at this point, so they are grateful to have these in-class interactions before doing it on their own,” explained Kersun. “The students develop an appreciation not just for the medical aspects of the disease, but for what the parent or mother or spouse has to do or might encounter in the medical system.”

Real patients and family members like Diane Rossheim speak to small groups of students in Doctoring 101. Although Rossheim remained stoic throughout the two-hour class, her voice conveyed tenderness and urgency as she talked about her husband's illness and death. Mr. Rossheim went from using a cane to using a walker, and he continued to sail as long as someone was able to lift him into the boat. He would walk "as far as he could" through Washington Square, near their Philadelphia home. In October 2009, after Mr. Rossheim told his wife he did not want any more medical treatment, David Mintzer, M.D., a physician at Pennsylvania Hospital, "immediately wrote a prescription for hospice."

Hospice focuses on palliative care – the lessening of symptoms and pain rather than cure – for terminally ill patients, who typically have a prognosis of six months or less to live. The hospice team – physicians, nurses, social workers, chaplains, home health aides, therapists, dietitians, and bereavement counselors – provides care that is physical, emotional, spiritual and social to the patient and the family.

Penn Hospice is one of only a few hospice services in the country to be affiliated with an academic medical center. "An academic medical center is the ideal home for a hospice program, since this partnership ensures that patients have access to both the most advanced treatment and the most compassionate care," said David Casarett, M.D., G.M.E. '99, the chief medical officer of Penn-Wisconsin Hospice. Patients and their families can receive care at home or as inpatients at Penn Hospice at Rittenhouse.

For the Rossheims, Penn Hospice provided at-home services including pain and symptom management, spiritual support, 24-hour on-call support, and home health aides to help with bathing. "There was always someone available to help us with a situation," says Rossheim. "There were always solutions." For example, she re-

called social worker Mary DeVito. DeVito set up the Rossheims' bathroom with safety bars, arranged the hospital bed with an inviting quilt, and arranged for a special foam mattress as Mr. Rossheim lost weight and needed more comfort. As he moved into his final days, the Hospice team left a morphine kit in the refrigerator and a special phone line for immediate care.

Rossheim read aloud to the medical students from "Letting Go," a 2010 *New Yorker* article by Boston surgeon Atul Gawande:

"In ordinary medicine, the goal is to extend life. We'll sacrifice the quality of your existence now – by performing surgery, providing chemotherapy, putting you in intensive care – for the chance of gaining time later. Hospice deploys nurses, doc-

“An academic medical center is the ideal home for a hospice program, since this partnership ensures that patients have access to both the most advanced treatment and the most compassionate care.”

tors, and social workers to help people with a fatal illness have the fullest possible lives right now. That means focusing on objectives like freedom from pain and discomfort, or maintaining mental awareness for as long as possible, or getting out with family once in a while. Hospice and palliative-care specialists aren't much concerned about whether that makes people's lives longer or shorter."

Rossheim also showed a photograph of her husband, from healthier times, standing aboard a sailboat. She told the students that at the end of his life, hospice enabled her beloved Bob to take pleasure in his days. "Each department at the hospice was so helpful to us," she recalled. "Everything is for the comfort of the patient."

There is also comfort for the caregiver and the family, including respite services during care and bereavement services for up to 13 months following a patient's death.

Joining Rossheim in Doctoring 101 was Jeffrey Barg, M.S.S., L.S.W., bereavement coordinator for Penn Hospice. "Hospice isn't a death sentence. It's about getting the most out of life," he said. "But in many cases, people don't understand what hospice is. Hospice should be one of the options offered to patients and families."

Barg encouraged the students to "push yourselves to talk to patients about hospice. Being realistic about it in a sensitive way is the greatest service to patients. It is a difficult subject to broach and it is easy to fall into a do-everything-at-all-costs mentality. Give patients the information they

need and want to make good decisions."

As the two-hour class wound down in Stemmler Hall, students asked how Mr. Rossheim transitioned from seeking a cure to realizing the disease would take his life and seeking hospice care. "Bob was very aware of hospice and knew he had an incurable disease," said his wife candidly. "He really knew his end was coming and he accepted it. He had a quiet, contemplative demeanor and wanted to have as much pleasure at the end of his life as possible. There comes a time when the medicine has to stop. Bob understood that." ■

To learn more about Penn Home Care and Hospice, visit <http://www.pennmedicine.org/homecare/> or call 1-866-888-8598.

A New Center Will Tackle

\$10 Million Gift Will Help Fill a Significant Gap in Research and Treatment

Earlier this year, Rachel Gill, who has Friedrich's ataxia, decided to donate funds she had received from the Make a Wish Foundation to the Friedrich's Ataxia Research Alliance (FARA). Combined with a matching gift from her father's employer, DST Systems, the total amounted to \$10,000. The check presentation was made at Penn Medicine – where Robert B. Wilson, M.D. '89, Ph.D., and David R. Lynch, M.D., Ph.D., G.M.E. '95, program director of the Friedrich Ataxia Program at The Children's Hospital of Philadelphia, gratefully received it on behalf of the nonprofit advocacy organization.

Friedrich's ataxia is a debilitating, life-shortening degenerative neuromuscular disorder that leads to loss of coordination in the arms and legs, fatigue and muscle loss, aggressive curvature of the spine, diabetes mellitus, and a dangerous enlargement of the heart. According to FARA, it affects about one in 50,000 people in the United States. In other words, it is what is commonly known as an "orphan disease," defined as one that affects fewer than 200,000 people. At the FARA site, under "Treatments," there is no equivocation: "There are currently no treatments for FA."

Wilson, professor of pathology and laboratory medicine at the Perelman School of Medicine, is a founding member of FARA's board of directors and the organization's founding scientific director. In a description of one of his scientific projects, he is equally blunt: there are "no approved treatments" for Friedrich's ataxia. Along with colleagues from Penn's Department of Chemistry, Amos Smith, Ph.D., and Donna Huryn, Ph.D., Wilson was

one of the recipients of an award from Penn's Institute for Translational Medicine and Therapeutics two years ago. The goal was to optimize certain compounds for potential use in treating FA. But in general orphan diseases receive little funding, which means fewer advances in research and treatments. That situation makes the support from Rachel Gill and ITMAT all the more important.

Other researchers at Penn Medicine have not shied away from the challenge

According to Glen Gaulton, the new center will build strong collaborative relationships at Penn and elsewhere, "all designed to translate innovative research into the clinic. There's simply nothing else like it."

of orphan diseases, and sometimes they have achieved noteworthy advances. For example, in 2008, Jean Bennett, M.D., Ph.D., and Albert M. Maguire, in the Department of Ophthalmology, announced that their team had been able to return partial sight to children with Leber's congenital amaurosis. A rare disease, LCA leads to total blindness because of retinal degeneration. A few years earlier, Frederick Kaplan, M.D., and Eileen M. Shore, Ph.D., of the Department of Orthopaedic Sur-

gery, discovered the gene that causes fibrodysplasia ossificans progressiva. FOP is a genetic condition that causes the body's skeletal muscles and soft connective tissue to turn into bone, rendering it impossible for the patient to move. Penn's Center for Research in FOP and Related Diseases is the only center in the world dedicated to the disease.

But the situation for orphan diseases on the whole is grim. According to a report by the Institute of Medicine, *Rare Diseases and Orphan Products: Accelerating Research and Development* (2010): "Most of these conditions are serious and life-altering. Many are life-threatening or fatal. . . . Because the number of people affected with any particular rare disease is relatively small and the number of rare diseases is so large, a host of challenges complicates the development of safe and effective drugs, biologics, and medical devices to prevent, diagnose, treat, or cure these conditions." Among the main challenges the report cites are difficulties in attracting public and private funding for research and development and recruiting sufficient numbers of research participants for clinical studies.

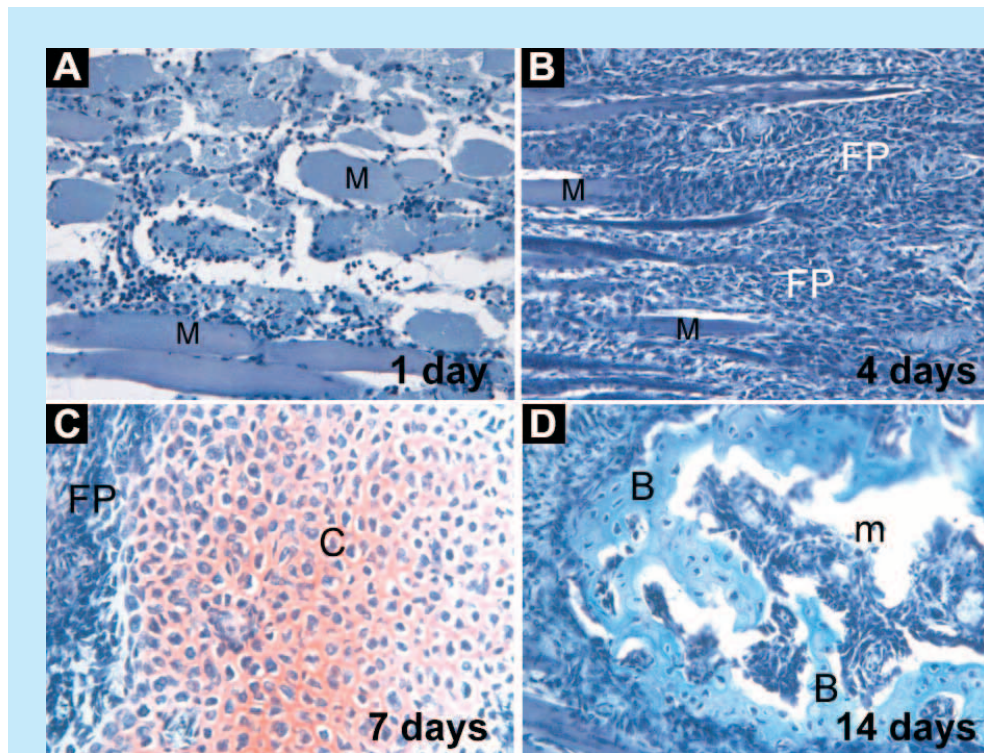
That's why a new center at Penn Medicine can make a substantial impact in the field. Thanks to a \$10 million gift from a donor who prefers to remain anonymous, the Perelman School of Medicine has launched a first-of-its kind Penn Center for Orphan Disease Research and Therapy. The interdisciplinary center will bring together approaches to attacking and treating orphan diseases by establishing facilities dedicated to research, translating scientific findings into therapies, foster-

“Orphan” Diseases

ing targeted grant awards, and educating physicians and researchers interested in the field. The center’s goal is to lead an international, coordinated effort to eradicate orphan diseases. One of the most important features of the new center will be a state-of-the-art drug-screening laboratory, robotically controlled, that will allow researchers from around the world to rapidly probe libraries of compounds that already exist for possible use as effective treatments.

As Glen N. Gaulton, Ph.D., executive vice dean and chief scientific officer, put it, the center “will build not only strong collaborative relationships throughout Penn but also with other leading academic medical centers, as well as public and private institutions – all designed to translate innovative research into the clinic. There’s simply nothing else like it.”

By investing in the necessary research that large pharmaceutical companies avoid, the center aims to spur progress in finding cures. A crucial first step is helping to increase awareness of orphan diseases, their causes and potential treatments. The IOM report offers some hope: “Because many rare conditions stem from defects in a single gene, they offer opportunities for faster progress, especially given scientific and technological advances that identify the genetic basis of rare diseases and find molecular targets for the development of new treatments for these diseases.” The report also notes that, as previous research has shown, “some of these advances will undoubtedly illuminate disease mechanisms and treatment avenues for more common conditions.”



In the continuing research into the rare disease fibrodysplasia ossificans progressiva (FOP), a team led by Frederick S. Kaplan, M.D., pinpointed the source of immature cells that spur misplaced bone growth. The image, courtesy of the *Journal of Bone and Joint Surgery*, shows the stages of metamorphosis of muscle tissue into bone tissue in a mouse model. A: Inflammation in muscle tissue (M = muscle cells). B: Destruction of muscle cells (FP = fibroproliferation). C: Formation of cartilage scaffold before bone formation (C = cartilage). D: Formation of mature bone (B = bone).

“This is a wonderful example of philanthropy in action,” said J. Larry Jameson, M.D., Ph.D., executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine. “I am proud that Penn Medicine is taking a clear leadership position in transforming the health of millions.”

Jameson’s predecessor, Arthur H. Rubenstein, M.B.,B.Ch. will serve as special advisor to the center and oversee a search for a director.

In a publication of the National Ataxia Foundation four years ago, Robert Wilson

reported on the “long, complex, and very expensive process to take a drug from the laboratory all the way to approval in the clinics.” One of the last steps, he wrote, is to establish efficacy, which typically involves hundreds of thousands of patients. But that is a difficult hurdle for any particular orphan disease and “puts up even further hurdles for drug companies who are willing to develop drugs for rare diseases.” Those are some of the very challenges the Penn Center for Orphan Disease Research and Therapy expects to solve. ▀

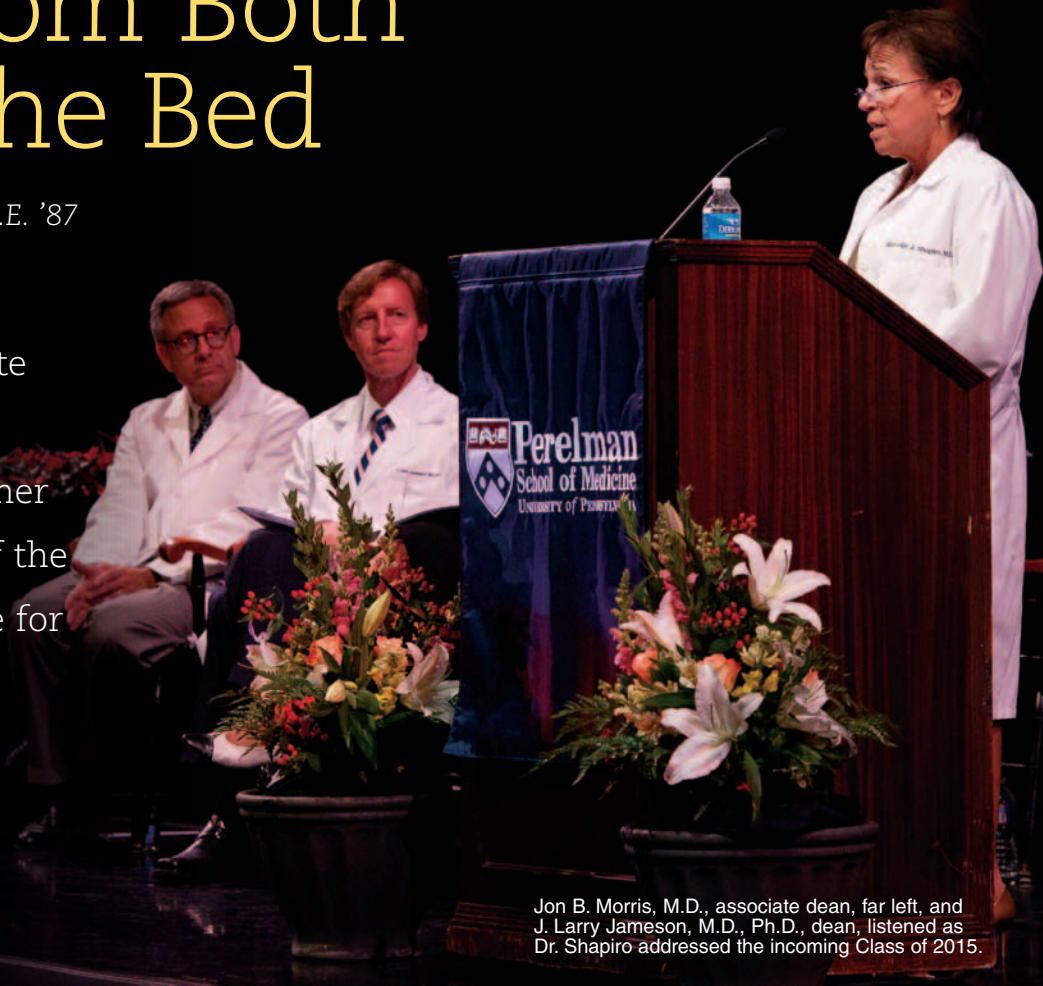
– John Shea

A View from Both Sides of the Bed

By *Marcelle J. Shapiro, M.D. '80, G.M.E. '87*

Photographs by *Daniel Burke*

A speaker at this year's White Coat Ceremony, Dr. Marcelle Shapiro shared the story of her medical crisis – and some of the lessons it helped underscore for health-care professionals in their dealings with patients.



Jon B. Morris, M.D., associate dean, far left, and J. Larry Jameson, M.D., Ph.D., dean, listened as Dr. Shapiro addressed the incoming Class of 2015.

In 1987, I began my career in interventional radiology

in a full-time academic setting, training residents and fellows, doing research, and writing. I loved it no matter what hours were spent at work. However, being married to a busy surgeon and having two growing daughters, I chose to work part time. In 2002, I began working at Jeanes Hospital, a Temple University affiliate in Northeast Philadelphia, not far from our home. A large part of my practice was centered around patients in the Fox Chase Cancer Center-Temple bone-marrow transplant (BMT) unit, which is located at Jeanes Hospital. I developed a wonderful and fulfilling work relationship with my transplant colleagues.

In the process, I learned so much about some of the sickest patients one can care for in medicine; patients with leukemia, lymphoma, and myeloma who require

bone-marrow or stem-cell transplantation to survive. The first step in the transplantation process is the Interventional Radiology (IR) suite, since we are the physicians who place the intravenous catheters and ports required for chemotherapy and ultimately the bone-marrow or stem-cell transfusion.

To me, our job was not simply to place a catheter for the impending marathon of treatment but to help allay some of the patient's fears and make catheter placement a positive experience. By being available, providing timely care and service to the patients of our clinical colleagues, we also gained *their* trust and became a faithful, reliable part of the clinical team. These were our rewards.

The beginning of 2010 was a particularly hectic and challenging time because radiologic services were shifted from my private group to Temple University. My

office and angio suite remained the same but I, too, had to become a Temple University physician in order to maintain my practice at Jeanes. By late February, I was feeling extraordinarily stressed – jittery, anxious, tachycardic (a racing heart) every day. There was a great deal of pressure at work so I passed off these symptoms to the changes at the helm. My heart rate was running 100 on a daily basis. I became so run down that I developed a strep throat. Antibiotics cleared my sore throat but the tachycardia persisted. Within a few days, I became short of breath after only a little activity and just didn't feel right. My doctor referred me to the ER at his hospital (different from Jeanes) for this acute-care evaluation.

It was a busy ER, a pleasant nurse drew my blood, and I was efficiently transported for all of my x-ray studies. When I returned from radiology, a now-

very-concerned nurse returned to repeat my blood tests. She said the first set had to be wrong because she had never seen labs like these. Being the curious physician/patient, I politely asked what they were before allowing any additional blood draw, at which point she stated: Hbg 5 (nml: 10-15); WBC 200K (nml: 5-10); platelets 60K (nml: 150-300K), and I promptly stated: "Oh my God, I have acute leukemia." The nurse said the labs may not be correct, but I knew they were, given all of my symptoms.

From that moment on, my entire world changed. Doctors and nurses were flying in and out of my ER room, and all I could think was, *How will I ever survive?* My very troubled husband reassured me that we would get through this together; he was and is my rock.

Before too long, I found myself in a surreal world, being sedated in IR so I could be fitted with a catheter similar to a dialysis catheter. Here I was – now *the patient* on the angio table! There is very little I can recall from that day and a half of treatment before I was transferred to Fox Chase Cancer Center (FCCC). My condition rapidly deteriorated; I was placed on a ventilator and on dialysis for the next seven weeks in the intensive-care unit at FCCC. I have no memory of this period; I was placed in a drug-induced coma so I would not fight the ventilator, which was breathing for me, or my other treatments. The critical-care physicians were left to deal with my family, all of whom are physicians.

How difficult the circumstances on both sides: my husband, a surgeon, and my brother, a critical-care anesthesiologist, knew exactly what was going on as they monitored their loved one who was critically ill. The only way my family could help me was to make sure their voices were heard by the ICU physicians and nurses taking care of me. They had to let my doctors know passionately and

respectfully who I was and how I functioned before all of this happened. It was difficult for both sides, especially when very challenging clinical decisions had to be made.

Obviously the right ones were made: I survived this horrendous chapter and awoke seven and a half weeks later in a complete remission from the acute leukemia, having had a tracheostomy and been on dialysis – *without knowing a bit of what happened.*

I remember waking up on a clinical floor outside of the ICU as smiling people told me how great I looked and how well I was doing, considering how sick I was. Well, I didn't look or feel great but at the same time I couldn't believe how "really sick" I had been, either. It was only after many conversations with my family of physicians, my closest medical-school friends and colleagues, and a very special

the one who told me that I had survived the ICU storm against all odds, that I had miraculously gone into a complete remission with one round of chemotherapy, but that in order to have any chance of long-term survival, *I needed a bone-marrow or stem-cell transplant.*

I remember that day in late April so vividly. Images of so many of the critically ill transplant patients in whose care I participated were now swirling in my head. Here I was faced with another hurdle: at Jeanes Hospital, my clinical colleagues would now be my personal doctors! As Dr. Mangan, chair of the BMT unit, a colleague, a friend, and now my transplant doctor, half-seriously put it: "I not only have to care for you and answer to you and your medical family, I have to answer to the transplant team and entire medical staff who have great respect and profound fondness for you."

From that moment on, my entire world changed. Doctors and nurses were flying in and out of my ER room, and all I could think was, *How will I ever survive?* Before too long, I found myself in a surreal world, being sedated in IR so I could be fitted with a catheter similar to a dialysis catheter. Here I was – now *the patient* on the angio table!

conversation with a brilliant young 3rd-year medical oncology fellow that I began to understand. I had worked with this fellow when he rotated through the Temple BMT unit at Jeanes. He understood that for me as a radiologist, a picture is worth a thousand words. So he allowed me to review my healthy chest CT scan and compare it to the worst one from my ICU days; it was then that I appreciated the magnitude of my illness. My conversations with him were always open, honest, and direct. In fact, he was

Imagine informed consent with a physician/patient and her family! Questions were tough on both sides but the answers and statistics were tougher. I had a very skewed view of this process because I had seen only the sickest patients with significant complications after their transplants. My anxiety was high; I needed to speak with long-term, healthy survivors. My doctors understood how important this was for me and complied with my request. Speaking with others who had been through this experience certainly



Members of the Class of 2015 were an attentive audience in the Annenberg Center's auditorium.

helped to temper my anxiety and allowed me to move forward.

And I can report that miracles do happen! My older brother, also a physician and chief of pediatrics with a specialty in hematology-oncology, was a perfect match. I was admitted for the stem-cell transplant on June 30th and discharged five weeks later on August 3rd. It was a very difficult hospitalization. Each day brought new challenges. With the rigors of transplantation, I often had to take it one moment at a time, not just one day at a time, because of the side effects of treatment. The main risks were related to severe GI inflammation with mouth sores, overwhelming infection/sepsis, and bleeding until my new stem cells found their way to the bone marrow cavities and successfully “set up shop.”

So much was out of my control, but whatever part of the process I could control, I did. I was thankful that my doctors and nurses allowed me that privilege. I dressed daily, walked the halls when I could (*26 laps around the unit is a*

mile!), remained vigilant with mouth care despite severe painful ulcerations, kept myself well-hydrated, and avoided intravenous feeding (for fear of infection and/or liver problems). It required great

I am an “educated consumer.” I could ask medical questions and be an active participant in my care; my doctors were very mindful and respectful of this situation. But imagine the *lay* patient who has to endure everything I described without an extensive medical background!

focus and tenacity. However, I also knew that this rocky road after my transplant was the only road to a future life of health. With deep gratitude, I am here today to relay my story to you one year post transplant.

Critical lessons to be learned. I am an “educated consumer.” I could ask medical questions and be an active participant

in my care; my doctors were very mindful and respectful of this situation. At the same time, I understood that I was their patient, not a colleague when it came to treatment, and had to respect their judgment.

But imagine the *lay* patient who has to endure everything I described without an extensive medical background! As a baseline, patients do not feel well; that is why they are hospitalized. Remember, the unknown breeds anxiety, anger, fear, sadness in all of us. Any one of us may manifest these emotions with rage or screaming or complete withdrawal or silence. Even a smiling, seemingly happy face may conceal anxiety and fear inside.

As a patient, I was able to articulate questions. Many patients don't even know where to begin or what to ask. It is imperative to listen to what your patient is saying and what he or she is not saying. The words *silent* and *listen* share the same letters for a reason: to truly *listen* to a patient, one must take time, be approachable, and be *silent*. Standing above a patient, waxing poetically about how fascinating her problem is, does not build

a relationship. Being open, honest, mindful, and understanding of their concerns builds trust, understanding, respect, and greater confidence in you and your treatment – all essential for a rewarding medical career. This has always been my mantra in medicine. It's now been made even more compelling since I've had a view from both sides of the bed. ♥

Providing a Voice for Victims of Disaster

A Penn medical student and his writing partner tell the story of a flood that ravaged a city in India.

By Gregory Richter

On August 11, 1979, a two-mile-long dam in India's Machhu River Valley could no longer hold back the pressure of an eleven-day onslaught of monsoon rain. The result: a flash flood that engulfed thousands in Morbi, a municipality located in the state of Gujarat. In their book *No One Had a Tongue to Speak: The Untold Story of One of History's Deadliest Floods*, Utpal Sandesara, a medical student in the Perelman School of Medicine, and Tom Wooten share insight from 148 interviews and thousands of pages of never-before-released government documents to tell the story of the flood and what it shows about human resilience in time of overwhelming crisis.

"We tried to tell the story of the Machhu dam disaster through the voices of those who lived it – government officials, relief workers, and survivors," said Sandesara. The text weaves accounts from people in vastly different walks of life to show their experience in the tragedy. Among those anecdotes are ones about a paraplegic woman who rode a washbasin to safety and a priestess who was the only survivor among more than one hundred people who sought refuge inside a temple.

In addition to the stories of trials and triumph, despair and distress, the authors bolster their reporting with masses of government documents to substantiate and complement the survivors' first-hand stories. While researching in India for the book, Sandesara met with the man who served as mayor of Morbi when the disaster struck. The former

mayor lent enthusiastic support to the project, in part because he lost his son in the flood and then spent years attempting to hold the government accountable for its mistakes that led to the tragic event.

Forcing Government Transparency

According to *No One Had a Tongue to Speak*, the Gujarat state government engaged in an extensive cover-up of the poor preparation that led to the bursting of the dam. The Machhu Dam-II Inquiry Commission, which was charged with investigating causes of the dam's failures, faced many obstacles from the state government; as a result, the group dissolved 18 months later, before it could effectively complete its study.

By 2006, when the authors visited India, few government representatives knew about the Machhu dam disaster and none would disclose any documents regarding the event or the commission. Sandesara then contacted the chief minister of Gujarat and managed to obtain two minutes with him to discuss what Sandesara framed as "an important matter."

The chief minister discussed his own work as a relief volunteer in the wake of the flood and gave Sandesara and Wooten full access to the state's archives.

For residents who lost loved ones in the flood, this book provides a partial answer from a government that did not provide one for more than 30 years. For those not directly affected by the tragedy, the book





illustrates how disastrous poor planning can be and how important a government's response is. Sandesara and Wooten do not cite a specific figure, but estimates are that up to 25,000 people died in the flood.

No One Had a Tongue to Speak arrives from Prometheus Books with a foreword by one of medicine's most admired practitioners, Paul Farmer, M.D., Ph.D., chair of the Department of Global Health and Social Medicine at Harvard University and cofounder of Partners in Health. The non-profit health-care organization strives to provide an alternative to conventional treatment of the poor and sick and tries to prevent diseases before they occur. Farmer writes that "I was lucky enough to teach Sandesara during his first year at Harvard and to serve as a mentor to him in the years since." For Farmer, one of the important points underscored throughout the book is that "The obvious distinction between 'natural' and 'unnatural' disasters, between events like the 2004 tsunami, say, and Chernobyl, is not so obvious at all upon closer inspection." Human agency often plays an important part. He cites "the arrogance of some in charge of designing

and implementing large infrastructure projects," as in the case of the builders of the Machhu dam. "The destruction of the city of Morbi . . . was not a freak accident so much as an accident waiting to happen."

Bridging Medicine and Anthropology

At Penn, Sandesara is currently combining his passion for research and medicine by also pursuing a Ph.D. degree in anthropology in the School of Arts and Sciences. He concedes that writing a book while working toward two degrees was a challenge, but he was well motivated for the task. "The people we met were entrusting us with something very important to them," said Sandesara. "The completion of this project was a moral imperative. They would say to us, 'You go back to America and write this, and then maybe someone will listen.' It was a story that simply had to be told."

For Sandesara, there is a similarity between pursuing a medical career and writing a book filled with people's stories. As he explains, "The skills of a qualitative researcher – listening carefully, processing facts on the fly, and empathizing while

maintaining objectivity – are precisely those of a good medical history-taker."

A Family Affair

Sandesara and Wooten met as freshmen at Harvard and soon, they report, they had "hatched the plan" for the book. Sandesara's family had emigrated from the Morbi area to the United States. "I grew up hearing about the Machhu dam disaster from my mother and grandparents," says Sandesara, "and it was my mother's emotional reaction to the Indian Ocean tsunami of 2004 that prompted me to begin looking for more information." His first interview for the book was with his grandparents, who provided many of the photos used in *No One Had a Tongue to Speak*. In fact, his grandfather, T. R. Shukla, appears in the book as the principal of Morbi's arts college.

During the research in India, Sandesara's mother and sister served as interpreters when Wooten spoke to local residents, translating between English and Gujarati. In addition, Wooten's father used his experience as a geotechnical engineer to outline the technicalities of dam failures, and his mother drew maps and dia-



An aerial photograph of the Machhu Dam-II after the disaster.



The authors: Tom Wooten, left, and Utpal Sandesara

grams for the book. Sandesara's parents are currently developing a Gujarati translation to bring the text to many of those who were directly affected by the flood.

Human Courage in Time of Crisis

Throughout the numerous stories assembled in *No One*, many show the will to survive and the impulse to help others. One involves Gangaram Tapu, who at the time of the flood was a 24-year-old father of five, serving a life sentence for murder in the subdistrict prison. Tapu, a Hindu, had killed a Muslim in what Tapu characterized as an act of vigilante justice. As the flood bore down on the prison, Tapu helped other inmates move to the roof to avoid the rising level of water. A wave knocked Tapu over, and he struggled to stay afloat as it carried him out of the prison. Even while attempting to save his own life, he managed to save dozens of others from drowning before he collapsed. He turned himself in to the police a few days later. His heroic behavior weighed heavily in his favor, and many weeks later, he was pardoned.

At the other end of the social spectrum are the stories of those like Kanubhai Kubavat, a Brahmin who taught at a teachers' college during the day but also officiated at a small temple near his house in the Tiger Quarter of Morbi. After the flood, all that was left of his house was a pile of debris, despite its location in one of the areas of higher elevation and a raised foundation. Later, after sending his family off to other parts, Kubavat spent his days clearing away debris from his plot: "At night, he slept in the lobby of a local cinema. He did not obtain a clean set of clothes until four or five days after the flood, when he visited a friend in Rajkot." At one point after the flood, Sandesara's relatives, the Shukla family, delivered food and drink to faculty and staff families of a local engineering college whose riverside homes had sustained severe damage.

In his foreword, Farmer emphasizes the importance of investigating disasters – especially an "unnatural disaster," such as the Indian flood and Chernobyl – and discovering their causes. But he also notes that *No One* "is also a social history" in which the authors confront the social



complexities more boldly than in many other comparable books. The range of real-life characters and the vividness with which they are portrayed support Farmer's view.

Recent tragedies in Haiti, Japan, New Orleans, and elsewhere throw light on the crucial need for strong infrastructures in case of environmental disasters and for an equally strong response to aid those afflicted by such disasters. Sandesara and Wooten's account reminds readers of what can go wrong – but also of what communities in crisis can sometimes accomplish. ♥

Leaving the Unlivable

Everyone was leaving Morbi. By early evening, the roads leading out of the city, cleared of debris by the army, had grown thick with knots of people, cars, trucks, and buses. Patriarchs and matriarchs herded children along, driving them gently forward and leading some by the hand. Young men and women guided wizened elders, pausing every few hundred feet to rest. Haggard men with unshaven, dirty faces and torn pants carried soggy white bundles – repositories of all their remaining possessions – on their stooped backs as their sandals shuffled through the grime. Dozens of survivors hung off the backs of trucks that chugged slowly through the mud. Periodic bursts of discordant honking punctuated the funerary silence of the exodus.

Much of Morbi's population exited the city by the night of August 12. With foodstuffs ruined, homes destroyed, utilities obliterated, and bodies decaying at every street corner, the city had become, as many survivors would recall, "unlivable."

No One Had a Tongue to Speak, p. 171

For more information, go to www.thefloodbook.com.



Development Matters

MANY THANKS TO OUR ALUMNI



The spotlight has shone brightly on the Perelman School of Medicine this year.

The School is once again ranked second in the nation and the Hospital of the University of Pennsylvania remains in the top 10. The Perelman gift of \$225 million created a whole new standard for philanthropic giving, not only for the entire University but also for medical schools nationwide.

Clearly expectations are running high for Penn Medicine, and we thank our alumni for their commitment to putting the School at the forefront. Your giving, your guidance, and your good will are critical to our continued success.

More than 2,300 alumni from 52 different classes gave to the Perelman School of Medicine this year, a remarkably broad base of support. We appreciate your generosity and invite you to visit the alumni web site where all donors are acknowledged: <http://alumni.med.upenn.edu/PartnersInGivingHome.php>

Here we recognize the alumni members of the Benjamin Franklin Society, the University's prestigious leadership annual giving society, including our loyal Thistle Society members. We also welcome our first contingent of Young Benjamin Franklin Society members to this leadership group.

Ambassador (Gifts of \$25,000 or more)

- Marjeanne Collins Blasco, M.D. '61, G.M.E. '66
- Robert B. Daroff, M.D. '61
- Stanley J. Dudrick, M.D. '61, G.M.E. '67
- Howard J. Eisen, M.D. '81, G.M.E. '84

- Spencer Foreman, M.D. '61
- Walter J. Gamble, M.D. '57
- Marc B. Garnick, M.D. '72, G.M.E. '73
- Barry J. Gertz, M.D. '79, G.M.E. '82
- Joseph S. Gordon, M.D. '57, G.M. '64
- T Frank S. Harrison Jr., M.D. '61, G.M.E. '65
- Howard E. Hudson Jr., M.D. '67, G.M.E. '81
- * Henry A. Jordan, M.D. '62, G.M.E. '67
- Martin S. Kanovsky, M.D. '78, G.M.E. '79
- James J. Leyden, M.D. '66, G.M.E. '70
- Ray N. Miller, M.D. '61
- T Joel Porter, M.D. '66
- Thomas J. Rohner Jr., M.D. '61, G.M.E. '62
- T Robert G. Sharrar, M.D. '66
- William G. Sharrar, M.D. '66
- Victor B. H. Siew, M.D. '75
- Carol Herman Szarko, M.D. '66, G.M.E. '69
- Judith E. Wolf, M.D., G.M.E. '84

Founder (Gifts of \$10,000 - \$24,999)

- Kenneth Lewis Brayman, M.D. '81
- Wellington Chen, M.D. '76
- Edward Michael Connor Jr., M.D. '78
- T Melisa Cooper, M.D. '82
- T Mark J. Cornfeld, M.D. '82
- John S. Curran, M.D. '66, G.M.E. '70
- T Robert Aaron Greene, M.D. '86
- Rosemary Mazanet, M.D. '86
- T Steven H. Ominsky, M.D. '66

Fellow (Gifts of \$5,000 - \$9,999)

- T Anonymous (3)
- Judi Ashbes Aronchick, M.D. '78, G.M.E. '78
- Dennis A. Ausiello, M.D. '71
- T Ronald B. Barg, M.D. '80
- T Joseph E. Bavaria, M.D., G.M.E. '90
- T Douglas A. Becker, M.D. '82
- T H. Franklin Bunn, M.D. '61
- Emily Fox Conant, M.D. '84, G.M.E. '89
- T David Y. Cooper, M.D. '48, G.M.E. '49
- Raymond M. Dorsch Jr., M.D. '56, G.M.E. '60
- T Sidney N. Franklin, M.D. '42, G.M.E. '46

T = Thistle Society Member, recognizing 3 or more years of consecutive giving
Italics indicates Young BFS members, * = deceased
View a full list of alumni donors at <http://alumni.med.upenn.edu/PartnersInGivingHome.php>

PARTNERS IN GIVING

Class of 1961 Takes Jordan Challenge for Reunion Gift – And Doubles Its Contribution to Raise \$500,000 for Financial Aid



“The stimulus of having your donation double was a really big factor,” said Ted Appel, M.D. '61, who played a major role in his class's fundraising as an active member of the reunion committee.

The Jordan Challenge adds speed as well as size to scholarship gifts, making funds available to students as quickly as possible. So it was an easy decision for the committee to direct its reunion gift to the Challenge, instead of to the class scholarship fund the members had previously supported. As a result, the Class of 1961 commemorated its 50th reunion with a gift of far greater impact than the members could otherwise have achieved.

Along with the benefits of the Challenge, Dr. Appel credits the organizational skill and charisma of the reunion committee's



chair, Stanley Dudrick, M.D. '61, with the fundraising success as well as with great attendance at the festivities in May. “Stan assembled a committee that was looking forward to our 50th reunion and willing to call our classmates to encourage them not only to attend the reunion but to make significant donations.”

Dr. Appel practiced obstetrics and gynecology in Boulder, Colo., until retiring in 1996 and moving to Aspen, where he works part time as a ski instructor. Serving on the reunion committee was a first for him, and he calls it an “experience not to be missed.”

“It allowed me to visit with and talk with good friends from 50 years ago,” he says. “In addition, it was rewarding to be part of an outstanding group of dedicated alumni with great leadership.” All of them, he notes, worked hard to meet the class's goals to help provide funding for future physicians, many facing “staggering debt.”

The late Henry A. Jordan, M.D. '62, G.M.E. '67, and his wife, Barrie, established the Challenge to inspire others to give. The Challenge supports gifts to the John Morgan Scholars program and will continue through 2012.

Dr. Appel says he and many of his fellow alumni could not help but compare the cost of a medical education today – \$71,000 in tuition and expenses annually – to their costs in 1957, no more than \$1,600 in tuition and \$75 a month for a “really nice” apartment. Today, students in the Perelman School of Medicine graduate with an average debt of \$121,000.

Dr. Appel points out that several members of the Class of 1961 know better than many the value of a Penn education. His grandfather graduated with a medical degree from Penn; so did a cousin and his uncle James Z. Appel, president of the A.M.A. in the mid-1960s. Lawrence Wood, M.D. '61, another member of the reunion committee, is the son of Frances C. Wood, M.D. '26, INT '30, Hon '71, a former chair (1947-1965) of the Department of Medicine.

“We all know that we aren't going to have good doctors if we aren't going to help students now,” Dr. Appel says.

Class of 1961 50th Reunion Committee

Theodore B. Appel III, M.D.

H. Douglas Barnshaw, M.D.

Marjeanne Collins Blasco, M.D.

Edwin L. Bryan, M.D.

H. Franklin Bunn, M.D.

Robert B. Daroff, M.D.

Stanley J. Dudrick, M.D.

Norig Ellison, M.D.

Myron Genel, M.D.

Ray N. Miller, M.D.

Wylie L. Overly, M.D.

Sidney Pestka, M.D.

Bruce M. Rodenberger, M.D.

Thomas J. Rohner, M.D.

William Schwartz, M.D.

Amos R. Townsend, M.D.

Lawrence C. Wood, M.D.



Development Matters

- George M. Gill, M.D. '58, G.M.E. '64
- T Michael J. Gitlin, M.D. '75, G.M.E. '79
- T Julie A. Gubernick, M.D. '90
- T G. David K. Hopper, M.D. '67
- T Richard Janeway, M.D. '58, G.M.E. '62
- T Lawrence A. Kerson, M.D. '68
- Louis Kozloff, M.D. '69
- T Robert J. Laskowski, M.D. '78
- T John Meyerhoff, M.D. '75
- T James J. Patton, M.D. '63
- Richard A. Perlmutter, M.D. '75
- Ernest F. Rosato, M.D. '62, G.M.E. '66
- T Augustus John Rush Jr., M.D., G.M.E. '75
- T George M. Sonneborn, M.D. '69
- T Nicholas J. Vincent, M.D. '61
- T Robert E. Weibel, M.D. '55
- T Thomas F. Whyne Jr., M.D. '63

Associate (Gifts of \$2,500 - \$4,999)

- Martin P. Altman, M.D. '66
- Anne-Marie Anagnostopoulos, M.D. '04, G.M.E. '07*
- Rahul S. Anand, M.D., G.M.E. '05
- T William L. Annable, M.D. '71
- Anonymous (2)
- T Katia M. Apollon, M.D. '96
- T David F. Apple, M.D. '62
- T H. Douglas Barnshaw, M.D. '61, G.M.E. '65
- T Andrew N. Bausch, M.D. '82
- T Peter E. Bertozzi Jr., M.D. '71
- Carter D. Brooks, M.D. '59, G.M.E. '63
- Steven M. Brunelli, M.D. '00, G.M.E. '06*
- T Edwin L. Bryan, M.D. '61
- T John T. Carpenter Jr., M.D. '52, G.M.E. '58
- T Gordon Yw Chang, M.D. '88
- Norman P. Chapel, M.D. '77
- T Melvin J. Chisum, M.D. '52
- T *Brian G. Choi, M.D. '02*
- Elisabeth J. Cohen, M.D., G.M.E. '76
- Neil L. Coplan, M.D. '80, G.M.E. '81
- Raymond L. Cox Jr., M.D. '74
- T David E. Craig, M.D. '65
- T *Mary E. Cunnane, M.D. '97, G.M.E. '02*
- T Gordon K. Danielson, M.D. '56, G.M.E. '63
- T Robert Michael Day, M.D. '76

Architect Chosen for Medical Education Center

CO Architects has been selected to design the Perelman School of Medicine's new Medical Education Center. Based in Los Angeles, CO is a nationally known campus architecture firm with an extensive background in medical education and health-care facilities. Of the eight firms considered, CO was by far the most collaborative and the most concerned with meeting the School's particular needs as a leader in the rapidly evolving field of medical education.

"With CO's thoughtful approach to medical school architecture, we will be able to create a focal point for innovative new connections – not only between the medical school and the Health System, but also with our colleagues across Penn's campus," said Dean Larry Jameson.

CO ARCHITECTS

CO – a prefix meaning:
1. together with; 2. joint;
3. equally

This fall, CO and Penn Medicine embarked on the master planning

stage of the project, working closely with user groups that will provide important feedback on design needs.

To learn more, please contact Bill Bole, senior director, Development & Alumni Relations, at wbole@upenn.edu or 215-898-9175.

- T Dean Rice Dennis, M.D., G.M.E. '98
- T Walter John Dex, M.D. '56
- T Ira Dosovitz, M.D. '74
- Daniel Feinberg, M.D. '62
- T Stanton P. Fischer, M.D. '56
- T Jerry D. Gardner, M.D. '66
- T Myron Genel, M.D. '61, G.M.E. '65
- Clarence M. Gilbert, M.D. '57, G.M.E. '63
- T W. Darby Glenn III, M.D. '56
- T *Judah L. Goldberg, M.D. '07*
- Heidi Van Elkan Gordon, M.D. '91
- Jeffrey A. Gordon, M.D. '91

T = Thistle Society Member, recognizing 3 or more years of consecutive giving
 Italics indicates Young BFS members, * = deceased
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Recent Major Gifts

Mrs. Sara Long Buck generously contributed \$1.0 million in securities to the Department of Neurology's Comprehensive Stroke Center, led by Dr. Scott Kasner, in honor of her late husband, **Mr. Alexander Knapp Buck**.

Mr. Richard Schiffrin and Mrs. Barbara Schiffrin continue their generous philanthropy to Penn Medicine with a \$1.0 million pledge to establish the "Barbara and Richard Schiffrin Innovative Cancer Research Fund." This leadership gift will support basic and translational cancer research within the Abramson Cancer Center and the Abramson Family Cancer Research Institute.

The Schwab Charitable Fund recently contributed \$600,000 to the "Ovarian Cancer Vaccine Fund," making its total giving to this project \$1.3 million. This initiative has provided critical funding to the groundbreaking work of Dr. George Coukos on ovarian cancer, including immune therapy research and the development of the ovarian cancer vaccine.

Wyncote Foundation has pledged \$1.58 million to create the "John C. and Chara C. Haas Fund for Frontotemporal Lobar Degeneration (FTLD) Research and Treatment." This gift will provide investigators involved in frontotemporal lobar degeneration and related diseases with financial support for innovative research, treatment, and clinical care in the Penn Comprehensive Frontotemporal Lobar Degeneration Center.



Progress Notes

Send your progress notes to:
 Andrea Pesce
 Penn Medicine Development
 and Alumni Relations
 3535 Market Street, Suite 750
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'60s

John R. Durocher, M.D. '67, G.M.E. '71, Rock Hall, Md., medical director for Hospice of Queen Anne's for nearly 12 years, received the Lifetime Achievement Award from the Hospice and Palliative Care Network of Maryland. The network's highest award recognizes his outstanding dedication to promoting quality and compassionate hospice care. Durocher retired as head of the hematology/oncology section of Pennsylvania Hospital and relocated to Rock Hall, where he established the Townsend Memorial Medical Clinic, a free health-care clinic serving uninsured and indigent adult residents.

Patricia A. Gabow, M.D. '69, G.M.E. '73, chief executive officer of Denver Health, received the 2010 David E. Rogers Award from the Association of American Medical Colleges. According to the A.A.M.C., "Dr. Gabow oversees a high-performance health system that cares for one-fourth of all adults and 40 percent of all children in the Denver metropolitan area, nearly half of whom are uninsured. On a daily basis, she performs the health-care equivalent of a high-wire balancing act: expanding access to care for Colorado's most vulnerable populations, while at the same time meeting Denver Health's goal of 'level one care for all.'" Among her other achievements, the Association highlighted her overseeing of the implementation of "a sophisticated health IT infrastructure, which links a patient's electronic health record to providers no matter where he or she enters the system. Such forward thinking has made Dr. Gabow an authority on integrated health systems, and her expertise has been solicited by numerous boards and commissions at both the local and na-

tional levels, including the office of the Denver mayor, the Institute of Medicine, and the Sullivan Commission." In addition, Gabow is a nationally recognized expert on autosomal dominant polycystic kidney disease and has taught about renal disorders at the University of Colorado Health Sciences Center for nearly 40 years.

'70s

Joseph M. Lane, M.D., G.M.E. '72, an orthopaedic surgeon, received the Lifetime Achievement Award at the Annual Tribute Dinner of the Hospital for Special Surgery. He was recognized for his innovative research on bone disease and the use of bisphosphonates in treating osteoporosis. In particular, his research helped identify the possible link between long-term use of osteoporosis medications and increased risk for certain types of bone fractures. Lane is currently the hospital's chief of the Metabolic Bone Disease Service and medical director of the Osteoporosis Prevention Center.

After receiving a medical degree from Harvard Medical School in 1965, Lane went on to HUP, where he completed his internship, fellowship, and residency. He is a professor of orthopaedic surgery at Weill Cornell Medical College and an assistant dean there and at the Hospital for Special Surgery. With expertise in bone tumors, metabolic bone disease, geriatric vertebral compression fractures and geriatric hip fractures, Lane has served as chairman of the Oversight Panel on Women's Health for the American Academy of Orthopaedic Surgeons and as a member of its Council on Research.

Frederick Goldberg, M.D. '75, a pediatrician and executive physician at hospitals in Syracuse and Utica, has been named vice president of medical affairs and chief medical officer at Nathan Littauer Hospital. He completed his residency at Upstate Medical Center in Syracuse and earned an M.S. degree in health-care management from Harvard University.

Marc Wallack, M.D., G.M.E. '75, and his wife, Jamie Colby, have written *Back to Life After a Heart Crisis: A Doctor and His Wife Share Their 8-Step Cardiac Comeback Plan* (Avery/Penguin Group, 2011). He is chief of surgery at Metropolitan Hospital and vice chair of the Department of Surgery at New York Medical College; she is a longtime network news anchor and journalist. A marathon runner, Wallack experienced some chest pain while running his typical morning trek through Central Park. Two days later, after discovering that more than 95 percent of his arteries were blocked, he underwent quadruple bypass surgery. *Back to Life* was written as a step-by-step guide to tackling the physical, emotional, and career

issues surrounding a cardiac recovery. The book also includes a gripping first-person narrative, as in this scene:

Now I wasn't the person wearing the blue gown and mask and holding a scalpel. I was the guy who would have the iodine preparation on his chest and legs. I would be stained a deep burnt orange. I'd have a breathing tube down my throat.

My chief of cardiac surgery, someone I'd recruited to work at the hospital a few years before, was going to crack open my breastbone, spread apart my ribs, and take my aorta (the main artery that carries blood from the heart to smaller arteries throughout the body) and another large vein and attach both to a machine that would pump oxygen-

Jerald Winakur, M.D. '73, has practiced internal and geriatric medicine in San Antonio for more than 30 years. He is also a clinical professor of medicine at the University of Texas Health Science Center, where he is an associate faculty member at the Center for Medical Humanities. His memoir, *Memory Lessons: A Doctor's Story*, was published by Hyperion in 2009. The genesis of the book was an article he wrote about his father's initial diagnosis of Alzheimer's disease and the issues that arose around caring for him. "What Are We Going to Do with Dad?" was originally published in *Health Affairs* and was then excerpted by *The Washington Post* and syndicated in newspapers across the nation. *Memory Lessons* shows Winakur in two overlapping roles — skilled professional and loving son. Here is a vivid excerpt, an account of when the reality of his father's illness hits home:

There is no walking away now. My father is demented. His agitation and paranoia arise from distorted memories, nightmares he can no longer separate from reality. He is an abandoned child. He searches for his boyhood home on Boarman Avenue, or perhaps our first house in

Forest Park. He hears voices but can't decode what is being said and his mind assumes the worst: My mother is insulting him, planning to run off; his sons are belittling him, his mother is scolding him, his older brothers and sisters are teasing him. He is lost, with no father to turn to. I see that he has wet himself; a dark ring marks his place on the couch.

My anger melts away. I have been through this before — not only with my father but with many of my patients over the years. I have been cursed, spit on, bitten, pinched, and punched by demented old folks over the decades. A poor woman threw a shoe at me when I stepped inside the door of her hospital room. The day before, she thought I was the devil.

I assume my doctor role with my father; I retreat once again into the armor of my starched white coat. As a doctor I know what to do; as a son I am uncertain. "Talk therapy" will not work here; the time for psychoanalysis, for delving deep into his life has long since passed. It is time to acknowledge his fears at the moment, to let him know I will do whatever I can to ease his agitation.

— *Memory Lessons*, p. 205

ated blood throughout my body. This machine would temporarily function as my heart.

He was going to stop my heart. (pp. 14-15)

'80s

Jeremy Nobel, M.D. '81, M.P.H., has been appointed medical director of Northeast Business Group on Health, a network of employers, providers, insurers, and other organizations seeking to improve the quality and reduce the cost of health care. Nobel, who had served as a senior medical advisor to the group, is board-certified in internal and preventive medicine and earned a master's degree in epidemiology and health policy from the Harvard School of Public Health.

Jonathan Leff, M.D. '84, was appointed chief medical officer of KaloBios Pharmaceuticals, Inc., based in San Francisco. Previously, he had been vice president and chief medical officer of Halozyme Therapeutics, Inc. He has also been vice president and global head of inflammation clinical development at Roche and vice president of North American medical affairs at Amgen.

Paul J. DiMuzio, M.D. '89, the William M. Measey Professor of Surgery at Thomas Jefferson University, was elected a Distinguished Fellow by the Society for Vascular Surgery. He currently serves as director of the Division of Vascular and Endovascular Surgery, program director of its Fellowship in Vascular Surgery, and co-director of the Jefferson Vascular Center. He is board certified in both vascular and general surgery. Listed as a "Top Doctor" in vascular surgery by *Philadelphia Magazine*, DiMuzio reviews for 13 professional journals. His research involves the creation of tissue-engineering bypass grafts made from adult stem cells.

'90s

Brian P. Brooks, M.D. '93, Ph.D., an investigator at the National Eye Institute and chief of its Unit

on Pediatric, Developmental, and Genetic Ophthalmology, is one of the winners of the Carl Camras Translational Research Awards. The award is presented after an international competition by the Association for Research in Vision and Ophthalmology. Nominees for the awards must be researchers early in their careers who exhibit excellence in research and whose discoveries or observations must have led to, or have the promise of leading to, clinical applications. A Fellow of the American Board of Ophthalmology and of the American Board of Medical Genetics, Brooks received a 2009 Presidential Early Career Award for Scientists and Engineers, the Federal Government's highest honor for early-career scientists and engineers.

Quan D. Nguyen, M.D. '93, M.Sc., associate professor of ophthalmology at the Wilmer Eye Institute of Johns Hopkins University School of Medicine, is one of the winners of the Carl Camras Translational Research Awards. The award is presented after an international competition by the Association for Research in Vision and Ophthalmology. Nguyen is one of the editors of *Retinal Pharmacotherapy*, 1st Edition (Elsevier, 2010) and serves on the editorial board of *Journal of Ocular Inflammation and Infection*. In 2009, he received the Research to Prevent Blindness Foundation Physician Scientist Award.

Jennifer L. Hunt, M.D. '97, G.M.E. '01, has been named chair of the Department of Pathology and Laboratory Services in the College of Medicine at the University of Arkansas for Medical Sciences. She had been associate professor of pathology at Harvard Medical School and associate chief of pathology and chief of anatomic and molecular pathology at Massachusetts General Hospital in Boston. Recognized for her expertise in head and neck, endocrine, and molecular anatomic pathology, she is the author of more than 110 publications in the field and in quality assurance and laboratory operations. Hunt recently was elected president-elect of the Association for Molecular Pathology.

'00s

Matthew Oster, M.D. '04, M.P.H., a pediatric cardiologist, has joined Children's Healthcare of Atlanta at the Children's Sibley Heart Center. He completed his residency in pediatrics at the University of California in San Francisco and took a fellowship in pediatric cardiology and an advanced fellowship in health-outcomes research at Children's Healthcare of Atlanta. Oster is also a senior associate of pediatrics at Emory University School of Medicine, where he received the Pediatrics Teaching Award. His areas of interest include outcomes research, quality improvement, prevention of congenital heart disease, and public health.

OBITUARIES

'30s

Kenneth A. Seifert, M.D., G.M. '39, Hot Springs, Ark., a retired physician who had maintained a surgical and family practice in Wauwatosa, Wis.; January 28, 2011. He was 100 years old. As a captain in the U.S. Army Medical Corps during World War II, he participated in the liberation of the Ebensee concentration camp in Austria.

'40s

Howard U. Kremer, M.D. '42, Farmington, Conn., an emeritus associate professor of clinical medicine at Penn; December 16, 2010. During World War II he served with the U.S. Army Medical Corps in Europe. He maintained a private practice in Philadelphia for many years and was president of the Philadelphia County Medical Society, 1984-85.

John B. Blalock, M.D. '43, Birmingham, Ala., a retired thoracic surgeon at Tulane University hospital; January 30, 2011. He did his internship at Jefferson Hillman Hospital in Birmingham. During World War II, he was a ship physician in the Pacific, and in the Korean War he served at a naval air station in Tennes-

see. Blalock was a Diplomat of the American Board of Surgery and the American Board of Thoracic Surgery.

Gaines L. Cooke, M.D. '43, Grenada, Miss., an internist and former chief of staff at the Grenada Lake Medical Center; December 12, 2010. During World War II, he served as a U.S. Navy physician. He was a founder of the Mississippi Heart Association.

Morgan L. Zarfoss, M.D. '43, York, Pa., a retired physician who specialized in internal medicine and arthritis; November 6, 2010. During World War II, he was a captain with the U.S. Army Medical Corps. In York he spent more than 50 years in private practice. During this time he was appointed medical director for York County and also operated his own arthritis clinic. He also worked in the pathology lab of York Hospital, where he was on staff for 30 years.

Howard Brooks Cotton, M.D. '45, Birmingham, Ala., a retired physician and longtime medical director of the Protective Life Insurance Co.; February 15, 2011. He had served in the U.S. Army Medical Corps, attaining the rank of captain. A fellow of the American College of Physicians, he had been a clinical assistant professor of medicine at the University of Alabama School of Medicine.

Adolph W. Vogel, M.D. '45, Glenolden, Pa., a retired ophthalmologist; December 4, 2010. He had served in the U.S. Army Medical Corps, reaching the rank of captain. He interned in Lancaster and served a residency at Duke University Medical Center. During his early years as a doctor, he worked in the research departments of Lederle Laboratories and Merck & Co., and later at Wills Eye Hospital. In 1974, he spent a year in north-central Pakistan, where he performed cataract surgery as part of a British volunteer mission. On another mission, he went to Alaska to treat indigenous Indians.

William J. Weller, M.D. '46, San Jose, Calif., a retired anesthesiologist and family practitioner; April 16, 2010. He had served in the



U.S. Navy. He had worked in the Department of Obstetrics and Gynecology at San Jose Hospital and Health Center.

Theodore E. Keats, M.D. '47, G.M.E. '51, Charlottesville, Va., former Alumni Professor of Radiology at the University of Virginia; December 10, 2010. He was the author of nine textbooks. During the Korean War he was a captain with the U.S. Army Medical Corps in Japan.

Adrian M. Sabety, M.D., G.M. '47, Sanibel, Fla., a retired professor of surgery at the New Jersey College of Medicine; February 18, 2011. Founder of the Vascular Society of New Jersey and the American Venous Forum, he was a former president of the New Jersey Society of Thoracic Surgeons.

Stephen B. Burdon, M.D., G.M. '48, Peoria, Ill., a former professor of urology at the Peoria School of Medicine; February 2, 2011. During World War II, he served with an Army mobile surgical hospital in Asia; he was awarded a Bronze Star for his service in central Burma.

John F. Lynch Jr., M.D., G.M.E. '48, Wrightsville, Beach, N.C., a former clinical associate professor of pediatrics at the University of North Carolina; November 16, 2010. He had served as secretary-treasurer of the North Carolina Pediatric Society.

Thomas L. Shields, M.D., G.M. '48, Fort Worth, a retired chief of dermatology at Harris Hospital and John Peter Smith Hospital; January 11, 2011. During World War II, he served as a doctor in the Army's 97th Infantry Division; he was awarded a Bronze Star.

Robert E. Smith, M.D. '48, a retired family practitioner; Mount Vernon, Ohio; December 17, 2010. After practicing in Parsons, W.Va., Oak Hill, Ohio, and Medina, Ohio, he became involved in family practice residencies. He served at the Northeastern Ohio Universities Colleges of Medicine and Pharmacy, the University of Mississippi, and Ohio State University Medical School. In 1983, he joined Floyd County Medical

Center in Rome, Ga., where he started a residency program and stayed for 13 years. Smith served 12 years on the Medina City School Board and helped found the Medina County Joint Vocational School. He was a charter member of the American Board of Family Practice.

Zachary B. Friedenberg, M.D., G.M.E. '49, Ardmore, Pa., a professor of medicine at Penn and former chief of orthopaedic surgery at the old Presbyterian Medical Center and Chester County Hospital; January 27, 2011. He earned his medical degree from the College of Physicians and Surgeons of Columbia University. While at Penn he was an early researcher in the electrical healing of bone fractures by direct current stimulation. He set up the Clinician Scientist Award of the Orthopedic Research and Education Foundation, to help surgeons devote time to research. His books on medical history include *The Doctor in Colonial America*; *Medicine Under Sail*; and *Magic, Miracles, and Medicine*, which was published last year. During World War II, he was an Army surgeon in the 95th Evacuation Hospital in North Africa and Europe; he took part in the D-Day landings and won several honors. In 2002 he worked on a film for the American Academy of Orthopedic Surgeons, *Wounded in Action*, documenting the role of orthopaedic surgeons in World War II, and on a subsequent exhibit, "A Legacy of Heroes." His wife is Kathleen M. Friedenberg, M.D., G.M.E. '67, a sculptor.

'50s

George W. Deitz III, M.D., G.M. '50, Palm City, Fla., a retired cardiologist and former instructor at Penn's medical school; January 3, 2011. A pilot, he was senior aviation medical examiner for the F.A.A. During World War II he served in the U.S. Navy. Dietz also was director of cardiac care at Jeanes Hospital in Philadelphia.

Elizabeth Pellett Gilmore, M.D. '50, Miami, a retired clinical associate professor of psychiatry at the University of Miami; April 4,

2011. She initially trained in internal medicine and practiced geriatric medicine. One of the first female psychiatrists in Miami Dade County, she served in various positions with the South Florida Psychiatric Society. She was married to Hugh R. Gilmore III, M.D. '50, G.M. '54, and her brother is John R. Pellett, M.D. '54, G.M. '61.

Harry C. Sammons, M.D., G.M. '50, Fenton, Mo., January 20, 2011.

Homer F. Schroeder, M.D., G.M. '50, Greensboro, N.C., a former clinical professor of obstetrics and gynecology at the Medical College of Toledo in Ohio; December 19, 2010. He had served in the U.S. Naval Reserve.

Ross O. Bell Jr., M.D. '51, Wheeling, W.Va., long-time director of the Clinical and Anatomic Laboratories of Ohio Valley Medical Center; July 5, 2010. He served in the U.S. Army 1954-1957 and was honorably discharged as captain.

Sheldon B. Goldstone, M.D., G.M.E. '51, Naples, Fla., a dermatologist who had maintained a practice in Scranton, Pa., for many years; December 6, 2010. He earned his M.D. degree from Jefferson Medical College. He served as an officer in the Army during World War II, with the rank of captain. For 25 years, he taught graduate-level medical students at Penn's medical school.

Silas J. Ginsburg, M.D. '52, G.M.E. '55, Jenkintown, Pa., November 19, 2010. An obstetrician-gynecologist, he retired in 1995 from Abington Hospital.

Frederick R. Hood Jr., M.D. '52, G.M.E. '59, Bellingham, Wash., a retired thoracic surgeon; February 27, 2011. He had specialized in burns and reconstructive work at his practice in Anchorage, Alaska. From 1983 to 2001, he was director of thermal services at Providence Hospital in Anchorage.

Walter J. Helsing, M.D., G.M. '53, Beaver, Pa., a retired orthopaedic surgeon; February 9, 2011. He had been president

of the Pennsylvania Orthopedic Society.

Clarence L. M. Samson, M.D., G.M. '53, New Orleans, a former clinical professor of ophthalmology at Tulane University; January 14, 2011. He earned his M.D. degree from Louisiana State University School of Medicine in 1943. After serving in the Pacific Theater during World War II, Samson entered private practice in 1955 and practiced ophthalmology until his retirement in 2000. He had served as president of the New Orleans Academy of Ophthalmology. He also served as president of the staff at the Eye, Ear, Nose, and Throat Hospital and as its chief of ophthalmology.

James E. C. Walker, M.D. '53, Avon, Conn.; January 6, 2011. He retired from medicine and public health in 1992 but remained active through 2002. He had served in several administrative positions at Peter Bent Brigham Hospital-Harvard Medical School and at the University of Connecticut School of Medicine. A former president of the board of the American Heart Association of Hartford, he had also served for several years as president of the Canadian/American Health Council.

John H. Wilkinson, M.D., G.M. '53, Dublin, Ohio, a retired physician; February 2, 2011. He founded Home Health Care Services at Homestead Hospital in 1964.

Harry H. Haddon Jr., M.D., G.M. '54, Chambersburg, Pa., a former chief of staff at Chambersburg Hospital; December 24, 2010. He graduated from Temple University School of Medicine in 1948. He was a lieutenant junior grade in the Navy, serving two years at the Philadelphia Naval Yard and as the medical officer on the U.S.S. *Corregidor* during the Korean War.

David E. Hallstrand, M.D., G.M. '54, Pinecrest, Fla., a former clinical professor of surgery at the University of Miami; December 1, 2010. He served in the Navy and Public Health Service and was discharged in November 1946. After graduating from Em-

ory Medical School in 1945, he practiced general medicine in Tallahassee, then returned for more training at Penn's Graduate School of Medicine. A Diplomat of the American Board of Surgery, he was also a Fellow of the American Board of Surgeons and of the International College of Surgeons. Hallstrand had served as chairman of the founding bond committee for the creation of South Miami Hospital. After closing his private practice, he worked for JCAHO for five years as a chief inspector. In 1991 he served as interim CEO of South Miami Hospital.

Phanor L. Perot Jr., M.D., Ph.D., G.M.E. '54, Charleston, S.C., retired chair of neurological surgery at the Medical University of South Carolina; February 2, 2011. A graduate of the Tulane University School of Medicine, he earned a Ph.D. degree in neurosurgery and neurophysiology from McGill University. In addition to leading the Medical University's neurological surgery program, he served as president of many neurosurgical organizations, including the American Academy of Neurological Surgeons, and as first vice president of the World Federation of Neurological Societies.

Charles J. Rife, M.D., G.M.E. '55, Mechanicsburg, Pa., a retired ophthalmologist; September 25, 2010.

Roger G. Boylan, M.D. '56, Tempe, Ariz., a retired physician who had helped the planning and building of Desert Samaritan Hospital; January 31, 2011.

Joseph A. Gian-Grasso, M.D., G.M.E. '57, Trenton, N.J., a retired surgeon; January 11, 2011. During World War II and the Korean War he served in the U.S. Navy, including time aboard the aircraft carrier *U.S.S. Bunker Hill*; he attained the rank of lieutenant commander. He attended the State University of New York-Downstate Medical Center and was an attending physician and surgeon at Saint Francis Hospital for more than 50 years. He was the recipient of the Golden Merit Award from the Medical Society of New Jersey.

Harvey L. Glass, Ph.D., G.M. '57, Hartford; August 24, 2010. He began his career interning at the VA Hospital in Coatesville, Pa., and later opened his private practice in Hartford. He was a clinical psychologist with the Children's Service of Connecticut and served on the staff of the Hartford Rehabilitation Center. He was also a highly regarded diagnostic child psychologist working with school systems across Connecticut.

M. Edwin Green Jr., M.D., G.M. '57, Mechanicsburg, Pa., a retired physician; July 25, 2010.

Otillia Lerner Beaubier, M.D., G.M. '58, Saskatoon, Sask., February 23, 2010. She earned her medical degree from the University of Toronto in 1954. After her son was born in 1960, she left medicine and became a full-time homemaker.

Richard W. Hazen, M.D. '58, New London, Minn., November 18, 2010. A radiologist, he had worked in the Division of Radiological Health of the United States Public Health Service at one time.

Charles H. Wingert Jr., M.D. '58, G.M. '62, Bellefont, Pa., a retired dermatologist; January 23, 2011. He served in the U.S. Air Force, 1958-60.

Louis G. McAfoos Jr., M.D., G.M.E. '59, Downingtown, Pa., a retired physician who later served as an Episcopal priest at Grace Church in Haddonfield, N.J.; December 6, 2010. He was a flight surgeon in the U.S. Army Air Forces during World War II. In addition to operating a private practice in South Jersey for four decades, McAfoos served in various positions at West Jersey Hospital, including chief of the medical staff.

'60s

Miles H. Sigler, M.D., G.M.E. '62, Haverford, Pa., who founded the nephrology division at Lankester Hospital and directed it for more than 40 years; November 29, 2010. He graduated from Cornell University Medical School

in 1955 and served his residency in internal medicine at Thomas Jefferson University Hospital, then completed a nephrology fellowship at HUP. From 1958 to 1960, he served as a medical officer in the U.S. Army's Operation Bootstrap in Puerto Rico and was discharged at the rank of captain. He was known for developing Lankester's kidney-transplant program in 1994, the first of its kind in the Philadelphia suburbs. He also helped introduce a technique called slow continuous hemodialysis, in which postoperative patients have their blood cleaned around the clock.

Sherwood Appleton, M.D., G.M.E. '63, Thornhill, Ontario, a psychiatrist who had specialized in sleep disorders; June 21, 2009.

William H. Shapiro, M.D., G.M. '65, Rutherfordton, N.C., a retired cardiologist at Rutherford Hospital; May 20, 2010.

'70s

Enos Trent Andrews, M.D., G.M.E. '71, San Francisco, a retired orthopaedic surgeon; October 12, 2010. He earned his medical degree from Hahnemann Medical College. From 1963 to 1967, Trent served in the U.S. Navy as a battalion surgeon with the Marines. A former associate clinical professor at the University of California at San Francisco, he invented the Andrews Spinal Surgery Table and the Andrews Frame.

Lewis D. Yecies, M.D. '71, Watertown, N.Y., a professor of rheumatology and clinical immunology at S.U.N.Y. Stony Brook; January 23, 2011. He had served in the United States Public Health Service at the National Institutes of Health, the Bethesda Naval Hospital, and the Walter Reed Army Medical Hospital. From 1993 to 1999, he was chairman of the Department of Medicine at Samaritan Medical Center in Watertown and served on its medical executive committee for 16 years. A former president of the Medical Society of Jefferson County, N.Y., he had also been president of the Fifth District of

the Medical Society of the State of New York and founding member and chairman of the Jefferson County Physicians Organization.

Harry G. Light, M.D., G.M.E. '72, Bethlehem, Pa., a retired surgeon; February 13, 2011. Former president of the Lehigh Valley Medical Society, he had been a governor of the Eastern Pennsylvania Chapter of the American College of Surgeons.

'80s

S. David Scott Jr., M.D., Ph.D., G.M.E. '81, Erdenheim, Pa., a pulmonologist; Feb. 2, 2011. He earned his medical degree at Jefferson Medical College and had a doctorate in physiology.

Naomi R. Uri, M.D. '89, Minneapolis, a physician who practiced internal medicine for HealthPartners, an H.M.O.; February 19, 2008.

FACULTY DEATHS

Baruch Blumberg, M.D., Ph.D., professor of medicine and anthropology and a Nobel laureate; April 5, 2011. He was best known for identifying the hepatitis B virus, a discovery that led to the first vaccine against hepatitis B, the first vaccine capable of preventing a human cancer. He shared the 1976 Nobel Prize, for "discoveries concerning new mechanisms for the origin and dissemination of infectious diseases." His book *Hepatitis B: The Hunt for a Killer Virus* detailed the discovery. During World War II, Blumberg served as a deck officer and then a commanding officer in the U.S. Navy, while simultaneously pursuing a physics degree at Union College. He earned his M.D. degree from Columbia University and his Ph.D. in biochemistry from Oxford University, and he conducted field work in Surinam, Nigeria, Australia, and several other locations. From 1957 to 1964, Blumberg worked at the National Institutes of Health. He began at Penn as an associate professor of medicine in 1964, while being affiliated with the Fox Chase



Cancer Center. Two years later, he received a secondary Penn appointment as an associate professor in genetics; he was made full professor in 1970 and held another secondary appointment as a professor of anthropology. In 1977, Blumberg was named a University Professor – a rare distinction at Penn – of both medicine and anthropology. In 1989 he returned to Oxford as master of Balliol College. He also taught at Stanford University. He was founding director of the NASA Astrobiology Institute, where he held the title “distinguished scientist.” He received an honorary degree from Penn in 1990. In 2005, he was elected president of the American Philosophical Society, founded by Benjamin Franklin, and held that position at his death.

F. William Bora Jr., M.D., Gladwyne, Pa., emeritus professor of orthopaedic surgery; February 23, 2011. He began teaching at Penn as an instructor in 1962 and remained on the faculty until retiring in 1997. He also served as chief of hand surgery at the Philadelphia Veterans Affairs Medical Center and maintained an orthopaedic practice in Yeadon. He is credited with performing the second hand-reattachment surgery in U.S. history in 1965. Author of *The Pediatric Upper Extremity: Diagnosis and Management*, he was editor of the *Journal of Hand Surgery* in the early 1990s. He served as a flight surgeon with the U.S. Air Force in Korea and Japan, 1955-57.

John Lott Brown, Ph.D., Tampa, Fla., a former associate professor of physiology; January 16, 2011. He joined Penn as an assistant professor in 1955 and served as an associate professor, 1961-65. He left Penn to hold administrative positions at Kansas State University and the University of Rochester. From 1978 to 1988 he was president of the University of South Florida, a period in which the university established a medical school and a cancer center.

George W. Deitz III. See Class of 1950.

Zachary B. Friedenberg. See Class of 1949.

Sheldon B. Goldstone. See Class of 1951.

Andrew M. Nemeth, Wynnewood, Pa., emeritus professor of anatomy and a former lecturer in psychiatry; February 7, 2011. He earned his medical degree from Johns Hopkins University. In 1956, he joined Penn’s anatomy department (now cell and developmental biology). While pursuing research on enzyme formation in the late fetal and newborn periods, he taught histology and gross anatomy to first-year medical students. He also maintained a private practice in psychiatry for many years, and in 1985, briefly joined the clinical-practice group of Penn’s psychiatry department. He retired in 1996.

Patrick B. Storey, M.D., Haverford, Pa., emeritus professor of medicine and former associate dean for international medical programs; February 17, 2011. He earned his medical degree from Georgetown University in 1947. He came to Penn as professor of community medicine at the School of Medicine and as medical director of Graduate Hospital. He became professor of medicine in 1977 when his primary department changed. In 1989, he became emeritus, and that same year he was appointed a member of the Provost’s Council on International Programs. In 2000, Storey was honored with the Community Leadership Award by Philadelphia Health Services for his pioneering efforts in making community health care accessible for thousands of families. He learned Russian as an adult and intensively studied the Soviet Union’s health-care system. Following the collapse of the Soviet Union, Storey was also involved in establishing academic ties with the Pavlov Medical Institute, and he was instrumental in bringing Russian medical students to the United States.



Trust in HUP Inspires a Trust



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eter Gartman is a consummate planner, and when it came time to retire as president of Independent Production Services, he wanted to make sure his health was in the right hands. The Hospital at the University of Pennsylvania’s highly ranked reputation with world-class physicians played a key role in his decision to relocate from Shelburne, Vermont, to the Philadelphia area.

“I have had long-term chronic health issues, and I knew I would be availing myself of the best and brightest,” he said. “I knew being close to HUP was a wise choice.”

In memory of his father, Edward, a University of Pennsylvania alumnus and respected physician, Mr. Gartman decided to establish a charitable remainder unitrust (CRUT) with Vanguard for the hospital. The trust would provide income to Mr. Gartman and his wife, Brenda, and ultimately benefit HUP.

Mr. Gartman informed Penn’s planned giving office of his arrangements: “I wanted my gift to be known, and I have always been willing to talk and encourage others to give back. Quality medicine and health care are important to me, and were to my father. This is my way of honoring him and giving back to the community in a way that can have a tremendous positive impact on people’s lives.”

The inspiration for his philanthropy also arose from his thoughts on how he wanted to be remembered. “You can’t take it with you,” Mr. Gartman said. “Material possessions are all well and good, but what legacy do you want to leave? It is always mystifying to me when I talk to the very wealthy people who are hesitant to make a gift. What are they waiting for? Why not use your resources in a way that helps others? What you receive in return is wonderful.”

Mrs. Gartman encouraged his decision to support HUP. “High-quality health care is important not only to us, but to the others as well,” she said. “I feel people should give what they can, whether it is money, talent, or time.”

Peter and Brenda Gartman chose one of a multitude of creative gift opportunities that benefit both Penn Medicine and donors. As you plan your financial future, the Office of Planned Giving is ready to assist in developing an appropriate strategy to incorporate your charitable objectives. Contact Christine S. Ewan, J.D., senior director of Planned Giving, at 215-898-9486 or e-mail her at cewan@upenn.edu. For more information, please visit the web site at www.plannedgiving.med.upenn.edu.

What Lies Ahead in Health Care

Less than three years after *The Edge of Medicine* appeared, William Hanson, M.D. '83, G.M.E. '89, has now given us *Smart Medicine: How the Changing Role of Doctors Will Revolutionize Health Care* (Macmillan). A longtime professor of anesthesia and critical care at Penn Medicine, Hanson was recently named its first chief medical information officer. Perhaps he can offer some tips on time management to the rest of us.

Hanson's new book examines many of the trends now shaping health care, such as the rapid adoption of smart phones and iPads by clinicians who can use them as stethoscopes and reference sources, and enhanced medical dummies for training. *Penn Medicine* has covered some of these topics in recent years: increased computerization; the emphasis on teams and leadership; the growth of hospitalists; revised standards for medical residents' hours; training in humanism and professionalism. But *Smart Medicine* brings the themes together with a broader context – and a *simpatico* narrator.

One feature of *Smart Medicine* is how Hanson mixes the old and the new, often with examples from his Penn experiences. As in *The Edge of Medicine*, his father, who also taught and practiced at Penn, plays an important role. Amid the changes that have profoundly affected how medicine is delivered today, Hanson does not overlook lessons he learned from his father and his father's contemporaries. One need not look far to find contemporary complaints of patients who felt ignored by those ostensibly treating them. Despite the pace of today's health care, Hanson offers the example of one of Penn's beloved teachers and clinicians, the late Truman Schnabel, M.D. '43, G.M.E. '47,

as he took Hanson and other residents on rounds:

"His examination was thorough but respectfully attentive to any feelings of modesty she might have felt in a room full of strangers. . . . When it came time to leave, unlike many of my other professors, Schnabel carefully retied her gown and drew the bedcovers up in the way he had found them. He then wheeled the table with her food and phone back next to the bed. He said a few reassuring words to summarize, and we left. Once in the hallway, Dr. Schnabel reviewed what he'd found on exam and headed off for the next patient, but then stopped with an afterthought: 'You should always leave the patient just the way you found her,' because, he said, 'it is respectful.' "

The Need to Adapt and Evolve

Hanson concedes it's harder for practitioners today to spend the same amount of time with their patients as in the 1950s, 1960s, and 1970s. Back then, a practitioner's day might include visits from eight to ten office patients, followed by rounds in the hospital; today, a practitioner might see about 25.

But Hanson also underscores why some of these major changes are clearly for the better. His father's handwriting was almost illegible – but electronic medical records remove that problem, and they are swiftly available in diverse locations.

Some observers have likened the academic health system to an ecosystem: It is complex, its parts are interrelated, and it must be able to adapt to changes in the environment. Hanson employs the metaphor as well, but his version is somewhat more worrisome. Medicine, he writes, "is a giant ecosystem that's in constant ferment. Physicians who fail to stay current, to read, and to evolve

get left by the wayside, which is a problem for their patients and a missed opportunity for themselves."

Later, in Chapter 14, "Survival of the Fit," Hanson amplifies his argument: "Species in an ecosystem either find hospitable niches or become food for other species and die off." He posits "a cutthroat era of medical evolution." For part of his argument, he uses "Dr. Bryan Scherr (not his real name)," who was a very successful cardiac surgeon, a "predator at the apex of the medical system." But as the number of coronary arterial bypass procedures (CABGs) began to decline, so did Dr. Scherr's position in the system, until he was forced to become a wandering cardiac surgeon working nighttime shifts. At the same time, some revolutionary new tools – the balloon coronary angioplasty and coronary vascular stents, for example – increasingly allowed cardiologists who used to diagnose the patients and send them on to surgeons like Dr. Scherr now to reopen blocked heart vessels non-invasively, "thereby eliminating the need for cardiac surgery in all but the most complicated cases."

Another important trend Hanson writes about is the growth of Minute-Clinics and other customer-friendly sites. In an amusing chapter, he learns to his chagrin that his own wife, a nurse practitioner, has taken their children to such a place for their flu shots – and he must investigate incognito, wearing dark glasses! But his account again underscores the constant evolution of medicine and the need for health-care organizations to adapt and find new and more efficient ways to deliver care.

As a bonus, I now have an unfamiliar word to try to work into my conversation, one that Hanson uses to describe the "skin" of the health-care system: *pachydermatous*. ■

John Shea

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When the University's first medical program opened in 1765, gross anatomy was a part of it. Even with today's "virtual curriculum" and other technical and educational advances, medical students continue to learn essential lessons in such courses. Taking gross anatomy is a rite of passage – and more.