

PENN Medicine

WINTER 2014

IN SEARCH OF THE FOUNDER VIRUS

A Doctor for the Nation Says:

Be Prepared

Helping Faculty ADVANCE

Samuel Crawford: Civil War Surgeon,
General, Author



A Coming Attraction

Construction is under way on the Henry A. Jordan, M '62, Medical Education Center, which will re-imagine and redefine 21st-century medical education at the Perelman School of Medicine. Located atop the Perelman Center for Advanced Medicine and connected to the Smilow Center for Translational Research and the Roberts Proton Therapy Center, it will be one of the few medical educational facilities in the nation to be fully integrated with research and clinical practice facilities.

“More than a collection of classrooms and study areas, the new Henry Jordan Center will play a prominent role in advancing innovation in every aspect of medicine,” 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.

The Jordan Center will have a flexible, adaptable, and state-of-the-art environment to support the medical school's small-group learning model. It will also strengthen the collaborative and team-based relationships that define medicine today. High-tech recording and simulcast technology will allow faculty members to more easily create online courses and lectures available to millions across the globe.

To note the construction's progress, Penn leaders and other well-wishers were invited to a ceremonial beam-signing.



Participating in the beam signing were: Ralph Muller, CEO of the University of Pennsylvania Health System; Gail Morrison, M.D., G.M.E. '76, senior vice dean for education; Amy Gutmann, Ph.D., Penn's president; and J. Larry Jameson.

Time for a Break?

Members of the construction team working on the Henry A. Jordan, M '62, Medical Education Center recreated "Lunch Atop a Skyscraper," a famous black-and-white photo taken in 1932 during construction of the RCA Building in NY.




TWO TO THE NTH
By Rabiya Tuma

Two of the world's leading HIV researchers have continued to make advances in the field since joining Penn Medicine in 2011. Beatrice Hahn has also increasingly turned her sights to the origins of malaria and simian immunodeficiency virus, and George Shaw has expanded his work on hepatitis C.


**NICOLE LURIE:
A DOCTOR FOR HER COUNTRY**
By Rita Rooney and John Shea

After years of experience in both primary care and public health, Nicole Lurie, M.D. '79, is now the highest-ranking federal official in charge of preparing the nation to face such health crises as earthquakes, hurricanes, terrorist attacks, and pandemic influenza.


**CAREER PREP PROGRAM
SHOWS GREAT RESULTS**
By Gregory Richter

For two hundred students in West Philadelphia, Penn Medicine's High School Pipeline Program has been a welcome means of focusing their ambitions and introducing them to careers they may not have considered otherwise.


**SAMUEL CRAWFORD:
FROM SURGEON TO SOLDIER**
By Jon Caraulis

From the shelling of Fort Sumter to the Confederate surrender at Appomattox, Samuel Crawford was a witness to history – and an active participant. Crawford, who graduated from Penn's medical school in 1850, was also an author of a heavily researched book about Fort Sumter and the origins of the war.

Departments

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A Man with a Mission


ADVANCE HAS THEIR BACKS
By Marshall A. Ledger

A program of Faculty Affairs and Development, ADVANCE orients junior faculty members – from their first months at the Perelman School of Medicine – toward flourishing and satisfying careers. It also enlists the assistance of more senior professors eager to help their colleagues.


**A DAY CAPTURED
IN PHOTOGRAPHS**

As part of a university-wide initiative on Tuesday, October 29, photographers turned their cameras on many different people and places, from early morning to night.


**SORRY SEEMS TO BE
THE HARDEST WORD**
By Jim deMaine

How can doctors deal with all the parties involved when there has been a medical mistake? A retired M.D. and active blogger has an answer.


**A HERO TO EVERYONE
BUT HIMSELF**
By John Shea

Diagnosed with amyotrophic lateral sclerosis at the age of 41, Scott A. Mackler, professor of medicine, refused to acquiesce to the disease. With the help of family, friends, and caretakers, he continued to come to the Penn campus and to pursue his research on addiction.

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Exploring Tobacco Use in the Digital Age

A \$20 million federal grant will create the University of Pennsylvania Tobacco Center of Regulatory Science (Penn TCORS). A first-of-its-kind research enterprise, the new center is designed to conduct studies to inform the regulation of tobacco products in order to protect public health. The grant, supported by the U.S. Food and Drug Administration and the National Institutes of Health, will fund research from 2013 to 2018.

The new center, led by Robert Hornik, Ph.D., and Caryn Lerman, Ph.D., includes faculty experts from the Annenberg School for Communication, the Perelman School of Medicine, and the Wharton School. The center has a thematic focus on tobacco-related messaging in the complex 21st-century communication environment, with projects extending from neuroscience to health policy. “Public communication about tobacco products has been transformed by the digital marketing revolution and the rapid diffusion of emerging social media,” said Hornik, the Wilbur Schramm Professor of Communication and Health Policy in the Annenberg School for Communication.

“Despite massive efforts to eradicate tobacco addiction – and some significant successes – tobacco dependence continues to be a major public health problem,” said Lerman, the Mary W. Calkins Professor in the Department of Psychiatry and in the Annenberg School for Communication and deputy director of Penn’s Abramson Cancer Center. “By marshalling the tremendous resources we have at Penn Medicine and Annenberg, we’re aiming to uncover new ways of countering the insidious effects of advertising and misinformation that induce people, especially the young, to adopt this lethal habit.”

The Penn TCORS will carry out several projects, including:

- A comprehensive analysis of the nature and effects of both traditional and

emerging media coverage of tobacco products on youth and young adults.

- Analyses of “belief echoes” – lingering public attitudes based on misinformation about tobacco products – and studies of novel theory-based corrective interventions.
- Analysis of the effects of cigarette packaging on smoking behavior as well as subsequent biological effects.
- Creation of the Tobacco Fact Check Core, in the style of Annenberg’s award-winning FactCheck.org, which uncovers fact from fiction and/or “spin” in political messages.

– Holly Auer

A Blood Test to Diagnose Concussion

A new blood biomarker correctly predicted which concussion victims went on to have white matter tract structural damage and persistent cognitive dysfunction following a mild traumatic brain injury

(mTBI). Researchers in the Perelman School of Medicine, with colleagues at Baylor College of Medicine, found that the blood levels of a protein called calpain-cleaved α II-spectrin N-terminal fragment (SNTF) were twice as high in a subset of patients following a traumatic injury. If validated in larger studies, this blood test could identify concussion patients at increased risk for persistent cognitive dysfunction or further brain damage and disability if they returned to sports or military activities.

More than 1.5 million children and adults suffer concussions each year in the United States, and hundreds of thousands of military personnel endure these mild traumatic brain injuries worldwide. Current tests cannot determine the extent of the injury or whether the injured person will be among the 15 to 30 percent who experience significant, persistent cognitive deficits.

“New tests that are fast, simple, and reliable are badly needed to predict who may experience long-term effects from



Shown here, from left to right, are Leonard and Madlyn Abramson, benefactors of the Center; Bert Vogelstein; Chi Van Dang, M.D., Ph.D., current director of the Center; and John H. Glick, M.D., his predecessor.

Photo by Daniel Burke

The Cancer Center’s Milestone

On December 2, the Abramson Cancer Center of the University of Pennsylvania celebrated the 40th anniversary of its designation as a Comprehensive Cancer Center by the National Cancer Institute. In addition to noting its significant achievements

in cancer research, patient care, and education, the center awarded Bert Vogelstein, M.D., a professor of oncology and pathology at Johns Hopkins and a pioneer in cancer genomics, with the inaugural Abramson Award.

concussions, and as new treatments are developed in the future, to identify who should be eligible for clinical trials or early interventions,” said lead author Robert Siman, Ph.D., research professor of neurosurgery at Penn. “Measuring the blood levels of SNTF on the day of a brain injury may help to identify the subset of concussed patients who are at risk of persistent disability.”

In a study published in November in *Frontiers in Neurology*, Penn and Baylor researchers evaluated blood samples and diffusion tensor images from a subgroup of 38 participants in a larger study of mTBI. 17 had sustained a head injury caused by blunt trauma, acceleration, or deceleration forces, 13 had an orthopaedic injury, and 8 were healthy, uninjured, demographically matched controls.

In tests over three months, results within the mTBI group varied considerably: some patients performed as well as the healthy controls throughout, while others showed impairment initially that resolved by three months, and a third group had cognitive dysfunction through three months. The nine patients who had abnormally high levels of SNTF (7 mTBI and 2 orthopaedic patients) also had significant white matter damage apparent in radiological imaging.

“The blood test identified SNTF in some of the orthopaedic injury patients as well, suggesting that these injuries could also lead to abnormalities in the brain, such as a concussion, that may have been overlooked with existing tests,” said Douglas Smith, M.D., director of the Penn Center for Brain Injury and Repair and professor of neurosurgery. “SNTF as a marker is consistent with our earlier research showing that calcium is dumped into neurons following a traumatic brain injury, as SNTF is a marker for neurodegeneration driven by calcium overload.”

The blood test given on the day of the mild traumatic brain injury showed 100



Welcome to UPHS: Chester County Hospital

On September 1, The Chester County Hospital and Health System (TCCHHS) became the newest addition to the University of Pennsylvania Health System. Chester County includes a 245-bed hospital complex in West Chester and satellite locations in Exton, West Goshen, New Garden, Jennersville, and Kennett Square. With this partnership, said Ralph W. Muller, CEO of Penn’s Health System, “we hope to further expand the depth and breadth of quality health-care services that Penn Medicine provides to the Greater Southeastern Pennsylvania region.”

TCCHHS currently offers a variety of inpatient and outpatient medical/surgical services, including interventional cardiovascular services, open-heart surgery, oncology, radiation oncology, and comprehensive maternal/infant health services. The

percent sensitivity to predict concussions leading to persisting cognitive problems, and 75 percent specificity to correctly rule out those without functionally harmful concussions.

– Kim Menard

Probing the Biology of Asthma

The Perelman School Medicine has received a \$12 million grant over five years from the National Heart, Lung, and Blood

health system also provides home health and hospice care; skilled nursing care; occupational and employee health care; professional and technical education; outpatient laboratory; radiology and physical therapy services; prenatal care and gynecological care centers for the underserved; and cardiopulmonary rehabilitation.

According to Michael J. Duncan, president and CEO of The Chester County Hospital and Health System, “We will now blend the best of Chester County Hospital with the remarkable achievements of Penn Medicine to create one of the leading hospitals in the Philadelphia suburbs.”

The new affiliation will expand current strategic programs between Penn Medicine and Chester County, such as membership in the Penn Cancer Network, and foster additional collaboration to identify new programs and technology that can be brought to the community.

Institute to head a multi-institutional study looking at the biology of asthma and other airway diseases. The goal of the research is to find new targets in the smooth muscles of the airway that respond to drugs, which could lead to more effective bronchodilators that prevent or reverse lung constriction for longer periods of time.

Current long-term therapies for asthma keep the airways open for 12 hours to prevent attacks but at the same time desensitize a key cell surface receptor known

as the G-protein coupled receptor (GPCR), limiting their efficacy. The researchers will devise new therapeutics that sustain such receptors and increase efficacy to 96 hours or more.

“Our approach has been to investigate novel targets and molecules with the hopes of finding bronchodilators that won’t lose activity and remain effective in severe asthma and other airway diseases, like COPD,” said Reynold A. Panettieri Jr., M.D. ’83, G.M.E. ’90, principal investigator for the NIH grant. He is the Robert L. Mayock and David A.



Cooper Professor of Medicine and director of the Asthma Section in the Division of Pulmonary, Critical Care and Allergy.

Today, asthma costs the U.S. about \$56 billion in medical costs, lost work days, and even early deaths – some of which are caused by current medications. COPD, or chronic obstructive pulmonary disease, costs the U.S. almost \$30 billion, not including lost productivity.

Past studies by researchers in the Airways Biology Initiative at Penn have shown that regulators of G-protein coupled signaling control the contractile responses of smooth muscle and promote smooth muscle cell growth – two findings that could serve as the basis for therapeutic tar-

gets in obstructive lung diseases. The new research endeavor will elaborate on these discoveries.

Other institutions involved in the research include Thomas Jefferson University, the University of Southern Florida, Johns Hopkins University, and the University of Arkansas.

– Steve Graff

Virology Group Receives \$10.3 Million in NIH Funding

The National Cancer Institute has awarded \$10.3 million over five years to a group of Penn researchers to investigate the early events of Kaposi’s sarcoma-associated herpesvirus infection and its implications for developing therapeutics in treating associated cancers. Erle S. Robertson, Ph.D., professor of microbiology at the Perelman School of Medicine, heads the Penn team.

Kaposi’s sarcoma-associated herpesvirus (KSHV) is associated with a number of human cancers, in particular AIDS-associated Kaposi sarcoma and pleural effusion lymphomas. KSHV was identified 15 years ago and has been tackled mostly on the level of the individual investigator. This award brings together three groups of investigators, including Paul Lieberman, Ph.D. (The Wistar Institute) and Yan Yuan, Ph.D. (Penn Dental School), within the Penn community to address the mechanism of KSHV-mediated oncogenesis.

The overall goal is to investigate the mechanism of viral control by encoded antigens during the early stages of infection of primary B cells. The fundamental cellular processes targeted during these early stages will provide new information on how the virus establishes latency.

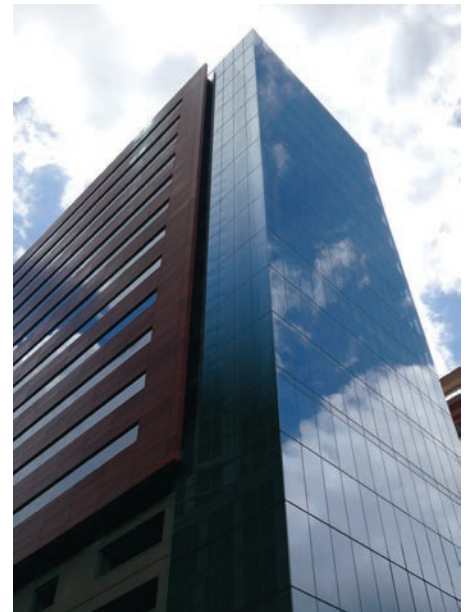
The success of these projects will allow for a more comprehensive view of KSHV infection and pathogenesis and provide new clues for developing strategies to prevent and treat KSHV-associated cancers. In addition, new information on KSHV biology

will provide insights into the mechanism of oncogenesis associated with other viruses, including Epstein Barr virus.

– Karen Kreeger

Washington Square Site Opens

Penn Medicine Washington Square, which officially opened in October, will serve as the major hub of outpatient care for Pennsylvania Hospital. The 153,000 square foot facility features leading-edge telecommunication and clinical information systems, which provide patients with the most advanced level of collaborative and interdisciplinary care. According to R. Michael Buckley, M.D., G.M.E. ’77, executive director of Pennsylvania Hospital, the new building “is part of the Hospital’s \$61 million facilities master plan which includes the expansion of private rooms



for our patients” and will give “our providers the environment and tools they need to deliver that care.”

More than 100 providers from across a wide range of services – including cardiology, concierge medicine, otorhinolaryngology, primary care, surgery and women’s health – are now in one location,

along with patient pre-admission testing and phlebotomy services. The 12-floor facility is also built atop an existing parking garage, offering added convenience for patients.

The building seeks to create a better experience for patients. For example, all of the waiting rooms are on the north side of the building, where a glass exterior allows for sunlight. There are now more consultation rooms available for physicians to talk to patients and their families.

“It’s a very patient-friendly, environmentally friendly, and tech-friendly environment, and a great space for providers and patients and families,” said Daniel M. Feinberg, M.D., chief medical officer at Pennsylvania Hospital and associate professor of clinical neurology.

The new outpatient building is also a “green” urban redevelopment site. The building features energy-efficient heating and cooling systems; increased wireless access; paper, metal, and plastics recycling; and storm water retention through a “green roof” terrace.

— Olivia Fermano

Transitions

Jack Ende, M.D., was named assistant vice president for the University of Pennsylvania Health System and assistant dean for advanced medical practice in the Perelman School of Medicine. He also serves as executive medical director for Patient Signature Programs and will maintain his existing faculty appointment within the Department of Medicine at Penn Presbyterian Medical Center. Ende will continue to practice and teach at PPMC. For 16 years, he served as chief of medicine there, overseeing its expansion and transition to a department of the Clinical Practices of the University of Pennsylvania known for outstanding inpatient and outpatient care and excellence in education.

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Newly Named to the Institute of Medicine

This fall, the Institute of Medicine elected seven current professors in the Perelman School of Medicine. The new members bring Penn Medicine’s total to 68 and the Institute’s total active membership to 1,753. Established in 1970 by the National Academy of Sciences, the Institute is recognized as a national resource for independent, scientifically informed analysis and recommendations on health issues.

The new Penn IOM members are:

Charles L. Bosk, Ph.D., professor of anesthesiology and critical care, is also professor of sociology in the School of Arts and Sciences and senior fellow in the Leonard Davis Institute of Health Economics. His first book, *Forgive and Remember: Managing Medical Failure*, published in 1979, is often required reading for surgical residents. His other publications include *All God’s Mistakes: Genetics Counseling in a Pediatric Hospital*. After receiving a Robert Wood Johnson Foundation Investigator Award for his project “Restarting a Stalled Policy Revolution: Patient Safety, Systems Error, and Professional Responsibility,” Bosk has become an authoritative voice in academic and policy debates about professionalism and patient safety. His influence has been



acknowledged through appointments to the Hastings Center Panel on the Ethics of Patient Safety and other committees.

Phyllis A. Dennery, M.D., is professor of pediatrics and director of Newborn Services at the Hospital of the University of Pennsylvania, as well as chief of the Division of Neonatology and Newborn Services at The Children’s Hospital of Philadelphia. She holds the Werner and



Gertrude Henle Endowed Chair in Pediatrics. She is also president of the International Pediatric Research Foundation. Her research is focused on oxidative stress-mediated neonatal lung gene regulation and on the biology of lung injury and repair. Her clinical interests are in neonatal jaundice, bronchopulmonary dysplasia, and the long-term consequences of prematurity. She is associate editor for *Free Radicals in Biology and Medicine* and for *Pediatrics*. Her many awards include the Andrew Mellon Fellowship and the Alfred Stengel Health System Champion Award from the Perelman School of Medicine. In 2010, she was appointed to the U.S. Secretary of Health and Human Services Advisory Committee on Infant Mortality.

Jeffrey A. Drebin, M.D., Ph.D., is chair of the Department of Surgery and the John Rhea Barton Professor of Surgery. His research has contributed significantly to the understanding of the genetic origins of cancer. His classic work with

monoclonal antibodies directed against the HER2/neu protein provided the scientific foundation for the evolution of targeted therapeutics for cancer and led to the development of the first generation of targeted monoclonal antibody drugs for the treatment of breast cancer. He is currently the co-principal investigator on a \$22 million dollar clinical and translational “dream team” award from the Stand Up to Cancer Foundation for innovative studies in pancreas cancer. Drebin serves on the Board of Scientific Advisors of the National Cancer Institute, is vice presi-



dent of the Society of Surgical Oncology, and is president-elect of the Philadelphia Academy of Surgery.

Gideon Dreyfuss, M.Sc., Ph.D., is the Isaac Norris Professor of Biochemistry & Biophysics and a Howard Hughes Medical Institute Investigator. His research defined the principal nuclear RNA-binding proteins and their roles in mRNA biogenesis, transport, translation, and disease. The laboratory also discovered the SMN (survival of motor neurons) complex and its unexpected function in assembly of snRNPs (non-coding small nuclear RNAs-protein particles), the subunits of the cell’s mRNA splicing machine. Insights from this work advanced understanding of spinal muscular atrophy and prospects of its therapy. The Dreyfuss laboratory is also pursuing its recent surprising discovery of a fundamental



new step in gene expression – protection of nascent gene transcripts from premature termination and its potential role in cancer, cell proliferation, and activation of immune cells and neurons. Dreyfuss is a member of the National Academy of Sciences and a fellow of the American Academy of Arts and Sciences and of the American Association for the Advancement of Science.

Karen Glanz, Ph.D., M.P.H., is a Penn Integrates Knowledge (PIK) Professor and the George A. Weiss University Professor. She is also professor of epidemiology in the School of Medicine and professor of nursing in the School of Nursing and directs the Center for Health Behavior Research. She is also a senior fellow in the Leonard Davis Institute. Glanz’s research bridges public health and social science and focuses on nutrition and obesity, the prevention of skin cancer, tobacco control, and cancer



screening. She has tested and disseminated effective multi-level cancer prevention strategies and refined measurement and methods. Glanz has influenced generations of scholars and students through her edited textbook, *Health Behavior and Health Education: Theory, Research and Practice*. She is a member of the federally appointed U.S. Task Force on Community Preventive Services.

Joan M. O'Brien, M.D., is the George E. de Schweinitz and William F. Norris Professor of Ophthalmology, chair of the Department of Ophthalmology, and director of the Scheie Eye Institute. She specializes in the treatment of ocular tumors, including retinoblastoma, ocular melanoma,



conjunctival malignancies, and ocular metastases. Her research focuses on the genetics of eye disease. O'Brien’s publications have recently appeared in *Nature*, *The New England Journal of Medicine*, and other journals. Her honors include a Physician-Scientist Award from Research to Prevent Blindness and a Senior Achievement Award from the American Academy of Ophthalmology. O'Brien also has a long history of research support from the National Cancer Institute for clinical trials and the National Eye Institute for basic science investigations.

George M. Shaw, M.D., Ph.D., is professor of medicine and of microbiology.

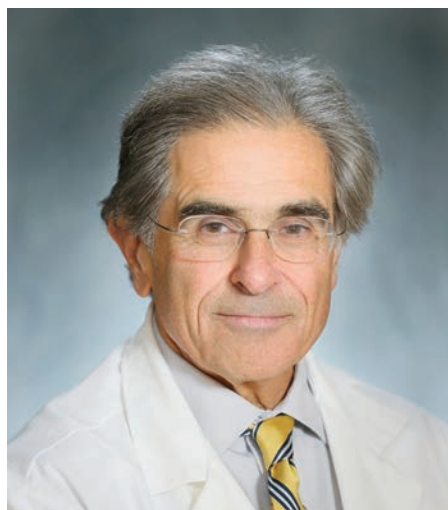
His investigative work focuses on the transmission and immunopathogenesis of HIV-1 and hepatitis C virus (HCV), which infect more than 200 million individuals worldwide. Shaw is recognized for developing the first molecular clones of HIV-1, which led to the development of antibody and nucleic acid tests to protect the blood supply and diagnose and monitor HIV-1 infections. He also discovered the rapid



dynamics of HIV-1 replication in chronically infected humans, thus providing a scientific rationale for long-term suppressive antiretroviral therapy as a fundamental treatment strategy. Recently, he developed a novel experimental approach for identifying virus genomes that are actually responsible for HIV-1 and HCV transmission, a finding that has been instrumental in refocusing current HIV/AIDS vaccine discovery efforts. A former investigator of the Howard Hughes Medical Institute, Shaw is a member of the American Society for Clinical Investigation and the Association of American Physicians. (See pp. 10-13.)

Also elected was **Katrina Armstrong, M.D., M.S.C.E. '98**, former chief of General Internal Medicine for Penn Medicine, who joined Massachusetts General Hospital as physician-in-chief of its Department of Medicine in April.

– Karen Kreeger



In his new roles, Ende will work closely with Penn Medicine leaders to provide clinical guidance and leadership to increase membership enrollment for specific programs and expand relevant international patient care initiatives.

Ende joined Penn as an associate professor of medicine in 1989. In 2011 he was appointed the inaugural Schaeffer Professor of Medicine, making him the first faculty member at PPMC to hold an endowed chair. He is a member of several professional and honorary societies.

Harold I. Feldman, M.D., M.S.C.E., was appointed chair of the Department of Biostatistics and Epidemiology and director of the Center for Clinical Epidemiology and Biostatistics (CCEB). A professor of medicine and of epidemiology, he is an international leader in the epidemiology of kidney disease. He leads the Chronic Renal Insufficiency Cohort Study of the National Institutes of Health, which has made numerous findings with great promise to advance new therapies to reduce morbidity in that population.

Feldman came to Penn in 1985 as an Andrew W. Mellon Fellow in clinical epidemiology and a Fellow in the Renal Electrolyte Section. Named an assistant professor of medicine in that division in 1988, he advanced to professor in 2004.

Since 1993, he has been a senior scholar at the CCEB. In addition, Feldman served as medical director of HUP's Dialysis Unit and director of CCEB's Clinical Epidemiology Unit.

Feldman is a fellow of three national societies: the American College of Physicians; the American Society of Nephrology; and the American College of Epidemiology, on whose board of directors he currently serves. Honored as an Established Investigator of the American Heart Association, he has received Penn Medicine's Samuel Martin Health Evaluation Sciences Award and been elected to the American Society of Clinical Investigation. Feldman has also been honored for his teaching.

At last count, he has more than 150 research publications in peer-reviewed



journals. A frequent reviewer for professional journals, he has been deputy editor of the *Clinical Journal of the American Society of Nephrology* and associate editor and consulting editor of *The Journal of Clinical Investigation*.

J. Kevin Foskett, Ph.D., the Isaac Ott Professor of Physiology, was named chair of the Department of Physiology. Foskett, who was vice chairman of the department, is recognized as a productive scientist whose laboratory has significantly advanced the understanding of the mechanisms of ion permeation across cell



membranes and intracellular signaling. He has been honored by the National Institutes of Health with one of the highly prized MERIT (Method to Extend Research in Time) Awards, established to give creative scientists long-term support. In addition, he is an accomplished teacher who has been recognized for his ability to explain complicated material to his students.

Earlier this year, Foskett and colleagues from both Penn and elsewhere described in *Nature* how cells transmit taste information to the brain for three of the five primary taste types. They determined that ATP – the body’s main source of fuel – is released as the neurotransmitter from sweet, bitter, and umami (or savory) taste bud cells.

Foskett was recruited to Penn Medicine in 1995. From 1988 to 1995, he was scientist and then senior scientist in the Division of Cell Biology, Research Institute, at Toronto’s Hospital for Sick Children.

A former president of the Society of General Physiologists, Foskett has been a reviewer for both granting agencies (such as the NIH and the National Science Foundation) and professional journals. He has also been a member of the Board of Scientific Councilors of the National Heart, Lung, and Blood Institute. Currently, he is on the editorial boards of *Physiological Reviews* and *Journal of General*

Physiology. He was recently elected to the Institute of Medicine.

D. Gary Gilliland, M.D., Ph.D., has joined Penn Medicine as the inaugural vice dean and vice president for precision medicine. An internationally known oncology investigator, Gilliland will work with key partners in cancer, heart and vascular medicine, neurosciences, genetics, and pathology to help make Penn Medicine a national leader in precision medicine. Whether called precision medicine, personalized medicine, or individualized medicine, this extremely promising approach – made possible by dramatic advances in technology, molecular biology, and genomics – enables the targeting of the molecular underpinnings of each patient’s specific disease.

Gilliland joins Penn Medicine from Merck, where he was recruited in 2009 as senior vice president of Merck Research Laboratories and Oncology Franchise Head. In addition, he managed all pre-



clinical and clinical oncology licensing activities, which will enable him to help Penn Medicine to develop additional collaborative relationships with industry. Before joining Merck, Gilliland served as professor of medicine at Harvard Medical School and professor of stem cell and regenerative biology at Harvard University.

He was also an Investigator of the Howard Hughes Medical Institute and director of the Cancer Stem Program of the Harvard Stem Cell Institute. As an investigator studying hematologic malignancies, Gilliland made seminal discoveries that have contributed to our understanding of the genetic basis of leukemias and other cancers that affect the blood and bone marrow. His work has earned him numerous honors, including election to the American Society for Clinical Investigation and the American Association of Physicians.



Michael S. Parmacek, M.D., the Herbert C. Rorer Professor of Medical Sciences, is serving as interim chair of the Department of Medicine, following the departure of Richard Shannon, M.D. Parmacek came to Penn as chief of the Division of Cardiovascular Medicine in 1998, following successful roles at the University of Michigan and the University of Chicago. He is also the founding director of the Penn Cardiovascular Institute. A nationally recognized expert in cardiovascular biology and medicine, he has distinguished himself at Penn with significant research advances. In addition, he has been named to several important clinical and administrative leadership roles, including the advisory council of the National Heart,

Blood, and Lung Institute. Parmacek has received the Established Investigator Award of the American Heart Association and was elected to the American Society of Clinical Investigation.

John H. Glick, M.D., is overseeing the national search for the next chair of Medicine.

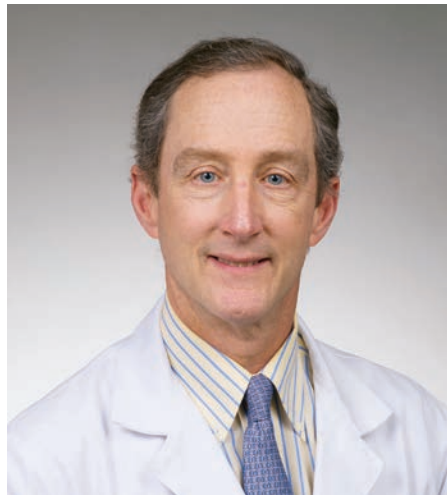
On November 1, **Gregory Tino, M.D., G.M.E. '89**, succeeded Jack Ende, M.D., as chief of Medicine at Penn Presbyterian. Since coming to Penn in 1986, Tino has held various clinical and administrative positions in the Pulmonary, Allergy, &



Critical Care Division at HUP. He became an attending physician at Penn Presbyterian in 1997. Tino is a nationally recognized expert in pulmonary diseases and critical care medicine and has won a number of awards, including being named in the 2013 edition of *Philadelphia Magazine's* "Top Doctors." He is the chair-elect of the Assembly on Clinical Programs of the American Thoracic Society and a fellow of the American College of Chest Physicians and the American College of Physicians.

Farewells

Richard P. Shannon, M.D., formerly the Frank Wister Thomas Professor and Chair of the Department of Medicine, has joined the University of Virginia as executive



vice president for health affairs. Shannon joined Penn Medicine in 2006 after a successful tenure as chair of medicine at Allegheny General Hospital. During that time, he helped the Pittsburgh hospital gain national recognition for its improved quality of patient care, particularly in reducing hospital-acquired infections substantially and improving hospital operations, saving both lives and money. Shannon continued his successful campaign to improve patient safety at Penn Medicine.

A nationally recognized cardiologist with special expertise in the area of heart failure, Shannon has been the principal investigator on NIH grants and has published extensively in professional journals. He is a member of the board of directors of the American Board of Internal Medicine and has been a member of the Pennsylvania Governor's Special Panel on Patient Safety.

Brian L. Strom, M.D., M.P.H., who had been the George S. Pepper Professor of Public Health and Preventive Medicine and executive vice dean for institutional affairs, has joined Rutgers University. He is the inaugural chancellor of Rutgers Biomedical and Health Sciences. The founding director of Penn's Center for Clinical Epidemiology and Biostatistics, Strom was also the founding chair of the Department of Biostatistics and Epidemiology and had appointments in the depart-

ments of Medicine and Pharmacology. His other appointments since arriving at Penn in 1980 included associate vice dean of the School of Medicine and associate vice president for strategic integration for the Health System.

Strom is the author of the major textbook on pharmacoepidemiology, now in its fifth edition, and served on the Drug Safety and Risk Management Advisory Committee for the U.S. Food and Drug Administration. He has been a member of the Board of Regents of the American College of Physicians, the Board of Directors of the American Society for Clinical



Epidemiology and Therapeutics, and the Board of Directors of the American College of Epidemiology. In addition, he is an elected member of the Institute of Medicine.

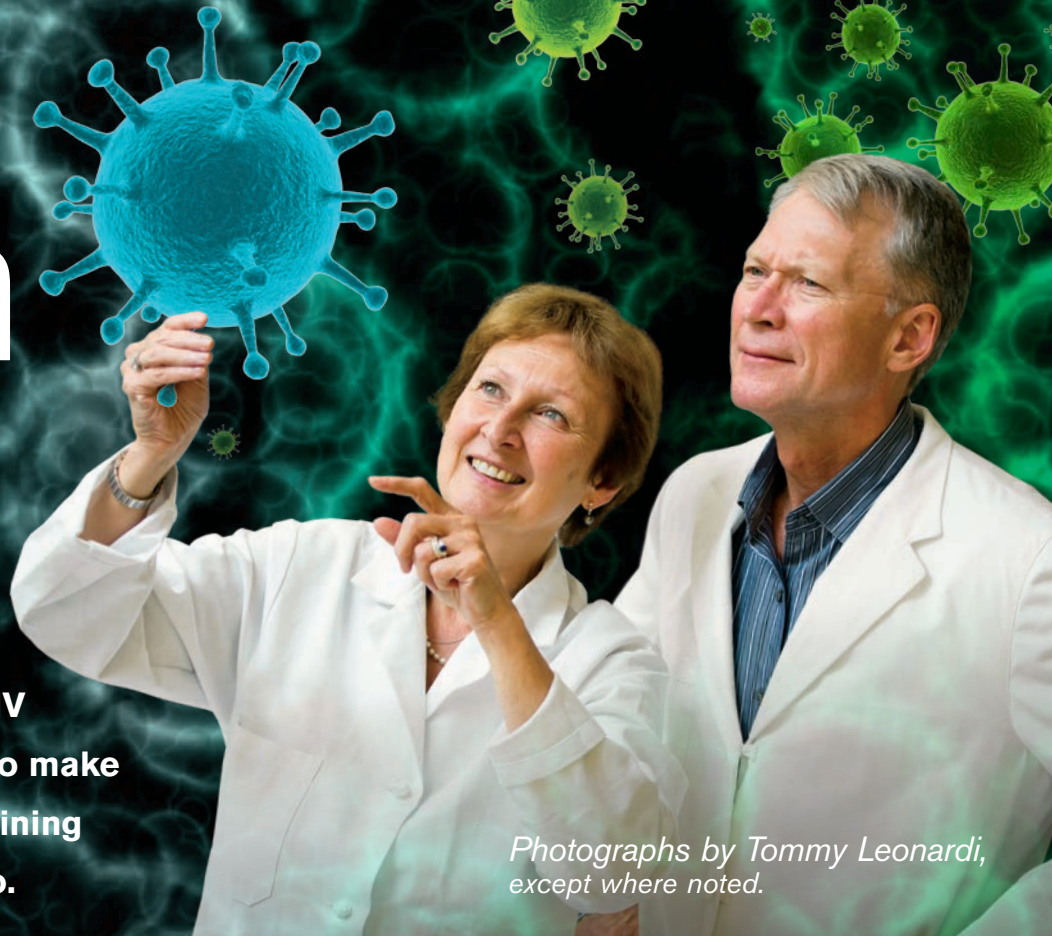
Thanks for the Honors

At the 45th annual Peppercorn Awards ceremony in December, *Penn Medicine* received the Ladle in the magazine category. The awards are sponsored by the Philadelphia Chapter of the Public Relations Society of America.

"On the Map," Martha Ledger's article on the work of Charles Branas, Ph.D. (Spring 2013), received an Honorable Mention in the 2014 awards program of the Association of American Medical Colleges.

Two to the Nth

By Rabiya Tuma, Ph.D.



Two of the world's leading HIV researchers have continued to make advances in the field since joining Penn Medicine two years ago.

Photographs by Tommy Leonardi, except where noted.

One plus one is undoubtedly two.

Yet in the case of Beatrice H. Hahn and George M. Shaw, it can seem more like three or four. The two met as postdoctoral fellows in Robert Gallo's lab at the National Institutes of Health when they teamed up to isolate and sequence the first HIV clones. In the 30 years since then, they have contributed to nearly every aspect of HIV research – from demonstrating that the virus continuously replicates and mutates in untreated patients to proving that the virus originated in chimpanzees. And they show no signs of slowing their pace.

Hahn and Shaw joined Penn Medicine in 2011 as professors in the Department of Medicine with secondary appointments in the Department of Microbiology. Since

then, they have described molecular traits that HIV needs to cross a mucosal boundary and to start an infection in humans, insights that will likely guide the development of vaccines. Hahn has also increasingly turned her sights to the origins of malaria and simian immunodeficiency virus, and Shaw has expanded his work on hepatitis C.

In addition to the typical ingredients for success, such as hard work and the good fortune of being in the right place at the right time, Hahn and Shaw emphasize that many of their achievements come from their valuable partnerships – their own, as well as those with other colleagues. For example, the work on viral traits necessary for infection, which

was published in the *Proceedings of the National Academy of Sciences*, came from a team that included Robert A. Doms, M.D., Ph.D., from the Department of Pathology and Laboratory Medicine at the Perelman School of Medicine, as well as Los Alamos National Laboratory colleagues Elena Giorgi, James Theiler, and Bette Korber.

“Every time you participate in a partnership, it means you gain something and it goes both ways,” Hahn says, talking about her personal and professional partnership with Shaw, whom she married in 1988. “In any collaboration like that, one person is better at doing this and the other is better at doing that, but the secret to our success is that we complement each other. We can bounce problems,

questions off each other, and there is meaningful input from the other partner. It is more than just the sum of two.”

The Beginning of an Epidemic

Hahn joined the Gallo lab in 1982 after finishing her medical degree at the University of Munich Medical School in Germany. She had initially intended to become a cardiologist, but with a dearth of positions available in her home country, she opted to continue working in molecular virology, an area she had explored during her thesis work. Gallo had recently identified retroviruses that cause leukemia in humans (HTLV I and HTLV II). At first, Hahn worked on that project, as did Shaw when he joined the lab a year later, having just earned his M.D. and Ph.D. degrees at The Ohio State University and completed a residency in internal medicine at the University of Michigan.

By then, however, the AIDS epidemic was in full swing, and Gallo’s team quickly shifted its focus from the leukemia viruses to the unknown virus that was devastating gay communities across the country. In 1983, Luc Montagnier and colleagues in France had published electron micrographs and an early biochemical characterization of the new agent isolated from patient samples. (That work would later earn him a Nobel Prize.) But it was Gallo’s group, according to Shaw, that provided clear evidence in 1984 that the newly identified virus caused AIDS. The virus was first called HTLV III because of its distant similarity to the leukemia viruses, but it later would be known as human immunodeficiency virus (HIV).

As one part of Gallo’s team worked to link the virus and the clinical disease, Hahn and Shaw worked feverishly to molecularly clone and characterize the newly discovered virus. They published the first HIV sequence papers in *Science* and *Nature* in 1984 and started a pattern of shared publications that has continued



George Shaw confers with Hui Li, M.D., Research Assistant Professor of Medicine.

throughout their careers. “Bea’s paper in *Nature* came out first. It was the very first publication describing a near full-length clone of the AIDS virus,” Shaw says. “I applied a different cloning strategy than Bea, which allowed me to clone the complete viral genome.”

Cloning the complete viral genome was a critical step in the battle against AIDS. As Shaw puts it, “Once you have the virus in a reproducible DNA form, you can do all sorts of things.” In fact, investigators quickly turned the clones isolated by Hahn and Shaw into diagnostic tests for viral-RNA and viral antibodies in the blood. The tests are used not only to diagnose HIV infection but also to monitor clinical responses in patients during treatment.

The Challenge of Viral Replication

Shortly after leaving Gallo’s laboratory to start their own research groups at the University of Alabama at Birmingham, Hahn and Shaw published the first description of genetic variation in HIV. They found that within an individual patient, the virus replicates and mutates so quickly that the immune system cannot keep up. “We now take the extreme variability of HIV for granted. It is one of the hallmarks

of the virus,” Shaw says. “It is, for example, one of the things that lead to rapid drug resistance, and also one of the major obstacles to vaccine development. This paper, also published in *Nature*, presaged the problems we’ve seen in drug resistance and vaccine development.”

In 1995, Shaw notes, the field had a game-changing moment. He and Hahn, and others, found that treating chronically infected patients with anti-retroviral drugs caused their viral load to drop precipitously within days or even hours. The observation proved that continuous viral replication is required to maintain a constant level of virus in the patient’s bloodstream. In other words, the steady-state viral load in untreated patients was not the result of a given population of virus that stayed around for a long time, but rather continuous cycles of viral replication, T cell infection, and T cell killing. “Looking at it that way suggested that the pathogenesis of AIDS was not one of simmering embers, but more like a campfire where you keep throwing on more fuel – where the fuel you’re throwing on is more and more of the patient’s T cells,” says Shaw.

As a corollary to this observation, researchers found that when a drug is narrowly targeted against a single viral en-



Recognition in the Field

When Beatrice H. Hahn, M.D., arrived at Penn Medicine, she was

- already a Fellow of the American Academy of Microbiology and a member of the Institute of Medicine.
- named one of “The 50 Most Important Women in Science” by *Discovery* in 2002.
- elected last year to the National Academy of Sciences.

At the University of Alabama at Birmingham, George M. Shaw, M.D., Ph.D.,

- served as director of the Division of Hematology/Oncology and was Senior Scientist at the University’s Center for AIDS Research and Comprehensive Cancer Center.
- A Fellow of the American Academy of Microbiology and the Association of American Physicians, Shaw is a former Investigator of the Howard Hughes Medical Institute.
- In October, he was elected to the Institute of Medicine (see pp. 6-7).

zyme, the virus population adapts quickly and the patient’s viral load shoots back up to pre-treatment levels in a relatively short time. Such resistance results directly from the genetic diversity and rapid viral replication that are characteristic of HIV.

In fact, that same genetic diversity and high rate of mutation are what allows the virus to escape the patients’ natural immune defenses. As soon as cytotoxic T cells, which have evolved to kill viruses or virally infected cells, recognize and attack one genetic strain of the virus, another strain arises and takes over the infection. Similarly, Shaw and Hahn and others have found that the same things happen when the immune system produces antibodies that neutralize the virus. The viral population quickly mutates and changes its proteins so that the antibody no longer recognizes its target on the viral surface.

Since then, clinicians and investigators have found ways to stave off the rapid evolution of the virus’s drug resistance by treating patients with a cocktail of anti-retroviral drugs. But they haven’t found a solution to the virus’s ability to evade the immune system. Just as the viral population can evade the immune cells and antibodies in most patients, it also seems to be diverse enough to escape all of the experimental vaccines developed thus far.

Hahn and Shaw are now part of a large group of researchers – each of whom brings a particular expertise to the collaboration – working to identify new vaccine targets. The group, based at Duke University, is part of the NIH-sponsored Center for HIV/AIDS Vaccine Immunology and Immunogen Discovery (CHAVI-ID).

Working Toward Vaccines

One large part of Hahn and Shaw’s work in recent years, including their time since arriving at Penn, has been to develop methods to identify and characterize what is called a transmitted founder virus. Transmitted founder viruses, also known as TF

viruses, are those specific viruses from among a genetically heterogeneous swarm that are actually transmitted from one individual to the next and that lead to a productive clinical infection. Although no one can isolate those viruses directly because infections are undetectable for the first one to two weeks after virus exposure. Shaw and Hahn together with mathematical modelers at Los Alamos National Laboratories developed a novel experimental method to infer the exact genetic sequence of TF viruses from their evolving progeny viruses. They do this by isolating and sequencing numerous viral sequences from an individual patient in the first few weeks of clinical infection and working backwards in time by genetically analyzing mutations in the virus population until they identify a common strain that represents the founder virus.

By using that technique in numerous patients, they can now infer what molecular and genetic traits are necessary and sufficient to allow a virus to cross a mucosal barrier during sex or other exposure and establish an active infection. But this same technique can look in the other direction as well, to the future, as the patient develops an active immune response against the virus. “We now have people who have been followed five years into their persistent infection, and so we look at the changes that occur in the viruses over time and correlate them with immune responses that develop over time,” Hahn explains. That, the hypothesis goes, may point out what immune responses are necessary to prevent infection in the first place or to help control it once an infection has been established. If they can translate those observations into vaccine candidates, they may be able to come up with more effective vaccines.

Not all of the work of Hahn and Shaw is equally shared. Shaw describes it as living in an overlapping Venn diagram in which the degree of overlap is more or less at different times. Shaw, for example, has always had a more translational focus to his work and tends to stick more to the immunopathogenesis of human retroviruses, whereas Hahn’s work tends to be more molecular and extends into simian immunodeficiency virus (SIV) and their evolutionary origins in non-human primates.

Recently, Shaw has adapted the transmitted founder virus concept to hepatitis C virus (HCV). He notes that whereas 30 million people are infected with HIV worldwide, six times that number are infected with HCV. New drugs that are in the final phases of clinical development will likely cure many individuals with HCV, according to Shaw, but only those who can afford the drugs and have access to them. For those who can’t afford them – and the virus disproportionately affects those in less-well-off regions of the globe,

so that could be a majority of the infected individuals – a vaccine remains the best and least expensive option for controlling the virus.

As Shaw explains, there are numerous similarities between HIV and HCV. One notable similarity is a high variability in genetic sequences. Therefore, using the transmitted founder virus concept with HCV could help direct vaccine development by highlighting traits necessary for the virus to successfully launch an infection and deciphering those elements of the host immune system that are protective.

Simian Origins

Meanwhile, much of Hahn's work in recent years has focused on the evolutionary origins of HIV and, most recently,

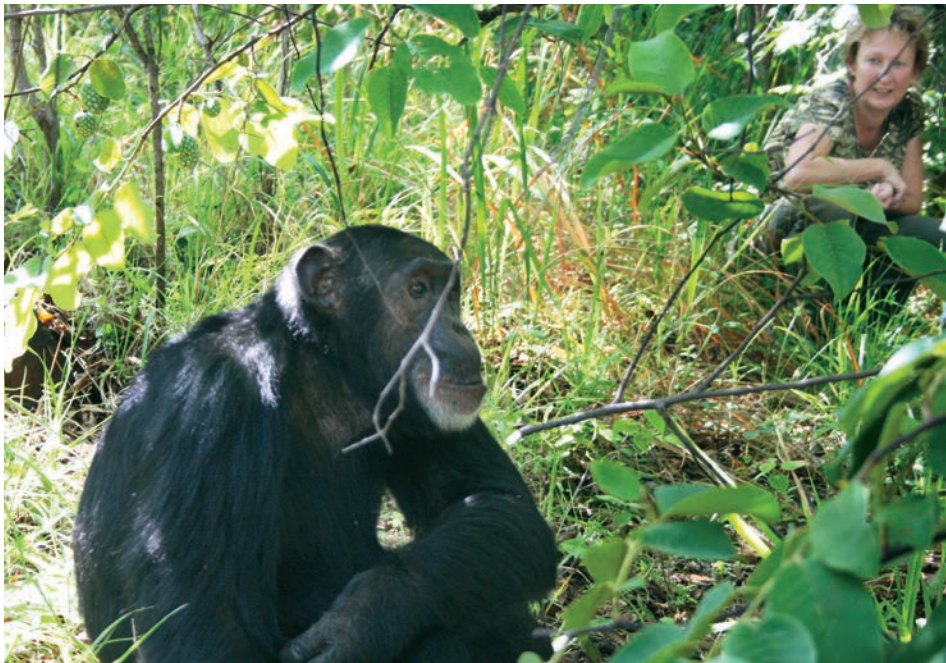
highly related to HIV – now called simian immunodeficiency virus or SIV – in this animal and three other captive chimps. That, she says, was the first evidence that HIV had jumped from chimps to humans. Her study was published in *Nature* in 1999, but it wasn't sufficient to convince everyone because the virus had not yet been detected in wild-living apes.

Her next step was to initiate a collaboration with primatologists working in the wild areas of Africa. While the field biologists collected urine and fecal samples literally from the floor of the jungle, Hahn's team developed techniques that allowed them to isolate viral DNA from those samples. Seven years later, after analyzing thousands of specimens from over much of sub-Saharan Africa, her

human malaria, into primate behavioral genetics, and into the broad field of wildlife conservation. In one project, her team used the 8,000 fecal samples from wild apes in the researchers' freezer to demonstrate that malaria, like HIV, originated in wild apes. Hahn's discovery led to one of the more unexpected opening lines in *The New York Times* in 2010: "It has taken 10 years for Dr. Beatrice H. Hahn to build the world's most comprehensive treasury of great ape dung samples." Each of these efforts, she says, sheds a little more light on what is necessary for a zoonotic infectious agent to jump successfully from non-human primates to humans. "Many human infections come from animals, but not all pathogens jump from animals to humans," she says. "So understanding what would be a zoonotic risk for humans is of importance. If the adaptive hurdles are too high, we won't see the agents in humans." But understanding just how high that barrier needs to be and what enables infectious agents to scale it is still an open question – and one Hahn hopes to answer.

The trajectory of Shaw and Hahn's work parallels that of the field of HIV research as a whole, but they are careful to emphasize that they have been only one team among many that have driven the progress. When asked how it is that they have managed to stay at the forefront of HIV research for so long, Hahn laughs her easy laugh: "It's either that or you fall by the wayside."

Vaccines – for HIV, HCV, and now even SIV – remain a crucial focus for Hahn and Shaw. With all of the understanding of HIV dynamics and biology that they and others investigators have accumulated over the past three decades, they believe the community is getting closer to developing an effective vaccine, but just how to get there still remains a challenge. It is a challenge Shaw and Hahn are ready to tackle together. ■



Part of her research has taken Beatrice Hahn to Gombe National Park in Tanzania.

human malaria. When a colleague at NIH called her up and told her that he was cleaning out his freezer and offered to send her the spleen of a previously captive chimpanzee, she jumped at the opportunity. Although investigators had looked at samples from well over 2,000 captive apes with no notable discoveries, Hahn's team eventually uncovered a virus

team reported in *Science* that wild chimpanzees were indeed infected by an HIV-like virus. Even more surprising, the team could determine the precise geographic location in west-central Africa where HIV made the jump from chimps to humans.

Hahn's collaborations with primatologists have led her well beyond research into viruses into a search for the origin of

Nicole Lurie:

A Doctor for Her Country

By Rita M. Rooney
and John Shea

After years of experience in both primary care and public health, Nicole Lurie, M.D. '79, is now the highest-ranking federal official in charge of preparing the nation to face such health crises as earthquakes, hurricanes, terrorist attacks, and pandemic influenza.



She visited Manhattan's historic Bellevue Hospital, eerily quiet after almost every patient had been evacuated because of the fury of Hurricane Sandy. There, she watched as nurses wrote their notes by flashlight.

She toured the Brooklyn Armory, crowded with beds after it had accepted patients from three nursing homes imperiled during the same emergency.

She took shelter in a Boston neighborhood as police searched relentlessly for the perpetrators of the Boston Marathon bombing.

These intense experiences are all part of the job that Nicole Lurie, M.D. '79, accepted back in July 2009: Assistant Secretary for Preparedness and Response at the Department of Health and Human Services. So there she was, a witness to the hurricane's devastation and disruptions as well as to the fear and turmoil in Boston. What stayed with her from those experiences, however, was a sense of how much more devastating both events could have been. Without preparations and practice, said Lurie during a presentation on the Penn Medicine campus in May, "it could have been a lot worse."

And preparation, as her federal title suggests, is Lurie's focus. As she herself acknowledges, the job is not one for the faint of heart.

"Beginning with development of a strategy," she says, "my role can be defined as helping our country to be ready for any kind of adverse public health event, including a response to any challenges the future may bring."

Lurie's professional life has been spent dealing with vulnerable populations, an experience that has ideally prepared her for such challenges. That experience includes years in primary care. She joined the University of Minnesota in 1985 and eventually rose to professor of medicine and public health, director of primary care research, and director of the Division of General Internal Medicine. Her service and skill as a practitioner, teacher, and researcher were acknowledged by her peers, and in 1987 she was elected to the Council of the Society of General Internal Medicine. She later became the Society's president.

As she put it in the Society's newsletter in 1998 after she was sworn in as Principal Deputy Assistant Secretary for Health in the Department of Health and Human Services, she was eager to fulfill her new federal position in the Clinton administration. But, she added, "saying farewell to my patients has been the hardest part about taking leave from Minnesota." Noting that she worked in a public hospital, "most of my patients are, or have been, pretty down and out at some point in the time that I have known them."

In addition, however, Lurie has had a different kind of experience – confronting issues of public health. While in Minnesota, she served as medical advisor to the commissioner of the state's Department of Health. During her first appointment at HHS (1998-2001), she worked to advance Healthy People 2010 and the Health Disparities Initiative as well a pandemic influenza plan. In an article in the *Reporter*, the newsletter of the Association of American Medical Colleges, she cited current research showing, by and large, that the health of Americans was better than it had been ten years earlier. Yet, she wrote, "there are still a number of areas where

disparities exist. For example, a black infant has more than twice the chance of dying in its first year of life as its white counterpart." While conceding that the goal was ambitious, Lurie insisted it was worth pursuing.

Lurie's next stop was as senior natural scientist and the Paul O'Neill Alcoa Professor of Health Policy at the Rand Corporation, the nonpartisan think tank based in Arlington, Va. There, she directed its public health and preparedness work as well as its Center for Population Health and Health Disparities. Her work included projects done with the Office of the Assistant Secretary for Public Health Preparedness at HHS, the predecessor of the position she would accept in 2009.

As she explained in testimony before

The Office of the Assistant Secretary for Preparedness and Response was created in its present form in 2006. It was formed "as a lesson learned after Katrina," which demonstrated how vitally important preparedness was.

the Senate Subcommittee on Bioterrorism and Public Health Preparedness in March 2005, her work included evaluating public health preparedness in California and Georgia; conducting 32 tabletop exercises on hypothetical crises caused by smallpox, anthrax, botulism, plague, and pandemic influenza; and interviewing officials from 44 communities in 17 states. She reported evidence of progress in preparedness, "although I'll also be the first to tell you that we have miles to go before we sleep, especially as we face the threat of pandemic influenza." RAND's research, she continued, emphasized the need for continuing investment in technologies to promote shared "situational awareness." The researchers also found widespread confusion about who is supposed to do what in a public

health emergency – and exactly when responsibility shifts from local to state or federal entities.

These remain some of the concerns of the Office of the Assistant Secretary for Preparedness and Response, officially created in its present form in 2006. As Lurie put it during her presentation at Penn in May, the office was "formed as a lesson learned after Katrina," which demonstrated how vitally important preparedness was. The office was meant to be, she continued, "a single focal point" for all activities related to preparedness and response. And there are many. In her current position, Lurie heads a staff of close to 700 people, including offices responsible for making countermeasures, the Biomedical Advanced Research and Development Authority (BARDA), for emergency management, and for policy development.

When Lurie's appointment was announced, Jeffrey Levi, Ph.D., executive director of the Trust for America's Health and professor of health policy at George

Washington University's School of Public Health, issued a statement: "The President could not have selected a more qualified and capable candidate for the job. . . . Dr. Lurie blends strong medical and subject matter expertise with proven, pragmatic managerial skills."

Colleagues who cite Lurie's energy and focus on her job say she has the rare ability to cut through complex issues and balance many priorities simultaneously and with apparent ease. One colleague sums it up by explaining that Lurie is the kind of person who genuinely cares about making things better.

In addition to her responsibilities at HHS, Lurie makes time to see patients who are without health insurance at the Bread for the City clinic in Washington,



Penn's Raina Merchant: "Nicole is the most phenomenal mentor in the world."

D.C. How does she fit everything in? "It's all about managing a team," she says. "I get to work before 7:30 in the morning and work late. I find my work extremely challenging. I work across HHS, other government agencies, and communities throughout the country. Each component has a wholly different perspective on a problem. Each has lessons from which we can learn. The challenge is to synthesize these lessons so that we can continue to improve our preparedness and do the best job possible for the American people."

When asked what helps her to confront the inevitable hurdles in meeting such a goal, she considers for a few seconds. "The only way I stay grounded is with a fair amount of exercise each day," she admits. "I run, swim, and do yoga regularly, and place a high priority on family time."

Lurie's office in Washington is large enough for efficiency – and just that. Dominated by the American flag, it is clearly a place where the business of the country takes precedence. Directly above her computer screen, in direct line of sight, however, is a framed picture of the

late Samuel P. Martin III, M.D., former executive director of Penn's Leonard Davis Institute for Health Economics. He was the person Lurie considers her mentor and whom she credits with guiding the educational choices that enabled her to accomplish all she has professionally. In fact, Lurie delivered the first Samuel P. Martin III, M.D., Memorial Lecture and returned to the Penn campus in 2007 to deliver the tenth as well.

On May 19, Lurie delivered the graduation address for the Perelman School of Medicine, and she took a few minutes to tell the new graduates about meeting Martin and the impact he had. When Lurie was an undergraduate at Penn, she did not plan to become a doctor; her goal was to address poverty. As a sophomore, however, she spotted a listing for a course called "Health Care as a Human Right." But it turned out to be for freshmen only. "Instead, I began working for the professor, a remarkable man named Sam Martin, who became my lifelong mentor. Through him, I came to see medicine as a tool for promoting social justice and reforming the health-care system as a key component of that effort."

In an interview, Lurie elaborates. "I would say that much of what I have been able to accomplish in life goes back to my roots at Penn." From the start, she says, she was surrounded by Martin and other people who showed her how to combine a life in medicine with a life in policy. "So many of the issues with which I now deal relate to health economics and the health-care marketplace," Lurie continues. "How grateful I am for all those courses I took at the Leonard Davis Institute of Health Economics. I was exposed to some of the top economists at Wharton and learned from people like Sam and Bill Kissick." (William Kissick, M.D., Ph.D., who died this year, wrote *Medicine's Dilemmas: Infinite Needs Versus Finite Resources*. He taught at Penn's School of Medicine and the Wharton School 1969-2001. See p. 48.)

It was because of exposure to Penn faculty that she ultimately applied to and was selected to be a Robert Wood Johnson Clinical Scholar. The Clinical Scholars program comprises academically exceptional

"I would say that much of what I have been able to accomplish in life goes back to my roots at Penn," says Nicole Lurie. From the start, she says, she was surrounded by Samuel Martin and other people who showed her how to combine a life in medicine with a life in policy.

physicians who have completed their training and have an interest in public policy, community health, and health-services research. According to Lurie, it was through the Scholars Program that she first met people who were considered giants in

their field of medicine, people with whom she continues to confer.

Apparently, the intellectual exchange has worked both ways. Raina Merchant, M.D., assistant professor of emergency medicine at Penn, is a recent Clinical Scholar who received her medical degree from the University of Chicago. She has worked with Lurie on a number of projects, both at HHS and at Penn. “Nicole is the most phenomenal mentor in the world,” says Merchant. “She’s an incredible role model who is a diehard in her dedication to her work and who is determined to see we have the kind of policies that assure people are safe and informed.”

Career is not the only phase of Lurie’s life that has benefited from her years at Penn. As a student, she met her future husband, Jesse L. Goodman, M.D., G.M.E. ’79, M.P.H., now chief scientist at the Food and Drug Administration. “We met in the cafeteria one night when we were both on call,” she says. They have three sons.

In her graduation address, Lurie explained more fully how she came to view her mission. She had brought a copy of *The New York Times* to anatomy lab. There, “as I was struggling to remember whether the nerve, artery, or vein was on top and wondering if I would ever make it through what I felt was mindless memorization, I heard a big booming voice above me: ‘Dr. Lurie, please stand up. . . . You will put that newspaper away – you need to know anatomy and not concern yourself with what’s happening in the world. Doctors need to focus on their patients. I never want to see a newspaper in this class again.’” Humiliated, Lurie put the newspaper away. But for years, she continued, “that voice and the message it conveys has haunted me.”

“Fortunately for me, my first patient encounter let me know that I love patient care and I do so to this day. I was assigned to Mrs. Ross, a wise and deeply philosoph-

ical concentration camp survivor who I followed through her two-and-a-half year fight with metastatic breast cancer. . . . And in turn she taught me about the importance of listening and healing, about the human condition and the role of medicine in preventing and alleviating human suffering.” Then, in her third year of medical school, “I did an ambulatory pediatrics rotation in a storefront clinic in a

“As a young doctor, I experienced this constant conflict – a conflict between being a clinician and an activist, between being an activist and a scientist, and only now do I realize that a life in medicine not only led me but compelled me to do all of this.”

After several years in practice, she had another patient encounter that strengthened her sense of mission. A patient who had



neighborhood in North Philadelphia and watched in amazement as my preceptor wrote prescriptions for cans of the food supplement Ensure” for patients – “because they needed food just as much as they needed antibiotics.”

“It affirmed for me that health and poverty are inextricably linked, and if health care is a human right, which I believe it is, then part of my responsibility as a physician would be to help address both the dysfunctional health-care system and the inequalities that contribute to making my patients sick.” And for her, that also meant engaging with the larger world – and reading the newspaper.

missed several visits to the clinic arrived, with her grandson. Her daughter, explained the woman, “had recently landed in jail,” and the grandson had severe asthma. After providing care, Lurie sat down to write her notes about the visit. But, she says, she could not write. “There was nothing to say. They were sick because their community was sick. . . . I said to myself, my patients can’t get better ’til my community gets better, and I need to learn to be a doctor for my community.”

Lurie noted that “many of my colleagues, my university, didn’t really understand what I was doing or why.” But for her, there was no conflict. Instead, “it was an

incredible way to engage with the world around me, which in turn nourished me as a researcher and a clinician and made me better at both.”

Today, as she described it in her graduation address, “I have the honor to serve as a doctor for my country.” In the little more than four years that Lurie has headed the preparedness program at HHS, her office has organized health responses to several catastrophic disasters such as the earthquake in Haiti in 2010 and Hurricane Sandy. It has also developed national preparedness measures. These include contributing to a presidential directive

person the U.S turns to when it gets seriously ill.”

On March 11, 2010, *The New England Journal of Medicine* published an article by Merchant, Lurie, and Janet E. Leigh, B.D.S., D.M.D, on the organization of health-care volunteers in the wake of a disaster. On such occasions, as in the Haiti earthquake, they write, many providers looked for effective ways to help, “and many were frustrated by their inability to connect with a system that could immediately take advantage of their skills. Unfortunately, such spontaneous volun-

with deployment of physicians and other health-care workers and provision of supplies,” she says. “However, the challenges of infrastructure were more difficult in Haiti, where many government personnel had either been killed or had their lives totally unsettled. We took care of 30,000 people, bringing many of them to this country for medical treatment.”

Another example of preparedness is recent drug development aimed at protecting Americans in the event of attack. Drugs to combat bioterrorism are being developed under a partnership between HHS’s Biomedical Advanced Research and Development Authority (BARDA) and pharmaceutical companies. According to Lurie, public-private partnerships offer a new way to develop a robust pipeline of drugs and vaccines, including novel antibiotics that addresses gaps in the country’s preparedness.

In January, Lurie announced that the Food and Drug Administration had approved a new influenza vaccine manufactured with novel technology, which she called “a landmark in influenza vaccine history.” The drug, Flublok, was developed through a multi-year public-private partnership with her office. It may help meet the increased demand for flu vaccine quickly because, unlike other flu vaccines, it is not based on eggs, and it is an example of the new technologies Lurie’s office is responsible for developing.

Despite her many responsibilities, Lurie continues to show a strong allegiance to the Clinical Scholars program that helped her on her own professional course. Recently, she has provided HHS policy rotations to young physicians in the program who rotate through her office. Raina Merchant, who last year received the Robert Wood Johnson Foundation Young Leader Award, was the second of those who benefited from an internship with Lurie. Today, Merchant’s research at Penn is focused on



Part of the devastation wreaked by Hurricane Sandy.

focused on strengthening the security and resilience of the country through systematic preparation for a full range of hazards, such as acts of terrorism, cyber attacks, pandemics, and catastrophic natural disasters. The directive has an integrated set of national planning frameworks. Included are plans for interagency cooperation and guidance for state and local governments, to end the confusion that Lurie described to federal legislators in 2005.

As *The Washington Post* put it in a brief posting about Lurie, “Why She Matters.” The reason, it continued: “Lurie is the

teerism can overwhelm a response system and, unless coordinated, can make things worse instead of better.” Based largely on her experience in helping to coordinate response efforts following the Haiti earthquake, the article points to some of the difficulties volunteers encounter and how they often can enhance their efforts by planning *before* the onset of disaster.

Discussing such tragedies, Lurie points to the differences between the events in Haiti and Japan and asserts that response efforts must take the differences into account. “In each case, the events were met

preventing potentially avoidable deaths from cardiac arrest.

“The whole genesis of my current program came from work I did with Dr. Lurie at HHS,” she says. Originally funded through the Clinical Scholars Program and currently through several NIH grants, the program, MyHeartMap Challenge, seeks to increase as well as identify the number of automated external defibrillators (AEDs) in public places. Despite the number of defibrillators available, few people knew where these life-saving devices were located. The challenge was for contestants to track them down, often via apps on smartphones and other devices used in social media. More than 1,500 AEDs were identified throughout Philadelphia, and the data collected was used to create a searchable, interactive map of AED locations to help bystanders and health professionals access them more quickly. The Challenge is being expanded to other parts of the country, so that 911 operators will be provided with the information to direct callers to the nearest defibrillator station.

In her enthusiasm, Merchant says, “I wanted to take on the entire country from the start. But Nicole convinced me there was a lot to be learned from a pilot project. She was right, of course. We now have a tool kit on how to institute such a program in other areas.”

The challenges of infrastructure were more difficult in the Haiti earthquake of 2010, because many government personnel had either been killed or had their lives totally unsettled. “We took care of 30,000 people, bringing many of them to this country for medical treatment.”

That program became part of the impetus leading to an article in *The New England Journal of Medicine*, written by Lurie, Merchant, and Stacy Elmer, M.A., called “Integrating Social Media into



The alumna addresses the graduating Class of 2013.

Emergency-Preparedness Efforts” (July 28, 2012). In the paper, the authors, citing the Haiti earthquake and the Deepwater Horizon oil spill in the Gulf of Mexico in 2010, contend that social media have become an important resource in recovery efforts following a disaster and that devices like smartphones can allow disaster victims to connect more readily with assistance. “In many instances, by sharing images, texting, and tweeting, the public is already becoming part of a large response network, rather than remaining mere by-

standers or casualties.” Social media can both “push” information to the public and “pull” information from the bystanders.

As Lurie noted in her presentation at Penn, however, “social media is not a

panacea.” Responders have to be able to tell “what’s signal and what’s noise,” and there were, she added, many wrong messages sent during the crisis following the Boston Marathon. In the article, the authors also raise the issue of privacy. More studies are needed to evaluate the use of social media in public health, but there is great promise.

At Penn this spring, Lurie noted some of the damage inflicted by Hurricane Sandy. More than 1,800 federal medical responders were deployed at the request of the affected states, and federal assets had been “pre-positioned.” Eight hospitals were evacuated; 14 needed generators to continue; and even today, Long Beach Medical Center on Long Island has not reopened. What made the difference, Lurie emphasized, was preparedness. In some cases, administrators were thinking “this could never happen to us.” The hospitals that survived did so “only because they practiced.” Those that were dependent on electricity were especially vulnerable. Looking back to Hurricane Katrina, Lurie noted that the hospitals in New Orleans

had not prepared adequately and the circuits were quickly overwhelmed. During Sandy, some researchers associated with hospitals who had not shared their research with others were unable to retrieve it and lost everything. In a letter published in *Science*, Lurie and Kristin L. Rising, M.D., urged greater preparedness. “Individual researchers must take responsibility for developing an emergency plan that protects their research material and data from unanticipated losses. . . . They might also consider collaborative arrangements in which irreplaceable material is routinely stored at a backup facility or an-

“From my vantage point, I see the great looming threats of our time, but also the great looming solutions. . . . I am increasingly heartened by your generation’s drive to make a difference.”

other institution” (11 October 2013). Likewise, some hospitals suffered because they did not have electronic medical records. Rising, an attending physician in the emergency department at the Hospital of the University, is another young physician who rotated through Lurie’s office.

In contrast, hospitals that built capabilities for *all* hazards remained in operation; that may have included having “redundant” methods of communications, in case one or more failed. Some hospitals also made sure to have their patients receive dialysis before Sandy struck. As Lurie observed, these kinds of preparations can work for cities as well. Boston, she said, has an “all-hazards approach,” and the city now holds annual “mass gathering” drills. The relative calm and control after the bombing itself “wasn’t an accident,” said Lurie. “They had a plan for it.” One important lesson the emergency teams had learned: don’t bring every casualty to the closest trauma center.

In this context, Lurie would appreciate that three hospitals in Penn’s Health System recently took part in a tabletop exercise led by the Philadelphia Department of Public Health, called “Pandemicize 2013.” It was designed to test the ability of public health and hospitals in the city to plan for a response to an outbreak of a viral respiratory illness.

Her years in Washington have not daunted Nicole Lurie’s enthusiasm. She says she’s still excited about getting up every morning and doing what she is doing. Rewards? “They are all around,” she says.

In 1998, as part of her parting comments as president of the Society of General Internal Medicine, she wrote about her patients in the public hospital: “Many days I have wondered if what I do – primary care – makes any difference at all.” She went on to give brief histories of some of her patients, such as Mario, who had been a homeless schizophrenic, and Louis, a young man with recurrent pancreatitis. “Sometimes the progress is less dramatic than I would have liked, but it’s progress nonetheless,” wrote Lurie. Most of her Minnesota patients “have overcome seemingly incredible odds and had remarkable achievements. They have taught me . . . how to be a doctor, and now have taught me again the true value of primary care, not only for each of them but for populations.”

For most of her career since then, Lurie’s focus has been populations. Still, as she says today: “When you see that you’ve been able to make a difference, that’s the big reward. I continue to believe that

public service is a calling. Regardless of what I do in the future, helping to make a difference for people in their communities will remain paramount.”

Her own service has been widely recognized. In addition to being the Graduation Speaker at the Perelman School of Medicine’s graduation ceremony this spring, Lurie received the school’s highest honor for graduates, the Distinguished Graduate Award, in 2009. On the national front, she has received the Young Investigator Award of the Association for Health Services Research; the Nellie Westerman Prize for Research in Ethics, presented by the American Federation for Medical Research; and a Mastership from the American College of Physicians, among other honors. In addition, she is a member of the Institute of Medicine.

In her Graduation Address, Lurie touched on the challenges facing the new M.D.s. “From my vantage point, I see the great looming threats of our time, but also the great looming solutions. . . . I am increasingly heartened by your generation’s drive to make a difference.” Conceding that the new graduates would “work harder than you’ve ever worked before,” she urged them to be “the next generation of America’s health leaders.” She also urged them to be open to what patients tell them. “Stay connected and engaged with the world around you.” And that, of course, entails reading the newspaper!

Like many members of the Obama administration, Lurie also argued that today, “you are closer to health care as a human right than we have ever been . . . and we’re on the verge of expanding access to care to millions of Americans through the Accountable Care Act.” Health care as a human right – that has a familiar ring.

Does it all in some way come back to Penn? At the end of every day, Lurie says, she looks up at the picture of Sam Martin on her wall. “It reminds me I have a lot to give back.” ♥

Career Prep Program Shows Great Results

Pipeline as metaphor: it's an image that suggests the process of bringing vital water or fuel to a community greatly in need. And for two hundred students in West Philadelphia, Penn Medicine's High School Pipeline Program has been a welcome means of focusing their ambitions and introducing them to careers they may not have considered otherwise.

In September, members of the Penn Medicine staff, family members, community partners, and friends gathered to celebrate this year's graduating class. Since 2007, the comprehensive program has been an important part of Penn Medicine's commitment to West Philadelphia. Students recruited solely from West Philadelphia schools work across Penn's Health System, regularly meet with different mentors and managers, and experience other opportunities for professional development. They do all this while taking community college courses and taking part in everything else that comes with being a high-school student.

As Frances Graham, associate director of workforce development for UPHS, told the student attendees, "You not only met our expectations, but you exceeded them."

With financial support from Penn Medicine, University City District, and the Philadelphia Youth Network, graduates of the Pipeline can become Penn Medicine Academy Interns. The internship invites approximately ten students to work 20 hours a week and be paid for 40 hours. The extra hours allow participants to take advantage of Penn Medicine's tuition benefit to help fund a college education. Additional funding comes from HUP's Trauma division in the form of \$500 scholarships for selected students aspiring for a health-care career.

Students and Mentors

Throughout Penn's health System are numerous stories of students and their mentors. One example is Victoria Brown, a clinical transplant nurse in Surgical Nursing, who was a mentor for Brittany Williams on Rhoads 4. "We talked about

the importance of being persistent and organized in everything you do – and avoiding procrastination," said Brown.

"The people I met and the lessons I learned made it fun," said Williams.

During her internship, Williams made patient's beds, talked to patients, delivered ice and supplies, answered the front desk phone, directed family members, and assisted wherever needed. She is now at Jackson State University, attending on a full scholarship.

Another story is Shanice Jackson, a student at Community College of Philadelphia and current PMA intern for the Perelman Center for Advanced Medicine Rapid Response Team. She credits the Academy and the mentoring she receives from Andrea Blount, a primary-care connector nurse in Trauma, with helping direct her career.

"When I first came to the program, I said I wanted to be a neonatal nurse," said Jackson. "I didn't want to work with older populations." But being in the trauma division and helping in programs to prevent falls, she said, "taught me that older patients are just as important."

"There is no event that I like better than the celebration of graduates from the High School Pipeline Program," said Judy Schueler, the UPHS vice president of organizational development and chief human resources officer, whom Graham credits as the visionary who brought the project to fruition. According to Schueler, what attracts people to work at Penn Medicine, in addition to salary, benefits, reputation of the institution, and other factors, is "the culture of learning and innovation."

This commitment led Schueler to create the Pipeline program as a summer internship six years ago and extend it to a 12-month program in 2010. In total, 88 students have served in the two-year, year-round program since it began in 2010. From 2007 to 2010, the program was an internship only. Since 2007, 197 students have been enrolled in the Pipeline. ■

– Gregory Richter



Shanice Jackson (second from left) currently transports HUP patients as part of the Pipeline Program. With her are (l. to r.) Nahree Anderson, nursing assistant; Lorna Taylor, unit secretary; and Diane Leichter, nurse manager, all of Silverstein 9.

Samuel Crawford:

From Surgeon to Soldier

By Jon Caroulis

From the shelling of Fort Sumter to the Confederate surrender at Appomattox, Samuel Crawford was a witness to history – and an active participant.

Samuel W. Crawford, M.D. 1850, was about to enjoy the comforts of civilization on a fine September morning in 1860. An Army surgeon, he'd spent the past 10 years at posts in the "frontier" of the country, such as Texas and New Mexico. But now he was visiting with friends in Newport, R.I., and was about start breakfast when he received a telegram.

It was from the Adjutant General of the U.S. Army directing him to proceed at once to Fort Moultrie, a few miles from Charlestown, South Carolina. Crawford, a captain of the medical staff of the army, immediately left his friends



and caught a train. Shortly after his arrival in Charleston, Crawford attended a convention there where the secession question was debated, and he left it having no doubt it would occur. The state indicated it would secede from the country if Abraham Lincoln were elected president that November. (For the record, Crawford was not particularly impressed with the new commander in chief, having described him in a letter to his brother as a third-rate politician.)

Crawford soon found himself caught in a vortex of events that led to one of the most remarkable careers in the Civil War.

He was with the garrison at Fort Sumter when the Confederates fired upon it. Afterwards, he joined the regular infantry army and saw action at Gettysburg, the Battle of the Wilderness, and Antietam, where he was severely wounded. In April of 1865, he was with Gen. U. S. Grant at Appomattox Courthouse when Gen. Robert E. Lee surrendered. Few men on either side of the war were present at so many crucial encounters.

Crawford was born on November 8, 1827, in Franklin County, Pa., and enrolled in Penn's college when he was only 14. Although the curriculum then stressed a "liberal arts education" – philosophy, history, Latin, etc. – he showed an interest in science. In his junior year, Crawford was selected to the Philomathean Society, the college's literary society, and in his senior year he was named its moderator.

When he graduated in 1846, his thesis was on flowers. But by University rules, he was too young to start medical school, so he went on to earn a master's degree. This time, his thesis was on anatomy.

As with his other degrees, Crawford would have to write and defend a thesis

before a faculty panel to graduate from Penn's medical school. On March 28, 1850, he successfully presented a paper on hypertrophy and atrophy and earned his medical degree. Graduation took place on April 6, 1850, in Musical Fund Hall on Locust Street.

A year later, he joined the Army. According to several sources, he had the highest score of anyone who took the entrance exam to join the Army medical corps.

Richard Wagner, author of *For Honor, Flag, and Family: Civil War Major General Samuel W. Crawford, 1827-1892* (2005),

One year after successfully presenting a paper on hypertrophy and atrophy and earning his medical degree, Samuel Crawford joined the Army. It is speculated that he was looking for more adventure than a regular practice would provide. As it turned out, he probably found more adventure than he ever expected.

believes Crawford chose the Army because it would provide adventure. "At that time it was a very honorable thing to be an officer in the U.S. Army," says Wagner. "But it was important for him to travel. After he retired, he became a world traveler. He wrote articles back to local newspapers from all over Europe and the Middle East."

Part of Crawford's adventurous nature was displayed while he served on the Mexican border: he climbed Popocatepeti Volcano, nearly 18,000 feet high, calling it "an exhausting and exhilarating experience." He drew sketches of its interior. He

also conducted botanical and zoological research before the Civil War and submitted papers to the Smithsonian Institution. In 1858, he became a member of the Geographical Society of Mexico; and in 1879, he was named a fellow of the Royal Geological Society of Great Britain.

The scientific training Crawford received would serve him well in another capacity: as author.

Adam Goodheart, in *1861: The Civil War Awakening* (2011), writes: "As a medical man, Crawford had attended not West Point but rather the University of Pennsylvania. After nearly a decade in the army, he still brought the eye of an outsider, and of a scientist, to bear on things around him. From the beginning of the crisis, he had been taking meticulous daily notes with an eye toward not only history but also the literary marketplace. While at Sumter, Crawford even made sketches of the fort, which he sold to *Harper's Weekly*."

While at the fort, Crawford also wrote to his brother that he hoped someday to write a book about his Sumter experiences. Three months before the first shots were fired, he wrote to his brother about



Bronze statue of Brig. Gen. Samuel Crawford, at Gettysburg. Sculptor: Ron Tunison.

the crisis that was worsening: “The truth is *we are the government* at present. It rests upon the points of our swords. Shall we use our position to deluge the country in blood?”

Crawford was also upset by the defection of some soldiers to the Confederate side. As he wrote in his journal, “We cannot repress the sadness that comes over us when we see one by one of our old comrades dropping away, men with whom we have [shared] many a bivouac in the far distant frontier. How are we to regard them as our enemies now?”

On April 12, 1861, the Confederate forces opened fire on Fort Sumter, which controlled the entrance to Charleston

At Gettysburg, Crawford commanded the 13th Pennsylvania Reserves. As the troops were about to advance against the Confederate army, the corporal carrying the U.S. flag was wounded. On horseback, Crawford took the colors from him and carried it high as he charged the enemy.

harbor. The barrage lasted 34 straight hours. In the end, the U.S. Army agreed to surrender and evacuate the fort.

Once the Confederacy fired upon Sumter, the Union soldiers – which included Abner Doubleday – became celebrities while holding out against the unrelenting cannon barrage. P. T. Barnum staged a show in New York City highlighting the men. While it’s known who portrayed Doubleday,

there’s no record of who played Crawford.

While Sumter was being shelled, Crawford was not merely a passive observer of events: he asked the detail’s commander, Major Robert Anderson, if he could lead one of the batteries in the fort, and Anderson agreed.

Wagner speculates that seeing death and injuries gave Crawford a glimpse of what life would be like for him during the war if he stayed with medicine, and he didn’t particularly care for the prospect of constantly operating on wounded soldiers and amputating limbs.

Crawford’s change of course “has everybody puzzled,” says Wagner, adding that people have speculated that “he could make rank faster in the infantry. There are those who say he wanted more glory. I’ve read things that have indicated this was probably true.”

“There’s no question he was a very egotistical man,” Wagner continues. “It always pleased him if he moved up in rank.”

Crawford was commissioned as a major in the 13th U.S. Infantry, and he saw action – and much death. At Antietam, he was seriously wounded in the thigh. One account has Crawford staying on the battlefield until he nearly passed out from blood loss and had to be carried off on a stretcher. It took Crawford eight months to recover. When he did rejoin the army, he was given command of the 13th Pennsylvania Reserves. It was this brigade that he commanded at Gettysburg.

Accounts of his importance there vary. By the second day of the battle, Confederate troops had advanced through an area called “Devil’s Den,” driving Union troops to a small stream. Crawford was ordered

Under Bombardment



The sea was calm, and the night still under the bright starlight, when at 4:30 A.M. the sound of a mortar from a battery at Fort Johnson broke upon the stillness. It was the signal to the batteries around to open fire. . . . Hardly had the echo of this opening gun died upon the air, when the mortars nearest to the fort opened their fire, which was at once followed by others in the neighborhood, and in succession

by the batteries around, until the fort was “surrounded by a circle of fire.”

Projecting above the crests of the walls, the roofs and gables afforded the easiest marks, and were soon riddled by the shots. The fire was steadily kept up through the day and only lessened upon the approach of night.

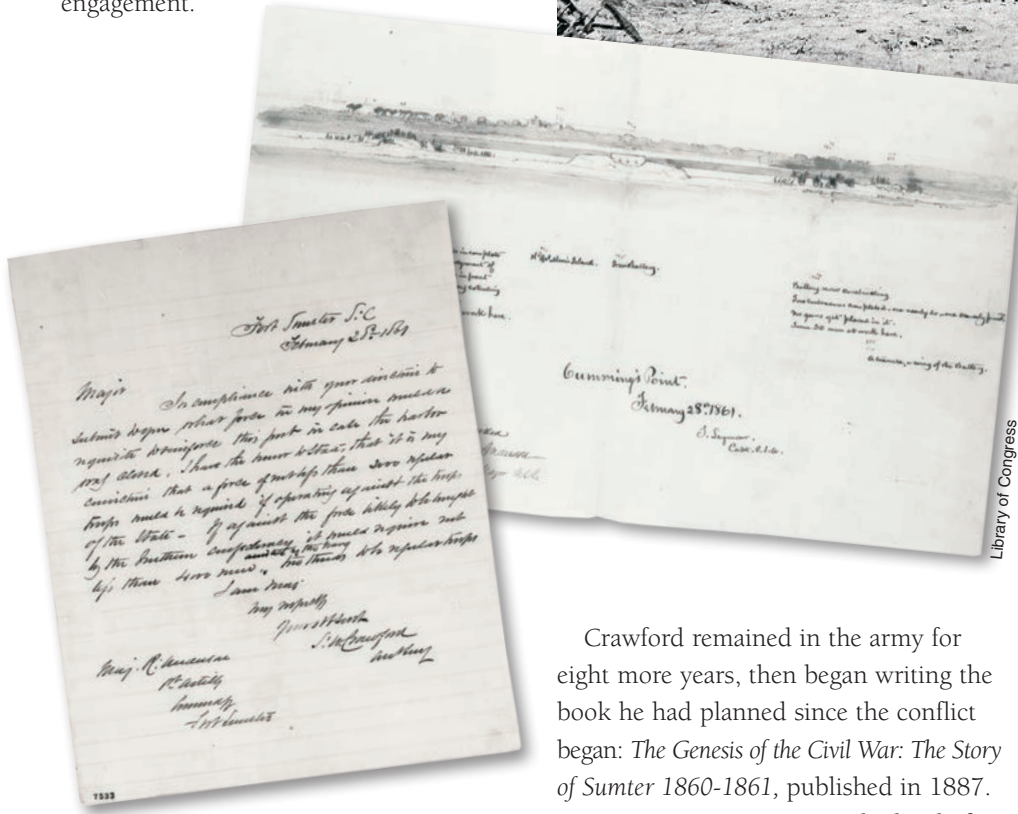
– from *The Genesis of the Civil War: The Story of Sumter 1860-1861*

to engage the enemy and drive them back. As the troops were about to advance, the corporal carrying the U.S. flag was wounded in the hand. Crawford, riding his horse, took the colors from him and carried the flag high as he charged the enemy, telling his troops, "Make Pennsylvania your watchword and quail not upon its soil. Forward, reserves!"

One historian wrote, "This gallant charge saved the day. . . ." On the other hand, another called the charge "a minor engagement."



Crawford (fourth from the right) and his staff of seven were photographed by Mathew Brady. Left: Examples of Crawford's correspondence, written while he was stationed at Fort Sumter.



relationship there. If I come across something I can't identify, I'll go to his book, and many times he had the answer."

Wagner also notes that actors use the book as a guide for staging re-enactments of Fort Sumter.

Crawford's other postwar obsession was having a monument constructed to the Pennsylvania Reserves at Gettysburg. He purchased the 49-acre tract today called the Valley of Death, where his troops had fought, but no memorial was ever constructed. Crawford died on November 3, 1892.

Eventually, the acreage he purchased became part of Gettysburg National Park, and in 1988 a bronze sculpture of Crawford, carrying the flag, was dedicated.

Crawford stayed connected to Penn. In 1867, the University granted him an honorary law degree, and he served as vice president of the alumni society. After he completed the manuscript of *The Genesis of the Civil War*, he wrote the book's five-page preface while on a visit to his alma mater. Beneath his name is "University of Pennsylvania. Philadelphia, April 12, 1887." ♥

Although Crawford was not in the McLean house when Gen. Lee met with Gen. Grant to discuss peace terms, he was in the area. He later met with Lee after the surrender at the Confederate headquarters – which was nothing more than a large tent. According to an article by W. Barksdale Maynard in *The Pennsylvania Gazette*, Crawford was "one of only two men known to witness both the alpha and omega of the Civil War" (March/April 2011).

Crawford remained in the army for eight more years, then began writing the book he had planned since the conflict began: *The Genesis of the Civil War: The Story of Sumter 1860-1861*, published in 1887.

In Wagner view, "It's not the kind of book you curl up in front of a fireplace and can't put down, but it's loaded with information." In fact, Crawford does not describe the actual battle until 400 pages into the book.

Wagner points out that Crawford spent 12 years researching the book, which included many interviews with crucial figures, including members of President James Buchanan's cabinet. "In his papers in the Library of Congress I found letters from Buchanan to the [Crawford] family, so there was some re-


Library of Congress

Photos by Tommy Leonardi
(except bottom of p. 27)

ADVANCE

Has Their Backs

By Marshall A. Ledger



A SOUP-TO-NUTS PROGRAM in professional development orients junior faculty members – from their first months at the Perelman School of Medicine – toward flourishing and satisfying careers.

The keenly anticipated letters arrive, signed by the head of the academic department and confirming acceptances at the Perelman School of Medicine – not for incoming students but for new faculty.

They typically start: “I am pleased to offer you the position of . . .” And they usually end by expressing the department’s enthusiasm for the new hire and its anticipation “that you will have a highly successful and enjoyable career.”

That pleasantry is not an afterthought. The Perelman School of Medicine is actually putting institutional muscle into helping its faculty succeed, a process described in the body of the letters. They refer the appointees to institutional documents such as the faculty handbook and policies on responsible conduct, patents, intellectual property, and conflicts of interest.

And they include a paragraph that incoming faculty before the 21st century would not have received: information on how new faculty may acquire useful techniques to plan what they will do at Penn and how to reach their goals.

For reappointment and promotion, according to the faculty handbook, “a high degree of excellence is expected in both

research and teaching.” But who ever taught members of the junior faculty to teach? To write well enough to vie for grants in a competitive climate or get published in first-rate professional journals? To develop “intellectual leadership” by mentoring junior staff and communicating effectively with patients? Or to complete the bulky task of assembling and organizing the raft of papers that document their credentials for promotion? Who ever taught them, in a phrase, how to manage their careers?

ADVANCE’s role

That’s the mission of ADVANCE, part of an office called Faculty Affairs and Professional Development. FAPD deals with the administrative functions of a faculty member’s career in the School of Medicine (recruitment, appointment, promotion, retirement); and such particular issues as tenure, sabbaticals, diversity/inclusion, and professionalism. As Victoria A. Mulhern, FAPD’s executive director, puts it with some irony, Penn Medicine is “fairly unique” in offering the full slate of such services.

ADVANCE is a staff training program for members of the junior faculty, who

number nearly 850 in a total School of Medicine faculty of 1,980; up to 200 new appointees arrive each year. Says Mulhern, “It focuses exclusively on the development of skill sets that will help a faculty member advance and achieve success – which in our world is promotion.”

Today’s cohort of senior and retired faculty generally experienced a different sort of welcome when they first came to Penn. Vivianne T. Nachmias, Ph.D., emerita professor of cell and developmental biology, remembers the stance when she arrived on campus in 1976 as an associate professor without tenure: “Can you swim? If not, we’ll find someone else who can.”

Thirty-seven years later, Rachael J. Berget M.Ed., associate director of FAPD and director of ADVANCE, shakes her head at that notion. “The School of Medicine asks a tremendous amount from the faculty,” she points out. “It would not be fair to say, ‘Be a superb teacher, clinician, researcher, and have a national reputation – and good luck with that!’”

Or, as Arthur H. Rubenstein, M.B., B.Ch., then dean of the medical school, stated in a 2008 letter to the faculty in announc-



Rachael Berget, left, and Victoria Mulhern have a wealth of experience in supporting academic career development.

ing additions to ADVANCE's curriculum: "It is the responsibility of leadership to provide an environment where faculty know what is expected of them, where the resources to fulfill those expectations may exist, and where efforts are appreciated and rewarded."

Not only has the school's attitude changed – so has that of the faculty. Previously, they tended to picture their careers moving in a straight line, says Mulhern. "Now, the faculty can go from basic to translational research, more clinical to less clinical, as their interests evolve and the institution's needs in academic medicine evolve."

ADVANCE equips them for the journey. It bills itself as an "institutional mentoring program" – in short, a school-wide effort that mirrors the personal and powerful one-on-one bond of mentor-protégé. The figure of speech is powerful in the Penn context, where mentoring is regarded seriously.

Good matches are made, not born

Penn Medicine shows its esteem for mentors by bestowing an annual Mentoring Award of Excellence. It is named for Arthur K. Asbury, M.D., the Van Meter Emeritus Professor of Neurology, who has served as

department chair, vice dean, and (twice) acting dean, as well as an ally-advocate of school personnel at all levels for nearly 40 years.

Mentoring, Asbury says, is "an aspect of teaching" that permeates the medical profession: advanced medical students share knowledge and skills with more junior students; senior physicians in private practice generally mentor their younger colleagues; and in academe, it is "a clear duty."

Accordingly, it is built into all new School of Medicine appointments. New

appointees find or are assigned someone more experienced who will help them move ahead, for instance, by sharing knowledge, helping them network in their field, guiding them through Penn's processes and procedures, and generally encouraging them.

How important is a good match? According to many senior faculty members, it is fundamental for success at a place like Penn Medicine.

Yet younger faculty members sometimes fumble the opportunity. One professor reported once receiving a draft of a protégé's grant proposal an hour before the protégé was scheduled to discuss it with him. "That's actually a very destructive thing to do," said the professor. "It tells me you really don't want me to think about this."

But how to grow excellent rapport and a satisfying experience on both sides is not always obvious. There's even another wrinkle, Berget notes: Most people consider themselves decent mentors (and teachers), yet mentoring, like teaching, does not come naturally to everyone. In addition, younger faculty may oversee postdocs, residents, and students, so they must know how to function on both sides of the relationship. To get new faculty started right, ADVANCE sponsors a session on "Getting the Most Out of Mentoring."

The swimming coaches

The panel for a recent session of this class includes Caryn Lerman, Ph.D., professor of psychology in psychiatry, who won the Asbury Award in 2008, and Gary A. Koretzky, M.D. '84, Ph.D., the Francis C. Wood Professor of Medicine and Asbury Award winner in 2006. They make and invite comments while Berget identifies mentor-protégé principles via a PowerPoint presentation.

The audience consists of some 15 junior faculty members, including at least two who still are counting their time at Penn in months. Several note that they want to



Caryn Lerman, Ph.D., professor of psychology in psychiatry, has received the Arthur K. Asbury Outstanding Faculty Mentor Award.



‘yes, yes, no, yes,’” Lerman says. She spells out the code’s meaning: “It sounds like a good idea. I can see why you want me to do this; it sounds like a really interesting program and opportunity. But I don’t feel that, for me, it’s the right time. Could you please consider me for something in the future, and here’s my suggestion of somebody else you might consider now.” She adds, “That’s a strategy that’s both gentle and honest.”

Eventually, the panelists say, protégés will be weaned from their mentors. But when, a young faculty member asks, will they reach a point when they don’t need mentors at all.

“How about never,” Koretzky suggests. He points out that Carl H. June, M.D., the Penn pathologist who, last December, was named to the

Richard W. Vague Professorship in Immunotherapy, credited his Penn mentors when he received the endowed chair.

Mentors shouldn’t be hard to find, the panelists suggest. Senior faculty “take great pride in working with younger colleagues,” says Koretzky. “At Penn, they see their colleagues’ success as their own, rather than competition. That’s honestly one of the reasons I came to Penn.”

Discovering the need

The ADVANCE program, and its parent FAPD, trace their *raison d’être* to the Faculty 2000 Project, a comprehensive medical school review that began in 1998 as an initiative to align the status of the clinician-educator faculty with health-care realities at the end of the 1990s. Other school-wide issues, however, had also been bubbling and deserved attention.

In the mid-’90s, an internal survey of the school’s department and division leaders found agreement on the importance of mentoring, “yet many reported having

improve as mentors as well as protégés. Neha N. Patel, M.D. ’06, G.M.E. ’09, assistant professor of clinical medicine, directs residents studying health-care quality and safety. She says she “struggles” with whether she should be a “supporter mentor, soft and really encouraging,” or a more aggressive “champion mentor.” She asks the panel, “Or do I have to choose. Can I be both?”

Since no one needs convincing that mentoring is important, the panel concentrates on the central point for protégés: They must be active in the relationship – initially finding the right person or, if a mentor is assigned, assuring that the fit is good; prompting changes when it isn’t; constantly enlarging their stable of mentors to cover expanding interests; getting specific career guidance; keeping them informed; and asking ever more of them. By shaping the relationship, the panel suggests, protégés assert control over their own professional lives.

For instance, the protégé could seize the initiative when applying for RO1 (i.e., investigator-initiated) grants to the National Institutes of Health by seeking expert commentary even before writing the proposal.

Yet it also comes out that protégés should not seek guidance too early – or

too late. Too early is when the applicant cannot express the point of the project, much less any details, on paper. Too late, and any criticism at that point may be very painful to hear.

Koretzky says he may gather a half-dozen experienced faculty members together with the protégé to rigorously discuss concepts over dinner (“food works for students, and it works for faculty,” he quips). Such meetings, he says, have turned “triaged” grant applications – those ranking so low after a preliminary N.I.H. review that they are deemed unlikely to be funded and are dropped from later consideration – into funded grants.

Good mentors are more than advice dispensers, the panelists say. They help protégés get recommended for awards or appointed to N.I.H. study sections or invited to give talks or meet others in their field in a city where, for example, the protégé is planning a vacation.

Good mentors also help protégés say “no” to other people. “All of us learned



no systematic plan for mentors for junior faculty,” and only about half of the assistant professors even had mentors.

About the same time, Penn Medicine faculty launched two organizations that quickly became national models for giving a voice to underrepresented groups: FOCUS on Health & Leadership for Women, to promote education and research into women’s health and “support the advancement and leadership of women in academic medicine”; and the Center of Excellence on Minority Health, now called the Center of Excellence for Diversity in Health Education and Research. Faculty 2000 took up their concerns and those of others, including retiring faculty and faculty with disabilities.

The project also had a psychological aspect, according to its chair, James C. Saunders, Ph.D., now emeritus professor of otorhinolaryngology: head and neck surgery. “In some way,” he says, “the faculty needed to gain a sense that the School of Medicine was directly and intimately concerned with their well-being,” not simply with what they could deliver to the institution in the way of grants or patients or prestige. In addition, he says, the administration had to know what was important to the faculty.

In its final report, Faculty 2000 noted, “Most of the faculty members realize that our School has gone from comfortable excellence to elite status” – without a corresponding personnel infrastructure to support and even improve upon that standing. Its recommendations would provide a fix: “If implemented, they will give our faculty the flexible, efficient, and cost-effective means to excel in its clinical, research, and teaching efforts.”

Among its proposals, Faculty 2000 advised that the Medical School’s Office of Faculty Affairs, which chiefly dealt with employment, be expanded to address the “educational needs of a large, diverse faculty.” Faculty 2000 then listed some

promising opportunities: “orientation of new faculty, and regular faculty training programs in such areas as organizational management, mentoring, teaching effectiveness, preparation for promotion, and management of a laboratory or a clinical practice.”

The result was a broadened office of faculty affairs: FAPD, with ADVANCE charged with the “PD” – professional development from appointment through retirement. “A strong, effective” FAPD, Faculty 2000 noted, would help “maintain a vigorous ‘faculty politic’ within the Medical School.”

Starting careers: teaching

Before coming to Penn to run ADVANCE, Berget worked in academic career development at other institutions, where her programs served faculty, postdocs, fellows, and residents. “The scope was too broad,” she says. ADVANCE addresses the medical school’s junior faculty, although postdocs, as well as people from other Penn schools and even other health-science schools in the area, sometimes register for classes; and it holds classes for professors considering retirement. “First and foremost, we want to help our faculty be successful,” she says. “That focus is important.”

“Attaining Teaching Excellence” is one of the curriculum’s most comprehensive modules. Mandatory for all new assistant professors is “Overview of Education at Penn Medicine,” its importance underlined by the presence on a panel of J. Larry Jameson, M.D., Ph.D., executive vice president of the health system and dean of the medical school.

“Teaching is a priority,” Jameson says before a recent session. “We pay a lot of attention to the feedback – it’s one of those things that can be a deal-maker, or deal-breaker, in the promotion process.” And why? “There’s a correlation between people’s teaching skills and other attributes: grant submissions, interactions with patients.”

ADVANCE, he adds, highlights teaching’s role and “helps people take a formal approach to it.”

He opens the overview session by mentioning a superb biology teacher of his who turned Jameson’s indifference toward a required course into a passion for medicine and science. Jameson has become renowned in molecular endocrinology, one of the editors of *Harrison’s Principles of Internal Medicine* and co-author of *DeGroot and*



Erika Shor, Ph.D., led a class on how to write about study results effectively.

Jameson’s Endocrinology. If not for that teacher, he says, wryly recalling a fall-back career option, “I probably would have been a struggling writer.”

In addition to the overview, new Penn Medicine faculty must attend two other classes on teaching, choosing from, among others: the Stanford Clinical Teaching Framework (a structured instruction methodology of seven elements, with Penn Medicine focusing on “learning climate,” “communicating goals,” and “evaluation and feedback”); sharpening presentations, whether for professional audiences or the media; and writing effective and valid test questions in the National Board of Medical Examiners format.

Or they may go online for sessions in, among others, “Facilitating Small Groups

in the Classroom,” “Lecturing Tips and Strategies,” and “Clinical Teaching in Outpatient Settings.”

Voices of experience

“Career Management” is probably ADVANCE’s most multifaceted track. It includes a “Strategies for Success” series, which demystifies promotion and reappointment standards. Students learn about the process, and then senior faculty members speak about their actual experience in establishing their practices or labs, how they have kept them going, secured funding, and networked with experts elsewhere.

The series spares department chairs, who otherwise would have to convey this information over and over, says Faculty 2000’s Saunders, and it conveys information that cannot be “intuitively derived.”

Douglas J. Pugliese, M.D., G.M.E. ’12, assistant professor of clinical dermatology, says that, “as a medical student and resident, you’re shielded from the business side of things.” Then, as a faculty member, you’re expected to deal with such issues – which is why he welcomed ADVANCE’s course on promotion in his academic-clinician track.

Faculty recruited from other institutions have told Berget (who sums up their comments) that, in their former situations, “Promotion was a black box. It’s nice that you guys make it transparent.”

As Berget puts it, “It’s gratifying to hear them say it’s useful.”

ADVANCE supplements such courses with “career narratives,” co-sponsored by the Minority Faculty Development Program. In one presentation, Diego Jaramillo, M.D., M.P.H., professor of radiology and radiologist-in-chief at the Children’s Hospital of Philadelphia, describes his ups and downs as he moved from his native Columbia, where he earned his medical degree, to settle and rise in the faculty ranks in the United States.

Jaramillo recalls his “rough transition.” On his first day as an intern in medicine



Christopher D. Watt, Ph.D. '03, M.D. '05, assistant professor of clinical pathology and laboratory medicine, shown here, and Ian Petrie, Ph.D. '04, senior associate director of Penn’s Center for Teaching and Learning, presented on effective lecturing.

at a Miami hospital in 1982, he was assigned a patient. When the attending physician asked him, “So what does the patient have?,” he had to admit that, after 10 minutes of listening to her, “I didn’t understand a word of what she told me.” It was the difference, he explains, between understanding medicine from a textbook and understanding what patients mean when they describe their problems.

Nor was he familiar with the technology in the lab or medical abbreviations or AIDS or concerns over lawsuits. Another low, years later: He failed to get an important clinical-research grant, largely, he says, because he lacked a clinical mentor. Among the highs: two mentors, one in his field and one in basic research, and another one he subsequently found who helped him secure the \$5-million R01 grant he had previously failed to receive.

Research, writing, and publishing

ADVANCE covers the full scope of a faculty member’s research agenda, starting with a course on basic administration: how to put together a budget, how to hire, how to conduct responsible research, how to collaborate and make other connections. “Faculty have never been required to do some of these things,” Berget notes.

It also offers sessions on grant writing and on new technology, such as managing clinical data using REDcap (“research electronic data capture”). This software package allows far-flung researchers – for instance, those taking part in a clinical trial with sites around the country – to store and share data in a uniform and secure way. “This was a very popular class – the room was full with nearly 30 people,” Berget says. “We’re planning more classes that touch on both technology and research. That’s a real need.”

For investigators ready to report their findings in papers, ADVANCE is ready with “Writing an Article for Publication,” a course of four sessions. Each session is devoted to a part of a scientific paper: results and figures, introduction, discussion, and abstract. (That order reflects the best practices of writing scientific articles). The teacher is Elizabeth M. Colston, M.D., Ph.D., G.M.E. '03, associate medical director of Discovery Medicine Virology at Bristol-Myers Squibb and founder of EMC Biomedical Communications LLC.

Colston runs each class as a “draft workshop,” which she calls a “very active learning process, appropriate for adult learners.” Because it is hands on, she promises her students, who are both basic researchers

and clinicians, that they will be able to go directly from the class to their offices and apply them.

Her overarching theme is that articles must be written – and more importantly, revised – with the reader in mind: “Readers need and expect a sense of structure,” she emphasizes in a handout, on the whiteboard, and verbally. The paper as a whole (figures, legends, and text) must tell a “compelling” story, and all sections and subsections must be mini-stories.

The nub, she says, is to organize the text “as a repeating pattern of four elements”:

- * The question behind, reason for, or purpose of the experiment (“the set-up”): *Q*.
- * The experimental details or method (“the how”): *E*.
- * The results (“not a data dump”): *R*.
- * The answer, point, message, or meaning of the results: *A*.

She arranges them as *QERA* or *QEAR* (the difference mostly a stylistic choice, she says), which reflects a reader’s “thought process.” It’s not a template but an organizing principle – especially, she adds, when revising.

In a recent class on results and figures, several students push back, saying that

they’ve been taught that the formula fits the overall paper, but not an internal segment such as results. Colston responds by directing the class to drafts that two plucky volunteers have submitted from articles in progress.

The first paragraph of one results draft contains seven sentences with six *R*s and one *E*. The students recognize the problem: Without a proper orientation, the reader does not know why the study was done or ascertain the meaning of the results. “A string of results is not an answer,” Colston says gently. “It’s data, which is valuable, but readers must know what it means.”

The other sample has the proper elements, along with guide words. It moves from *Q* (“To investigate whether . . .”), to *Es* (“We injected . . .”), to *Rs* (“When examined . . .”; “In stark contrast, . . .”), to *As*. Two other sentences merely provide a background and at this stage are distractions. Colston advises that they be omitted, and, indeed, without them, the students agree that the prose is cleaner and stronger.

Colston’s emphasis on organization and structure is “exactly correct and very useful,” says one student, Robert B. Carrigan, M.D. ’99, G.M.E. ’04, assistant professor of orthopaedic surgery based at The Children’s Hospital of Philadelphia. “The writing process is somewhat laborious, and this

gives a nice framework to get things going in the right direction.”

When the junior faculty members are ready to submit their papers for publication, many face another black box: how to select the right journal, understand what the editors want, and respond to critiques.

For answers, ADVANCE offers “Insight from the Editors,” who, in a recent session, are: Steven D. Douglas, M.D., professor of pediatrics; David F. Dinges, Ph.D., professor of psychology in psychiatry and (among other appointments) vice chair for faculty affairs and professional development; and James H. Eberwine, Ph.D., the Elmer Holmes Bobst Professor of Pharmacology.

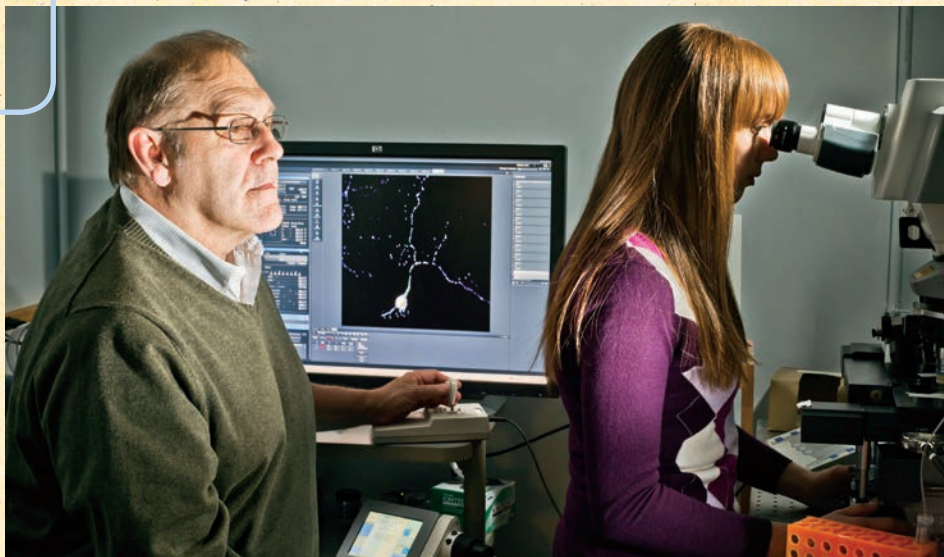
And what do editors want? First, good prose – advice that the panelists mention not once but three times: “[Poor writing] is the final kiss of death to a career. You must force yourself to write. . . . If you can write papers well, you can write grants well. . . . Pound away. Get it right.”

Other pearls: Should fall like a spring rain shower. Should young faculty aspire to prestigious journals? “Aim the highest.” What makes a journal stand out? “Whether it’s read by more scientists”; “impact factor” (regarded as an indication of the journal’s importance); the quality of the science it publishes; turnaround time; “career contingency” (i.e., the submitter needs a timely publication to support an impending grant proposal).

Is an introductory letter important? Generally no, except to assure the editor of exclusivity. Can I request a specific editor or reader? “Trust the process.” What is the role of open-access journals? “They are the future.” How can I challenge a rejection? “Be non-confrontational.” Do negative findings have a place? Yes, but they are hard to get published in top journals.

Should I coauthor with industry? “You can’t eliminate every potential conflict of interest, but you can disclose it.” What





One of the senior faculty members who provided “Insight from the Editors” is James H. Eberwine, Ph.D., shown here with Jacqueline Morris, a doctoral candidate in pharmacology.

should be submitted? A paper with “gravitas” rather than merely a “slice” of research. How do we order the authors’ names on our paper? “It’s an art more than a science”; consult your mentor. How do I deal with “variants” in the data? “Be scrupulously honest. What’s the point of doing science if you’re not going to do it in a brutally honest way? Why would you waste your time in such a hideously difficult field? So do the right thing at all times.”

And what does the younger faculty say they gain from this course? Some replies from ADVANCE’s surveys: a sense of “how the whole process works from the reviewers’ perspective”; that they “feel OK to reach out to editors”; that they now have “good insight into difficult-to-obtain information.”

ADVANCE advancing

ADVANCE draws 90 percent of its panelists and teachers from the medical faculty, who admire the supportive environment afforded their new colleagues. Mulhern sums up what she hears from them: “We wish we could have had something like this, but we didn’t know, we just went blindly along.”

She then notes: “The faculty who say that sort of thing – we count on them to

run these programs, as volunteers. They never turn us down, except for schedule conflicts.”

The program works closely with the vice chairs for faculty affairs and professional development, a new category of administrator that a growing number of departments have established, and with other Penn schools. It anticipates a close relationship with Penn Medicine’s vice dean for diversity and inclusion, a new post, filled this summer by Eve J. Higginbotham, S.M., M.D.

The program uses many means to reach its constituents: among them, classes visits to departmental meetings (where faculty may feel more comfortable airing issues, Mulhern says), one-on-ones, uploaded videos, webinars, e-mails.

It also provides links to other resources. For instance, from its web site, readers can access Penn-based material such as “Introduction to Clinical Research Methodology” or the University’s Center for Teaching and Learning; or go to external sites such as the N.I.H.’s for tutorials on grant applications.

Certain ADVANCE classes qualify for continuing medical education credit, but virtually all of them get high marks in FAPD surveys. The teachers generally

score 100-percent approval (top two of five categories), and the utility of the courses usually ranges from 70 to 85 percent, sometimes reaching 100.

Students frequently praise the teaching method. After taking the course on making effective presentations, a student wrote: “I really appreciated the format she used – having participants actually give a presentation and field questions. Very original and useful. I felt like I was doing a developmental program.” A postdoc couldn’t even wait until she needed Colston’s writing course to take it. She then remarked, “I don’t yet have a paper to work on, but I would love to come again when I have a draft of my own to submit.”

Lisa Bellini, M.D., G.M.E. ’90, a professor of medicine who serves as vice dean for faculty and resident affairs, is not surprised at ADVANCE’s reception. “It has diverse offerings for people with different interests,” she says, “and it is building up a lot of steam, judging by more and more people taking its courses.”

As Mulhern points out, it serves a genuine need: “People say, ‘It’s really hard here.’ Yes, it is. The bar is very, very high. You have to have a strategic plan, and it’s not intuitive. You have to have help doing that – and we have plenty of people around here who are happy to offer that help.”

Most of all, says Saunders, whose Faculty 2000 Project started it all, “it’s had the kind of influence that I would have hoped for. It’s created a sense that the institution cares. It may sound corny, but to me that was an important concept, almost more important than any of the content – that the place cares about you. You then gain an affinity, an affection, for the institution.” ■

Update: Rachael Berget has joined Cooper Medical School of Rowan University as director of Faculty Affairs and Educational Operations.

A DAY CAPTURED IN PHOTOGRAPHS

As part of a university-wide initiative on Tuesday, October 29, photographers turned their cameras on many different sites and many different people. Shooting for Penn Medicine were Rob Press, Daniel Burke, and Barry Ogburn. During the day, they captured early-morning scenes of an uncharacteristically empty hall in HUP and the exterior of Penn Medicine buildings before daylight, a nurse delivering care in the Penn Presbyterian Emergency Department, a visit by a “therapy dog” to Pennsylvania Hospital, and many more scenes.



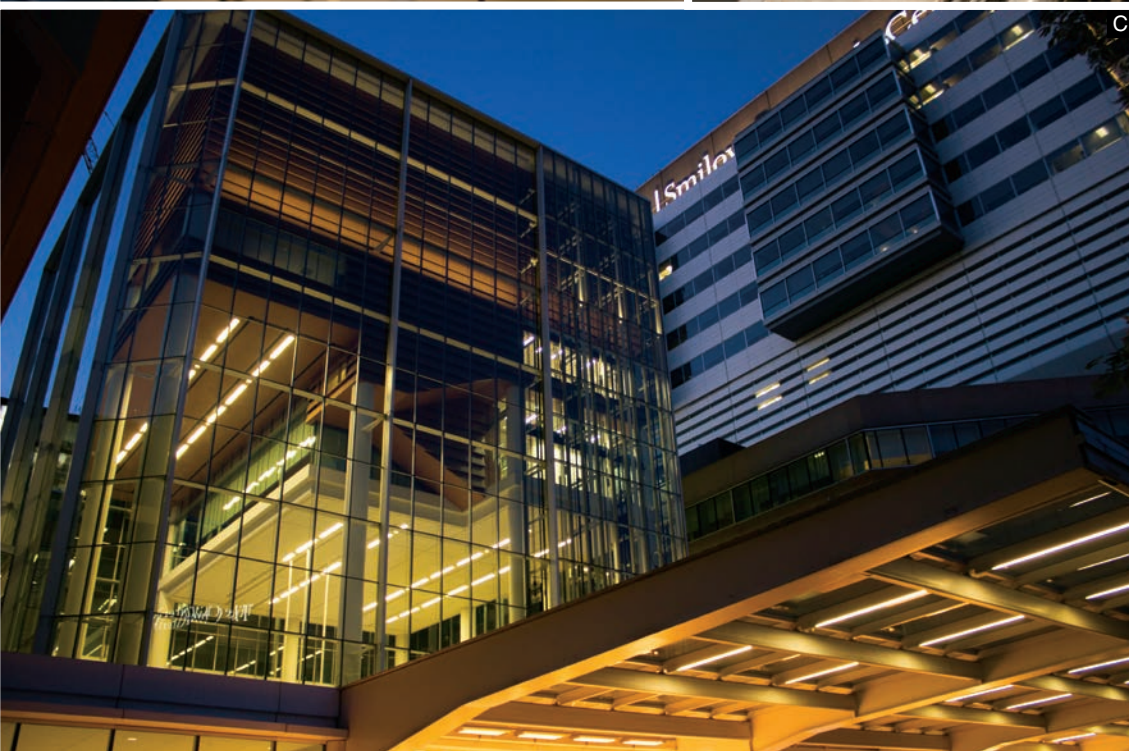
A



B



D



C

- A HUP, 6:30 a.m.
- B HUP's food services staff is at work very early in the morning.
- C The Perelman Center for Advanced Medicine.
- D Blood donation in Penn Tower.

**E****F****I****G****H**

E Senior officials of Penn Medicine meet.

F HUP Security.

G Penn Presbyterian's Emergency Department.

H Nine-week old Brooklyn Todd, dressed as a mouse in preparation for HUP's annual Halloween in the Intensive Care Nursery and Transitional Care Nursery.

I Passing through the Great Court of Pennsylvania Hospital.

J Undergoing Intense Pulse Light therapy at the Scheie Eye Institute.

K Work proceeds at the new Penn Medicine University City, which will add space to the Penn Presbyterian medical campus.

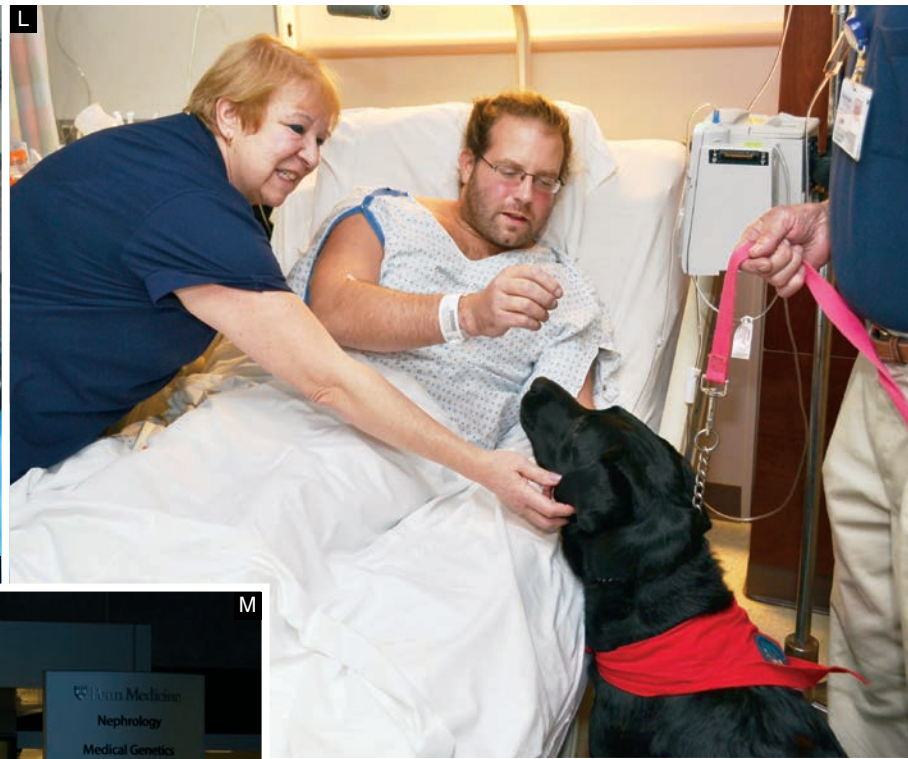
L Nicholas, a two-year-old Labrador Retriever and certified therapy dog, makes his weekly visit to patients at Pennsylvania Hospital.

M For some doctors and nurses, it's the end of a long day at 5:55 p.m.

N Mike Reid, M.D., of the Botswana-UPenn Partnership, conducts ward rounds at Princess Marina Hospital in Gaborone, Botswana.



J K



L

N



M

Sorry Seems to Be the Hardest Word

How can doctors deal with all the parties involved when there has been a medical mistake? A retired M.D. and active blogger has an answer.

By Jim deMaine, M.D. '64



Elton John and his lyricist Bernie Taupin had it right: “It’s sad, so sad. Why can’t we talk it over? Oh, it seems to me that *sorry* seems to be the hardest word.”

Mistakes are all too common in medicine, but can we say “the hardest word” when we’re involved?

Example 1: There’s a diagnosis of recurrent lymphoma in the ICU. The oncologist gives a phone order for cytoxan, prednisone, and vincristine. The recorder, working a double shift, mistakenly writes the vincristine daily for five days similar to

the prednisone order. The fatal dosage is given to the patient over the ensuing days. He dies in bone-marrow failure. The oncologist meets with the family and apologizes. A review is carried out. Systems are improved. There is no lawsuit.

Example 2: In a radiology department, instead of a dye, a cleaning solution is accidentally injected into a patient’s femoral artery, leading to a painful death. The hospital representatives and physicians promptly meet with the family, admit a mistake, and apologize. A financial settlement is offered and eventually accepted.

Example 3: A pharmacist fills a prescription for a patient with asthma. Instead of prednisone, the pharmacist mistakenly counts out digoxin, a pill given for heart disease. Digoxin can have severe side effects even at a dosage of one a day. The patient follows the prescription: take 8 a day for 3 days, 6 a day for 3 days, etc. The patient calls the M.D. about the symptoms of severe nausea and notes that the pills look different than usual. The medication is stopped and with treatment the patient is fortunate to survive digoxin poisoning. No apology is offered, and the patient loses confidence in the integrity



of his providers.

As we know, medical errors frequently hit the headlines. Magazine articles, such as “How American Health Care Killed My Father” (*The Atlantic*, September 2009), can be both thought provoking and provocatively accusatory. Stress and fatigue often play a role in the errors.

Medicine is a proud profession, with medical ethics at its core. But it’s also complex and fragmented. Atul Gawande, M.D., promotes improvements in standards of practice but implementing them is difficult. In attempts to control quality, medicine is highly regulated. Today doctors,

There comes a point when we all recognize that we’re “only human.”

nurses, pharmacists, and others can face hospital sanctions, medical disciplinary boards, media scorn, and threats of malpractice suits when they make mistakes. In most situations, a number of things have to go wrong at the same time for the mistake to occur. None of the exam-

ples cited above are my personal mistakes, but “I’ve been there, done that!”

When It Happens to You

On a personal level, it’s humiliating and devastating to be involved in a serious mistake. I sat down with a psychiatrist friend after a significant mistake and it helped to talk it out, but the hospital’s legal department had to be notified, affected family members met with, and eventual reports to the state dealt with – and all this is in the middle of a 60-plus-hour week. Fortunately I was not sued, but I was certainly worried.

There’s pretty good data now that fessing up is the best thing to do from a legal standpoint and certainly from the moral view. But, believe me, it’s not easy when you’d rather hide. When a patient died after a procedure that I probably shouldn’t have attempted because he was so sick, I sat down with the family and explained the whole sequence. The son had lots of questions but then looked reflective and said, “It must be hard to be a doctor sometimes. Look, it’s OK. Dad was going nowhere and he’s in a better place now.” Basically, he had let me off the hook.

On the prevention side, there’s convincing data from systems engineers (like Toyota and Boeing) that critical mistakes can often be prevented with good quality management and systems surveillance. All hospitals and major clinics have extensive quality control and review. The routines can be simple or complex. For example, for some recent eye surgery I had, I was asked my name and birth date three times by three separate people (even though they all knew me) as well as what operation I was having and on which side. These quality/safety techniques require constant review, updating, and reporting.

Hospitals are rated by procedures, and those quality ratings can be reviewed. For example, the hospital that does large numbers of carotid surgeries will almost

always have better outcomes and fewer mistakes than the hospital that only does a few. That finding brings into question the future role of the smaller hospitals. The issue is not so much mistakes as the inability to match the experience and quality of an institution that does large number of a complex procedure.

Honest Admissions

How do we deal with all the parties involved in a mistake (the patient, family, providers, institution, legal, insurer, etc.)? The answer is both simple and difficult – apologize! Dealing with mistakes honestly can have a beneficial effect. A good example is the tort reforms successfully instituted in the state of Michigan. In many states, a doctor’s initial discussion with the patient and family about a mistake is not discoverable in a lawsuit.

It is best for all involved to make a face-to-face apology! Sometimes one is forgiven, sometimes not. But if the animosity can be decreased, the parties involved can often reach a settlement after an

honest admission of a mistake. Involving the patient and/or loved ones in a case review with all present can be very powerful. It’s very hard to remain angry or want to punish someone who can look you in the eye and sincerely apologize, while sincerely listening to all your concerns. There comes a point when we all recognize that we’re “only human.”

Jim deMaine is a retired pulmonary/critical care doctor and emeritus clinical professor of medicine at the University of Washington. He worked for Group Health Cooperative in Seattle spanning 32 years and helped develop its program called “Your Life, Your Choices,” now offered to all its patients and families at age 65. His blog, “End of Life – Thoughts from an M.D.” (endoflifeblog.com), caught the attention of KUOW, the local National Public Radio station, which has had him on air several times to speak about end-of-life issues. A version of “Sorry Seems to Be the Hardest Word” first appeared on deMaine’s blog. ♣

Allowing Doctors to Apologize

In Dr. deMaine’s essay, he cites the tort reforms successfully instituted in the state of Michigan. Last month, Pennsylvania moved closer to joining the dozens of states that have made it possible for doctors and other medical professionals to apologize to patients without having their apologies used against them in medical liability lawsuits. Pennsylvania legislators in both House and Senate overwhelmingly supported a bill protecting apologies, and Governor Corbett announced that he would sign the bill. On the other hand, the bill would not protect admissions of negligence.

As Stuart H. Shapiro, president of the Pennsylvania Health Care Association / Center for Assisted Living Management,

told *The Philadelphia Inquirer*: “For years, providers have wanted to talk with patients after an unanticipated outcome to express empathy or explain what happened and why but have been afraid to do so because of fear of litigation.”

Sen. Pat Vance, R-Cumberland, a former nurse, was the prime sponsor of the new bill. She cited findings that similar protections have reduced the number of liability lawsuits and cut expenses for hospitals in other states. According to *The Pittsburgh Post-Gazette*, Vance explained that “sometimes an apology can dissipate some of that anger” that patients and families may feel after certain outcomes.

– John Shea

A Hero to Everyone But Himself

Diagnosed with amyotrophic lateral sclerosis at the age of 41, Scott A. Mackler, M.D. '86, Ph.D. '86, refused to acquiesce to the disease. With the help of family, friends, and caretakers, he continued to come to the Penn campus and to pursue his research on addiction.

Photograph by Chris Crisman

Scott A. Mackler, M.D. '86, Ph.D. '86, professor of medicine at the University of Pennsylvania Perelman School of Medicine and at the Philadelphia VA Hospital, died on Wednesday, November 13. Throughout a courageous 15-year battle with amyotrophic lateral sclerosis (Lou Gehrig's Disease) that left him confined to a wheelchair, needing a ventilator, and unable to speak, Mackler continued to teach and conduct research in his field, seeking to advance our understanding of addiction. In interviews and talks he gave during the last several years, Mackler would insist that "anyone could do what I've done."

But the communicating he did was through the elaborate "brain computer

interface" that appeared on a screen or issued in an automated voice or through the equally demanding and time-consuming process of shifting his eyes in response to questions. Despite Mackler's modesty, his family members and anyone who worked with him felt much differently. As Dr. Lynn Snyder-Mackler, his wife, told *60 Minutes* in 2008, "I think he's pretty brave." Two years later, when Mackler was awarded the Order of the First State, Jack Markell, the governor of Delaware, said, "It would be hard to imagine a more inspiring person than Dr. Scott Mackler."

Born on May 7, 1958, Mackler was raised in Bloomfield, N.J. He was passionate about athletics and played soccer as

an undergraduate at the University of Pennsylvania and afterward. He also completed both the Boston and New York City Marathons several times. But all that changed after ALS took over his body. He was diagnosed with the disease when he was 41 years old. What did not change was his intellectual drive.

In 1980, he received both a B.S. degree in physical therapy and a B.A. degree in biology from Penn, then earned his M.D. and Ph.D. degrees from Penn in 1986. After taking his internship and residency at University Hospital in Boston, Mackler returned to Penn as a postdoctoral fellow and a clinical fellow in general medicine. Starting as a research associate in the

Department of Medicine in 1992, Mackler spent the rest of his career at Penn Medicine, being named a full professor last year. He had secondary appointments in Psychiatry and Pharmacology and had been a member of Penn's Mahoney Institute of Neurological Sciences and the Center for Studies of Addiction.

As Lynn Snyder-Mackler told *The Daily Pennsylvanian*, "Penn was his heart. . . . It was the place where he learned. It was the place that nurtured him as a young investigator and nurtured him beyond belief as a disabled investigator." His wife, his older brother and sister, and both of his sons also earned degrees from the University of Pennsylvania.

During his academic career, Mackler received the Saul R. Korey Award in Experimental Neurology from the American Academy of Neurology; was a Pfizer Fellow in Neuroscience; and was named a Fellow of the American College of Physicians. Over the years, Penn's medical school honored him with the O. H. Perry Pepper Prize

NAC-1 interacts with other proteins and learned that laboratory rats with more of the protein are less likely to become addicted to cocaine. As Charles O'Brien, M.D., Ph.D., the Kenneth E. Appel Professor of Psychiatry and the founding director of Penn's Center for Studies of Addiction, explained when Mackler was awarded the Order of the First State, Mackler continued to be very productive in his research field despite having ALS. To treat addiction, said O'Brien, "we're always trying to get down to the molecular level so we can develop medications. Scott not only made extremely important advances in this very early on, but he continued to do so."

In recent years, Mackler would be driven from Newark, Del., in a specially equipped van to his laboratory on the ground floor of the John Morgan Building. The driver was his assistant Dana Crumpler Williams, a certified nursing assistant. He would make the hour-long drive there and then back four days a week. What compelled him was, in part, the fact that he could

One of his colleagues, Stephen Gluckman, M.D., professor of medicine, wrote in an e-mail message that the way Mackler "coped with his devastating illness was truly heroic." Despite all the obstacles, "he continued to go to work in his lab, attend conferences, and have a reasonably full life." In addition, Gluckman praised the entire Mackler family as "an amazing example for us all in dealing with an unimaginably difficult situation."

Governor Markell shared similar sentiments when he awarded Mackler with the Order of the First State: "I've seen him raise an incredible and loving family, but I've also seen him raise the bar for scientific research, raise the hopes of people worldwide with ALS, and raise the expectations of what is possible with grit, resilience, creativity, and love."

Years earlier, the Mackler family also seized the opportunity to help others in the ALS community. With friends, they established the Scott A. Mackler, M.D., Ph.D., Assistive Technology Program, designed to provide persons with ALS with access to assistive technology devices and services that are often not covered by insurance policies. The program is supported primarily by the Scott Mackler 5K Run/Walk, which began in 2000 and is held in Newark, Delaware. The event attracts more than 500 participants a year and so far has raised almost \$2 million.

Mackler is survived by his wife, Dr. Lynn Snyder-Mackler, a professor of physical therapy at the University of Delaware; sons Alexander and Noah; daughter-in-law Laura Mackler; brother Harvey Mackler; and sister Randi Windheim. The family also notes the immense support provided by his caregiver Dana Crumpler Williams; his nurses from Bayada Home Health Care; and "hundreds of members of Scott's crew, students, and friends who aided his incredible journey." ■

— John Shea

In 2010, when Scott Mackler was awarded the Order of the First State, Jack Markell, the governor of Delaware, said, "It would be hard to imagine a more inspiring person than Dr. Scott Mackler."

for a research paper; the Louis B. Flexner Prize for the best dissertation research in the neurosciences; and the Distinguished Lecturer Award for Outstanding Teacher in Addiction Medicine, which was renamed the following year as the Scott Mackler Award for Excellence in Substance Abuse Teaching.

Much of his research focused on a protein in the brain known as NAC-1. Mackler and his research team studied how

still communicate, as he told *60 Minutes*. Earlier this year, he explained his motivation more fully to *The Daily Pennsylvanian*: "I have no desire to slow down," he replied, dictating his responses to his wife through the eye-shift method. "I am a scientist. . . . I have fulfilling work."

In addition, Mackler would share his life's story with the medical school's first-year students, through an automated presentation that he had recorded.



Development Matters

CELEBRATE THE 250TH!

FOUR CAPITAL PROJECTS OFFER SPECTACULAR OPPORTUNITIES TO SUPPORT THE BEST IN MEDICINE

The standards of the best in medicine are constantly redefined. As the Perelman School of Medicine nears its 250th anniversary in 2015, four construction projects bring a once-in-a-lifetime chance to contribute and to link your name to the best places in medicine.

HENRY A. JORDAN M'62 MEDICAL EDUCATION CENTER to Open During Our 250th Anniversary Year

As Penn Medicine continues to expand its stunning urban campus, the Jordan Center will uniquely redefine 21st century medical education by integrating learning spaces with world-class research and patient care facilities. The new Center will encourage meaningful interactions with both research and clinical faculty mentors. Designed as a flexible, adaptable, state-of-the-art learning environment, the Jordan Center will fully support the way the Perelman School of Medicine students learn today.

This fall the Jordan Center reached an important milestone when the last structural beam was put in place. Many in the Penn community have long supported this project and were excited to see this progress. Penn Medicine faculty, students, donors, and staff, along with Penn President Amy Gutmann and Dean J. Larry Jameson, were among those

Large Seminar Room



who signed the final beam. They were joined by three generations of the Jordan family.

More than a dozen spaces have been named in the Jordan Center, representing the joint efforts of classmates, family members, and friends. "Naming a study area is a great way to com-

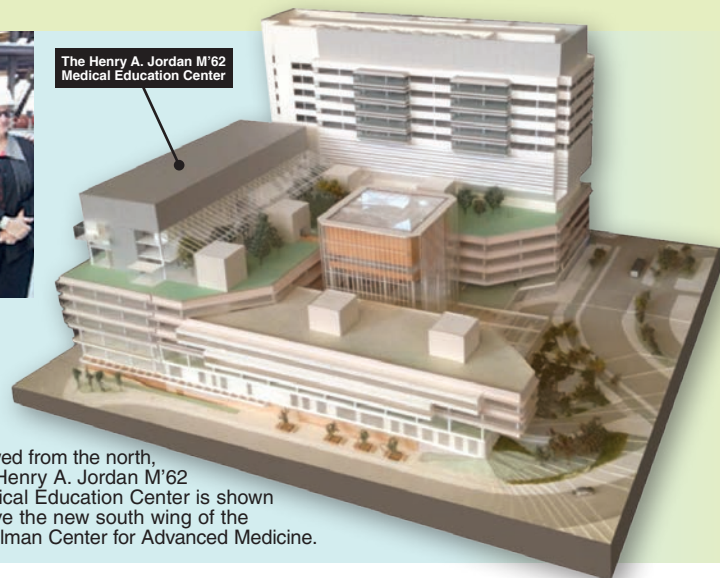
ALUMNI LEADERS ON TOUR

During their fall meeting, members of the Medical Alumni Advisory Committee took a hard-hat tour of the Jordan Center construction site. Martin S. Kanovsky, M.D. '78, G.M.E. '79, spoke for many with his reaction:



"Amazing. Unbelievable. Mind-boggling. It's breathtaking to see what Penn is doing to expand the frontiers of medicine and to consolidate patient care, research, and medical education under one roof."

The Henry A. Jordan M'62 Medical Education Center



Viewed from the north, the Henry A. Jordan M'62 Medical Education Center is shown above the new south wing of the Perelman Center for Advanced Medicine.



The new Benjamin and Mary Siddons Measey Learning Commons at the Center, funded by a generous \$3 million gift from the Measey Foundation, was celebrated by Foundation board members. With Senior Vice Dean Gail Morrison, M.D. '71, G.M.E. '76, from left to right: Stanley Goldfarb, M.D., Ronald M. Fairman, M.D., G.M.E. '84, Clyde F. Barker, M.D., G.M.E. '59, James C. Brennan, Esq., and Matthew S. Donaldson Jr. Esq.

memorate all the time you spent together in the classroom – and it felt very fitting to make such a gift for our 35th reunion,” said Lou Matis, M.D. '75.

Finding donors for the Center’s remaining naming opportunities is a fundraising goal during the next 18 months.

With a gift match available from the University of Pennsylvania Health System, the time is right to support this important project. Please don’t miss your chance to burnish your personal Penn legacy by giving to this one-of-a-kind medical education center.



Classroom

Right, the final beam is set in the highly anticipated, landmark Henry A. Jordan M'62 Medical Education Center. The Center, designed to foster dynamic collaboration, is physically connected to the Perelman Center for Advanced Medicine, the Roberts Proton Therapy Center, and the Smilow Center for Translational Research.

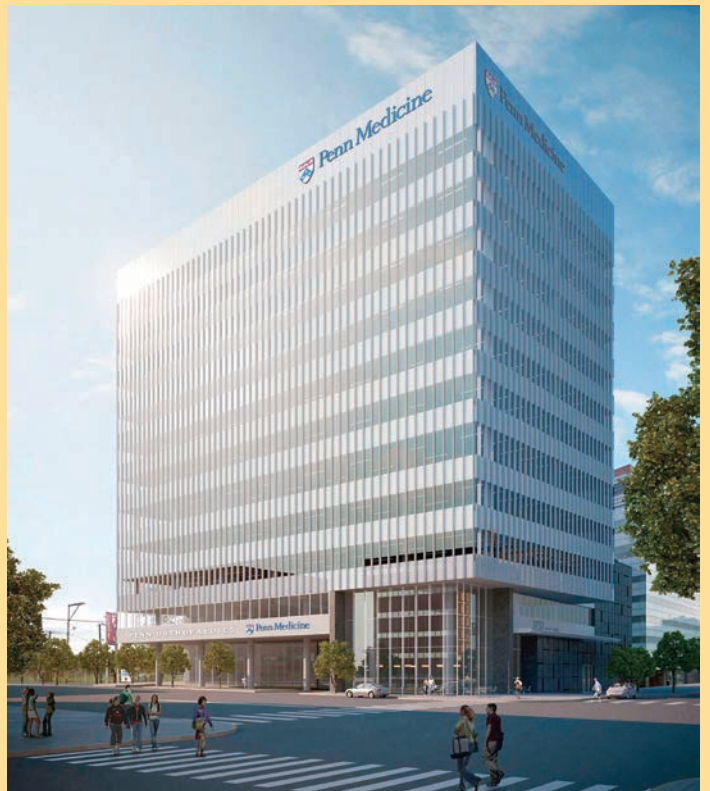


A NEW CORNERSTONE FOR ADVANCED PATIENT CARE AT PENN PRESBYTERIAN MEDICAL CENTER

Representing the first new construction at PPMC in 20 years, **Penn Medicine University City** and the **Pavilion for Advanced Care** will expand Penn Presbyterian’s award-winning services and enhance collaboration between physicians and specialists. These exciting new facilities signify bold steps for Penn Medicine.

PENN MEDICINE UNIVERSITY CITY Integrated, Convenient Outpatient Care

Opening this year, Penn Medicine University City will be an 11-story tower, located at the corner of 38th and Market Streets. Anchored by the expansion of Penn Surgery, Neurology,



Penn Medicine University City as it will appear on the southwest corner of 38th and Market Streets.

GIVING INFORMATION

You can join us in our drive to enhance medical education, research, and patient care by supporting any or all of these exciting projects.

To learn more or to make a gift today, visit PennMedicine.org/giving, call (215) 898-0578, or send your check made out to the “Trustees of the University of Pennsylvania” to:

**Penn Medicine Development & Alumni Relations
3535 Market St., Suite 750, Philadelphia, PA 19104-3309**



Development Matters

and the Penn Musculoskeletal Institute, the building will feature a convenient array of streamlined, integrated outpatient services for patients across the Greater Philadelphia region.

The state-of-the-art building will feature more than 150,000 square feet of outpatient care and surgical space and include nearly 110 exam rooms, six outpatient operating rooms, and an outpatient radiology center. With multiple departments under the same roof, physicians will be better able to deliver complementary services – often in the same visit.



PPMC's Pavilion for Advanced Care, to be located at 38th Street and Powelton Avenue.

PAVILION FOR ADVANCED CARE:

More Technology, More Capacity, Better Outcomes

Next year, Penn Presbyterian's Pavilion for Advanced Care will become the new home of Penn Medicine's expanded surgical critical care and Regional Resource Level I Trauma Center. This new 178,000-square-foot building will deliver technology upgrades, improve access, and offer significantly increased capacity for emergency, surgical, and critical care patients.

Minutes matter in an emergency. The Pavilion's design creates a "nucleus of care" that allows patients to shift seamlessly from one stage of care to the next, and critically injured patients will be evaluated and stabilized in a new high-technology trauma resuscitation area. In addition, the 20-bed critical-care unit will improve care for critically ill medical cardiac patients, as well as postoperative cardiac surgical patients, by facilitating even closer interactions between medical, surgical, and critical-care specialists.

“Penn Presbyterian is well known for providing outstanding specialty care coordinated with excellent, comprehensive primary care – and training our future physicians to be compassionate, driven leaders in the field. These welcoming new facilities will enhance our ability to deliver exceptional medical care, accelerate clinical research, and, importantly, add many layers of convenience for our patients.”

– Jack Ende, M.D., Former Chief of Medicine, Penn Presbyterian Medical Center
Assistant Vice President, University of Pennsylvania Health System
Assistant Dean, Perelman School of Medicine
Schaeffer Professor in Medicine, Perelman School of Medicine

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PUENTES DE SALUD:

A New Bridge to Health on South Street

Puentes de Salud, or “Bridges of Health,” a volunteer organization served by many Penn Medicine students and faculty members, provides greatly needed medical services to Philadelphia’s growing Latino immigrant population. Puentes de Salud has been able to fulfill its mission despite extremely limited financial resources, very basic office space, a single full-



The current view (inset) of the southwest corner of 17th and South Streets, and a rendering of the structure renovated as Puentes de Salud.

time employee, and unfavorable geography: its medical, dental, educational, and afterschool services are distributed across the City of Philadelphia.

A new dedicated community health and wellness center will allow Puentes de Salud to overcome all of those challenges, as well as expand its health clinic hours, vital medical services, and new educational programs. Located at 1700 South Street – the former IT headquarters for Graduate Hospital – the 6,600-square-foot center will feature:

- A patient waiting area designed especially for families
- Clinical spaces, exam rooms, and private consultation rooms
- ADA-accessible restrooms
- Dedicated lab and dental areas
- Combined procedure room and ophthalmological area
- Single-level education and computer room
- Conference room
- Kitchen and staff lounge



CALENDAR OF EVENTS

Please visit alumni.med.upenn.edu/calendar or call 215-898-0578 for more information.

Academy of Master Clinicians Celebration

Tuesday, February 11, 5:30 p.m.

Location TBD

Dermatology Reception

Saturday, March 1

Hyatt Regency Denver

Denver

Penn Medicine in Palm Beach 2014

Monday, March 3, 2:00 p.m.

Norton Museum

Palm Beach, Fla.

OBGYN Reception

Saturday, April 26

Chicago

Medical Alumni Weekend

May 16-18, 2014

SELECTED RECENT MAJOR GIFTS

The Abramson Family Foundation continues its distinguished tradition of philanthropy to Penn Medicine with a recent gift of \$4.26 million to benefit cancer research at the Abramson Family Cancer Research Institute.

Four **Law** brothers, **Dennis, C '69, M.D. '73, Ronald, C '71, M.D. '75, Christopher, C '78, M.D. '82, and Jeremy, M.D. '86, Par '14**, have pledged \$3 million to name the Joseph and Loretta Law Auditorium in honor of their parents. The Law Auditorium will be a prominent feature in the Henry A. Jordan M'62 Medical Education Center.

Mr. John J. Rooney pledged \$1 million to establish the Rooney Family Bipolar Disorder Research Fund and the Fight HIV Stigma Research Fund. These funds will provide financial support to bipolar disorder research and to the development and implementation of a focused comprehensive conceptual framework addressing HIV stigma, with the ultimate goal of implementing interventions that will improve clinical outcomes, mental health, and overall wellness and quality of life.

Mr. Hansjörg Wyss pledged \$3.25 million to establish the Hansjörg Wyss Fund for Orthopaedic Genomics and Immunology. This gift will provide financial support for projects that emphasize the role of genomics and immunology in orthopaedic surgery, ensuring opportunities to revolutionize orthopaedic trauma surgery and limb reconstruction.



Progress Notes

Send your progress notes to:
Donor Relations
Penn Medicine Development
and Alumni Relations
3535 Market Street, Suite 750
Philadelphia, PA 19104-3309

'70s

Richard H. Goodman, M.D. '76, Ph.D. '76, internationally known for his pioneering research on gene regulatory mechanisms, received the 2013 Distinguished Graduate Award, the highest honor the Perelman School of Medicine bestows upon graduates. At Oregon Health and Science University, he is the director and senior scientist of the Vollum Institute and holds professorships in the departments of medicine, biochemistry and molecular biology, and cell and developmental biology. Goodman has led the Vollum Institute to international recognition as a leading center for neurobiological research.

The major focus of Goodman's research is on determining how extracellular and intracellular signals are integrated to control the onset and level of gene expression. He is credited with discovering the cAMP-regulated enhancer, a critical control element in many genes expressed in the nervous system and other tissues. Goodman is also known for discovering the CREB Binding Protein (CBP), the first example in multicellular organisms of a transcriptional co-activator.

After graduating from Penn's medical school, Goodman continued his medical and research training at Tufts-New England Medical Center and Massachusetts General Hospital, where he specialized in molecular endocrinology. At Tufts, he directed the Molecular Medicine Division, one of the first such programs in the nation. Goodman has been elected to the National Academy of Sciences and the Institute of Medicine.

Kevin H. Mosser, M.D. '79, who has served as executive vice president and chief operating officer of WellSpan Health since 2010, will become president and chief executive officer in October. He will be the first physician to serve as president of the Central Pennsylvania health system.

'80s

David A. Mankoff, M.D. '88, Ph.D. '88, has joined Penn Medicine's Department of Radiology as chief of nuclear medicine and clinical molecular imaging. His doctoral degree from Penn is in bioengineering. Most recently, Mankoff was an attending physician at the University of Washington and its affiliated hospitals. He has focused much of his research on developing and translating novel molecular imaging approaches to characterize cancer and its response to therapy. Among his honors is the Distinguished Scientist Award, presented by the Western Regional Society of Nuclear Medicine.

David Horvick, M.D., G.M.E. '89, a board-certified radiation oncologist, has joined 21st Century Oncology and now treats patients at the network's locations throughout the Southern New Jersey area. Horvick is former director of the radiation oncology division at Abington Memorial Hospital. While there, he took part in residency training programs for the Hospital of the University of Pennsylvania and for Drexel-Hahnemann University Hospital. He held faculty appointments at both institutions.

Mark J. Shlomchik, M.D. '89, Ph.D. '89, was named chair of the Department of Immunology at the University of Pittsburgh School of Medicine. He had been adjunct professor of laboratory medicine and professor of immunobiology at Yale School of Medicine and associate director of its transfusion service. A researcher renowned for his contributions to the understanding of the autoimmune disease systemic lupus erythematosus, Shlomchik will work closely with other entities in the medical school that focus on various aspects of immunology, including the Thomas E. Starzl Transplantation Institute, the Center for Vaccine Research, and the University of Pittsburgh Cancer Institute. In June, he was the first recipient of the Lupus Insight Prize. The prize is a collaborative initiative among the Alliance for Lupus Research, the Lupus Foundation of America, and the Lupus Research Institute to recognize and honor an outstanding investigator whose research efforts have a high likeli-

hood of generating further advances in understanding the causes, biology, treatments, or cure of lupus.

'90s

Seth A. Rosenthal, M.D., G.M.E. '91, a radiation oncologist at Radiological Associates of Sacramento, was recently elected to the Board of Chancellors of the American College of Radiology and named chair of its Commission on Radiation Oncology. A fellow of the College, Rosenthal is active in clinical research in oncology through the Radiation Therapy Oncology Group, particularly in the area of prostate cancer. He is the author or co-author of 70 scientific papers and multiple book chapters and is certified in radiation oncology by the American Board of Radiology.

Jeannie T. Lee, M.D. '93, Ph.D. '93, received the 2013 Distinguished Graduate Award, the highest honor the Perelman School of Medicine bestows upon graduates. She is widely recognized for her groundbreaking insights in the emerging field of epigenetics, which seeks to understand inherited changes in gene expression that do not result from changes in the primary genetic code. According to the National Academy of Sciences, Lee's study of the molecular-level biology of X-chromosome inactivation has yielded "contributions to our understanding of epigenetic regulation on a global scale." Lee's overarching goal is to apply scientific principles to better understand epigenetic regulation by long non-coding RNAs and to understand some of the fundamental differences between women and men and how genes are controlled in the body. To these ends, she uses X-chromosome inactivation as a model system.

A professor of genetics at Harvard Medical School, Lee has a joint appointment as professor of pathology and molecular biology at Massachusetts General Hospital in Boston. She is also an investigator for the Howard Hughes Medical Institute. After taking her pathology residency at Massachusetts General, Lee was research fellow at the Whitehead Institute of MIT. She joined the Harvard faculty in 1998.

Lee received the annual Pew Scholar Award in Biomedical Sci-

ence from 1999 to 2003; was selected by the National Academy of Sciences in 2003 as one of 25 multidisciplinary scientists under the age of 45 to participate at the "Frontiers in Science" conference in Irvine, Calif.; and received the 2010 Molecular Biology Award from the National Academy of Sciences for advancing the understanding of the emerging field of epigenetic regulation by long non-coding RNA (lncRNA).

'00s

Douglas C. Fisher, M.D. '03, was promoted to partner at InterWest, which provides venture capital to early-stage companies specializing in life sciences and information technology. Since joining in 2009 as a principal, Fisher has focused on investments in molecular diagnostics, biotechnology, and medical devices. In 2012, he sourced and led new investments in Sera Prognostics and Obalon Therapeutics, where he represents InterWest on the board. In addition, he is on the boards of other companies.

Paige M. Porrett, M.D., Ph.D. '08, G.M.E. '10, has joined Penn Medicine as an attending surgeon at HUP and an instructor in surgery. Her Ph.D. degree is in immunology. Her clinical areas of expertise include abdominal organ transplantation and vascular access surgery, and her research interests include regulatory T cells and the immunologic barriers to transplantation tolerance posed by T cell memory and inflammation.

'10s

Derek J. Donegan, M.D., G.M.E. '11, has joined Penn's Department of Orthopaedic Surgery as an assistant professor in the division of orthopaedic trauma. He earned his M.D. degree at Jefferson Medical College, where he graduated magna cum laude and was elected to Alpha Omega Alpha. He also received the Deforest Williard Most Outstanding Resident award when he completed his residency at Penn Medicine. His clinical interests include pelvic and acetabular trauma, reconstructive arthroplasty, and post-traumatic deformity.

OBITUARIES

'30s

Elias M. Solomon, M.D. '34, Lancaster, Pa., retired chief of the medical staff at the former St. Joseph's Hospital; September 6, 2012. During World War II, he was a captain in the U.S. Army, attached to the 297th Engineer Battalion. He took part in five major campaigns. Solomon was a general practitioner in Lancaster for 60 years.

Edgar L. Dessen, M.D. '39, Jupiter, Fla.; May 22, 2013. He entered the Army in 1941 and attained the rank of lieutenant colonel. For part of that time, he served in the Africa-Middle East Theater of Operations. A retired radiologist, he was a fellow of the American College of Radiology and had served as chairman of its Task Force on Pneumoconiosis. He had also been president of the Pennsylvania Radiological Society. Founder and former chairman of CAN DO Inc., an industrial development organization in the Hazleton, Pa., region, he had been an alumni trustee of the University of Pennsylvania and a member of its Commonwealth Relations Council.

'40s

Selma E. Snyderman, M.D. '40, New York, N.Y., a pioneer in the treatment of inborn errors of metabolism; October 25, 2012. She spent almost 50 years on the pediatrics faculty of the N.Y.U. School of Medicine. In 1995, she was recruited to the Mount Sinai School of Medicine, where she was a professor of human genetics and of pediatrics. An internationally recognized pioneer in pediatrics, Snyderman was the first in the United States to research treatment options for phenylketonuria (PKU), a genetic metabolic disorder that affects one in 15,000 infants. Her innovative research paved the way for the treatment of other metabolic disorders, including the first successful treatment of maple syrup urine disease, a previously fatal disorder, and homocystinuria. She established the Metabolic Disease Center at Bellevue Hospital. In her career, she published more than 200 papers and

60 book chapters. A former president of the Society for Inherited Metabolic Disorders, she received the Borden Award of the American Academy of Pediatrics and the Career Scientist Award from the Health Research Council of the City of New York. In 1997, she was named the Inaugural Physician Honoree of the Genetic Disease Foundation. In 2004, she received the Distinguished Graduate Award, the highest honor presented to alumni by the Perelman School of Medicine. She was cited for "her extraordinary work in the field of pediatrics and her contributions to the study of genetic metabolic diseases." Snyderman is survived by her husband of 73 years, **Joseph Schein**, M.D. '41.

Robert M. Shelly, M.D. '41, Palm Coast, Fla., a retired pediatrician; March 8, 2012.

Richard B. Eisenberg, M.D. '42, G.M. '53, Erie, Pa.; March 1, 2013. He served in the U.S. Army as a medical officer in Europe, with the 90th Infantry Division. He was clinical director and vice president of Regional Clinical Laboratories of Northwest Pennsylvania (now Associated Clinical Laboratories). He served as chief of pathology at Saint Vincent Health Center, as president of the Saint Vincent Health Center medical staff, and as president of the Erie County Pennsylvania Medical Society.

Klaus H. Huebner, M.D. '42, Northeast Heights, Md.; February 15, 2013. After serving with the U.S. Army in Italy in WWII, he was a longtime family physician, first in North East, Md., and then at the Perry Point Veterans Hospital in Perryville, Md.

Herman S. Belmont, M.D. '43, G.M.E. '47, Elkins Park, Pa.; April 20, 2013. He served in WWII as an Army captain. He became the first professor of child psychiatry and director of child psychiatry at Hahnemann Medical College and Hospital and was one of the founders of Hahnemann's learning-disability institute. In the early 1960s, he introduced his Institute for Learning, a multidisciplinary approach to the diagnosis and treatment of attention-deficit disorder, dyslexia, and other disorders that can affect the young. He was instrumental in creating an integrated

program for providing comprehensive psychiatric and mental-health services to pediatric patients. He cofounded what is now the Department of Psychiatry at the Drexel University College of Medicine.

Ralph L. Pipes, M.D. '43, G.M.E. '47, Ormond Beach, Fla., retired chief of radiology at Hialeah Hospital; May 21, 2012. During World War II, he served in the U.S. Marines.

Edward Gosfield Jr., M.D. '44, G.M. '48, Philadelphia, a retired cardiologist who had taught at Penn's Graduate School of Medicine and at its School of Medicine; April 25, 2013. He served in the medical corps of the Army as captain and was acting commanding officer at the station hospital at Fort Eustace, Va. When Queen Elizabeth II visited the United States in 1976, he was designated as her attending physician. He

David Y. Cooper III, M.D. '48, G.M.E. '55, emeritus professor in the Department of Surgery and a longtime researcher in its Harrison Department of Surgical Research; August 2, 2013. Cooper published extensively on the role of cytochrome P-450, which is involved in drug metabolism and bioactivation. In the course of his investigations, he designed an anaerobic cuvette for use in carrying out spectrophotometric studies of P-450. He also studied the role of various steroids as causative agents of endocrine hypertension.

While a college student, Cooper entered the United States Naval Reserve and served two years of active duty, 1943-45. In 1946 he entered Penn's medical school and earned an M.D. degree two years later. He returned to active duty with the Naval Reserve 1949-1952. He was a resident in surgery at HUP (one of the last chief residents under the legendary chair of surgery I. S. Ravdin) while also serving as a resident and fellow at the Harrison Department of Surgical Research. He was appointed to the faculty of the Harrison Department. In 2004, he was named an emeritus professor.

Cooper was active in alumni matters. He served many years as the class agent of the Medical

founded the hypertension clinic at Graduate Hospital in 1957 and was chief of the clinic until 1980. Elected twice as chairman of the hospital's medical board, he also served as associate chairman of Graduate's Department of Medicine. Gosfield was a fellow of the American College of Cardiology and a member of the College of Physicians of Philadelphia.

Ralph E. Teitgen, M.D. '44, Fox Point, Wis., a retired ophthalmologist; November 21, 2010. He served in the U.S. Army and achieved the rank of captain. He earned a fellowship in ophthalmology from the Mayo Clinic in Rochester, Minn., and received his M.S. degree in ophthalmology from the University of Minnesota. He had been an associate clinical professor of ophthalmology at the Medical College of Wisconsin and served on the board of directors of Prevent Blindness Wisconsin.

Class of 1948 and was a recipient of the Alumni Service Award. In 1986, he delivered the Carl F. Schmidt Honorary Lecture, sponsored by Penn's Department of Pharmacology. One of Cooper's most notable achievements was *Innovation and Tradition at the University of Pennsylvania School of Medicine: An Anecdotal Journey* (1990). The book, written with Marshall A. Ledger, Ph.D., then editor of *Penn Medicine* magazine, was published by the University of Pennsylvania Press at the time the medical school celebrated its 225th anniversary. In his preface, Cooper wrote: "What I thought would be a relatively easy task soon became a complex one, for I soon found that, in addition to the many scientific contributions made by the faculty, the School of Medicine had a history that was richer and more distinguished than I or anyone I talked with realized." According to Ledger, the research was fully Cooper's.

Cooper belonged to several professional organizations, including the American Association for the Advancement of Science, the American Society of Chemists, the New York Academy of Science, and the College of Physicians of Philadelphia.



Celestino Clemente, M.D. '45, G.M. '49, Glen Ridge, N.J.; April 21, 2013. He was commissioned as a lieutenant in the U.S. Navy and was honorably discharged. Starting as a surgical resident at the United Hospitals of Newark in 1953, he remained there for 35 years, rising to senior vice president of medical affairs and chief of staff. He also worked at other New Jersey hospitals. He helped spearhead the creation of the Roseland Surgical Center, the first freestanding ambulatory surgical center in New Jersey. In 1957, he became a fellow of the American College of Surgeons and was an associate clinical professor at University of Medicine and Dentistry of New Jersey in the 1970s. A fellow of the International College of Surgeons, he had served on committees of the National Institutes of Health.

Llewellyn W. Hunsicker, M.D. '46, G.M. '51, Montrose, Pa., a retired surgeon at the Pocono Medical Center; September 14, 2012. As a captain in the medical corps, he served in the U.S. Army of Occupation in Japan (1947-49). He was a fellow of the American College of Surgeons.

Charles F. Snyder, M.D. '46, G.M. '57, Bethlehem, Pa.; April 2, 2013. He served in the U.S. Army from 1943 to 1952 and was a battalion commander for the 25th Medical Battalion in the Korean War from 1950 to 1952. He was awarded numerous service medals, including the Purple Heart and Bronze Star. He was chief of orthopaedics at St. Luke's Hospital from 1971 to 1988 and was later chief of surgery at Muhlenberg Hospital.

David D. Kirkpatrick Jr., M.D. '47, Meadville, Pa., a retired physician; April 21, 2013. He served in the U.S. Navy from 1948 to 1950 and was later recalled to serve as a ship's physician in the Destroyer Division (1953-1954). He went on to help establish the Meadville Area Free Clinic and served as medical director there until 2008.

Stanley B. Reich, M.D., G.M. '47, Piedmont, Calif., former professor of radiology at the University of California, San Francisco; August 6, 2012. He served as a physician

in the U.S. Navy in World War II and the Korean War. He had been chief of radiology at Mount Zion Hospital. A fellow of the American College of Radiology, he was a founding member of the Society of Thoracic Radiology.

John B. Logan, M.D. '48, Camp Hill, Pa., a retired psychiatrist; May 22, 2013. During the Korean War, he was stationed in Japan as a captain in the Army Medical Corps. In 1974, he was named superintendent and later served as chief of staff at Harrisburg State Hospital.

Herbert E. Weisberg, M.D. '48, Waterbury, Conn., a radiologist retired from private practice; April 5, 2013. He had been chief resident at Hartford Hospital. After serving in the U.S. Navy as a radiologist at the Portsmouth Naval Hospital in Virginia, he was honorably discharged with the rank of lieutenant commander. A diplomate of the American Board of Radiology, he was a former president of the Waterbury Medical Association and the New Haven County Medical Association.

Clayton J. Vandiver, M.D. '49, Johnson City, Tenn., a retired anesthesiologist who had maintained a practice there for many years; August 11, 2012.

'50s

John Richard Green, M.D., G.M. '50, Independence, Mo.; March 14, 2013. He did a tour of duty with the U.S. Navy, serving as a lieutenant. He was stationed in England and took part in the invasion of Normandy. Following the war, he taught anatomy at the University of Pennsylvania. Upon completing his surgical education, he returned to Independence, where he established his solo surgical practice. He had been president of the medical staff at Independence Regional Health Center and at the Medical Center of Independence and was an associate professor of surgery at University of Missouri-Kansas City Medical School.

Louis Wiederhold III, M.D. '50, Bar Harbor, Maine, retired chief of medicine at Monadnock Community Hospital; September 16,

2012. He was a charter member and president of the New Hampshire Chapter of the Academy of Family Physicians and had been a longtime member of the Francistown Volunteer Fire Department.

Charles R. Keller, M.D. '51, G.M. '55, Hilton, N.Y., a retired family practitioner; October 14, 2012. He had served in the U.S. Navy and the Air Force in the 1950s.

Neal C. Hamel, M.D., G.M. '52, Los Angeles, a retired cardiothoracic surgeon; April 15, 2013. He was honorably discharged from the U.S. Army as a captain in 1949. He practiced primarily at Valley Presbyterian Hospital, where he served as chief of the medical staff in 1976. He was part of a team that performed the first open heart surgery in the San Fernando Valley and was a founding member of the Society of Thoracic Surgeons. An accomplished private pilot, he was a flight doctor for the Federal Aviation Administration.

Charles A. Ritchie, M.D. '52, Bryn Mawr, Pa., a retired obstetrician; March 9, 2013. In 1943, he joined the U.S. Army and was honorably discharged in 1946. In 2002, he was honored for 50 years of distinguished service by the Pennsylvania Medical Society and the Delaware County Medical Society. He had staff privileges at St. Vincent's Hospital, Mercy Fitzgerald Hospital, and Delaware County Memorial Hospital.

Constantine Z. Moraitis, M.D., G.M. '53, Pleasant Hills, Pa., a retired ophthalmologist; October 10, 2011.

Frederick W. Rook, M.D., G.M. '53, Springfield, Va., a retired orthopaedic surgeon; June 9, 2012. He served as a captain in the Royal Canadian Army Medical Corps during World War II. A fellow of the American Academy of Orthopedic Surgery, the International College of Surgeons, and the Academy of Medicine at the University of Toronto, Rook was also a former president of the Virginia Orthopedic Society.

Alfred Mayer Sellers, M.D., G.M.E. '54, Gladwyne, Pa., a retired professor of cardiology at

Penn and pioneer in the treatment of high blood pressure; May 16, 2013. He was a combat medic in the 4th Armored Division, part of Gen. George S. Patton's 3rd Army in World War II. He became clinical assistant professor of medicine at the University of Pennsylvania in 1959 and clinical associate professor of medicine in 1966. From 1975 until his retirement in 2008, he was associate professor of medicine at Penn and served for 10 years as chief of the Hypertension Unit. He was a member of a team at Penn in the 1950s that developed a surgical procedure – bilateral adrenal-gland removal – that proved to be lifesaving for patients with malignant hypertension. He published more than 60 articles in medical journals, and he estimated that he had seen 10,000 patients in his nearly 60 years of practice – all at Penn.

Victor I. Markson, M.D., G.M. '56, New York, N.Y., a retired physician; August 15, 2012. Formerly of Beaver Falls, Pa., Markson had been on staff at the Albert Einstein Medical Center in Philadelphia, where he worked on preliminary studies of anticoagulant drugs. He had been president of the medical staff of the former Providence Hospital in Beaver Falls and the Beaver County Medical Society.

Phillip James Moore, M.D., G.M. '56, Grand Ledge, Mich., retired medical director of the Shiawassee County Medical Care Facility and an assistant clinical professor of medicine at Michigan State University; October 13, 2012.

Alvin M. Siegler, M.D., G.M. '58, Boca Raton, Fla., a retired physician; May 4, 2013. An emeritus professor of obstetrics and gynecology at SUNY Health Science Center in Brooklyn, N.Y., he was a pioneer in gynecologic endoscopy. He was co-author of seven books, primarily on the use of endoscopy in gynecologic surgery. He was among the first physicians to use the hysteroscope to search for abnormalities within the uterus and introduced the technique to China in 1980. He had been president of the American Association of Gynecologic Laparoscopists, the New York Obstetrical Society, and the Fallopius International Society.

J. Paul Wingert Jr., M.D. '59, Stuart, Fla.; March 22, 2013. He joined the U.S. Air Force in 1948 and served as a first lieutenant. Afterwards, he returned to Altoona, Pa., to practice internal medicine until his retirement.

'60s

Robert G. Trout, M.D., G.M. '60, Bryn Mawr, Pa., chief of thoracic surgery at the old Presbyterian Hospital from 1962 to 1987; March 4, 2013. He served in the Navy Reserve from 1942 to 1949. As a medical officer during the Korean War, he took part in the landing at Inchon and was awarded several medals. With two other doctors, he founded a practice in thoracic surgery practice that later moved to Presbyterian. There, he helped pioneer a procedure called mitral commissurotomy, in which tiny cuts are used to break up calcification of the mitral valve. He was the author of *The Practical Evaluation of Surgical Heart Disease* (McGraw-Hill, 1959). He also designed some of the earliest heart-lung machines and, in 1963, performed one of the earliest dual valve replacements using artificial heart valves. Trout received both the Billings Gold Medal and the Bronze Medal from the American Medical Association. He was a founding member of the Society of Thoracic Surgeons, the Pennsylvania Association for Thoracic Surgeons, and the Philadelphia Academy of Cardiology.

Lewis V. Kost Jr., M.D. '61, Garnet Valley, Pa.; March 20, 2013. He completed his urologic surgical training at Harrisburg and Philadelphia General hospitals and practiced urology in the Harrisburg area for 25 years. He served on the East Pennsboro school board from 1979 to 1983.

Veerasamy S. Naiken, M.D., G.M. '62, Lansdowne, Pa., June 24, 2011. He had been a pathologist at the Southern Division of Albert Einstein Medical Center at Fifth and Reed Streets from 1957 until he retired in 1987. He was born on the Indian Ocean island of Mauritius and won a scholarship to the University of Leeds School of Medicine in England and qualified as a physician in 1955.

Theodore N. Smith, M.D., G.M.E. '62, Fayetteville, N.Y., June 5, 2011. He took his ophthalmology residency under Harold G. Scheie. From 1965 to 1995, Smith was director of the glaucoma service at SUNY Upstate Medical Center, where he had earned his M.D. degree.

Bruce E. Brown, M.D. '63, Wellborn, Fla., a radiologist; November 4, 2012.

Gibbons G. Cornwell III, M.D. '63, G.M.E. '69, Lebanon, N.H., a retired professor of pathology and medicine; February 3, 2013. He spent four years in the U.S. Air Force, where he was trained to fly F86F jets. In 1967, he joined the faculty of Dartmouth Medical School, spending two years as a research fellow in biochemistry before joining the Department of Hematology. He served as acting dean of the Dartmouth Medical School and as acting medical director at Dartmouth Hitchcock Medical Center. During the more than forty years he lived in Lyme, he served on its school board and budget committee and was the town's health officer and chaired the Lyme Foundation. He developed three computer-based animated interactive programs for second-year Dartmouth medical students.

William H. Green, M.D. '64, Springfield, Pa., a retired radiologist; February 16, 2013. During the Vietnam War, he was a lieutenant commander in the U.S. Navy and served as chief of cardiovascular radiology at St. Albans Naval Hospital in New York. A fellow of the American College of Radiology, he had been president of the Pennsylvania Radiological Society and the Philadelphia Roentgen Ray Society. Green was the first interventional radiologist in Delaware County and spent 21 years at Crozer-Chester Medical Center. As the center's chair of radiology, he oversaw the adoption of the CAT scan and magnetic resonance imaging before such techniques were common and expanded its radiology staff from seven to 27. He also served as president of the medical staff at Crozer-Chester and as a member of the hospital's board of directors. In 1998, he founded Crozer-Chester's Breast

Imaging Center. Six years after retirement he returned as a clinical professor to teach medical students.

John C. Richards, M.D., G.M. '64, Hilltown Township, Pa.; March 24, 2013. He served in the U.S. Navy during World War II. After a short period at the medical research division of Merck, the pharmaceutical firm, he focused on psychiatry. For 13 years, he was one of the first psychiatrists at the Penn Foundation for Mental Health in Sellersville, Pa. Later, he worked in the Grand View Hospital emergency room, serving for a short period as director, and was president of its medical staff in 1973. He worked at the Lenape Foundation for Mental Health, counseled inmates at Bucks County Prison, and attended geriatric patients.

Richard A. Weinberg, M.D., G.M.E. '64, Philadelphia, a retired dermatologist; February 3, 2013. He was a captain in the U.S. Air Force, stationed at Yokota Air Base in Japan, where he was a general medical officer.

Michael R. Loreti, M.D., G.M.E. '65, Wyckoff, N.J., a retired ophthalmologist; July 1, 2012. He practiced in Passaic for 30 years and had been on the surgical staff of Passaic General Hospital and Saint Mary's Hospital.

Paul G. Schipior, M.D. '66, New York, N.Y., a pediatrician who also specialized in preventive medicine; January 26, 2013. He was affiliated with Montefiore Medical Center and had been a professor of pediatrics at Yeshiva University.

Michael J. Haut, M.D. '67, a hematologist and oncologist who had practiced at Pennsylvania Hospital for 30 years; June 26, 2013. Hospital officials described him as "the embodiment of caring and compassion." From 1972 to 1979, he was at the Walter Reed Army Institute of Research and served five years as its chief of hematology. In 1979, he was awarded the Meritorious Service Medal. He joined the staff of Pennsylvania Hospital that same year. Among his many leadership activities, Haut directed the hospital's Sickle

Cell Disease Program for 18 years and founded its Special Coagulation Laboratory, which was involved in managing the health complications of pregnant women with bleeding or clotting problems as well as patients with hemostatic problems who were undergoing surgery. He also established the Philadelphia Adult Gaucher's Disease Center in 1991.

At Penn's medical school, Haut had been a clinical professor in the Department of Medicine (which honored him with the Edward D. Viner Teaching Award) and the Department of Pathology and Laboratory Medicine. Haut served on the editorial board of *The Oncologist* 1999-2007. For many years, he was a reviewer for the Hematology Study Sections of the National Institutes of Health, and after retiring from Pennsylvania Hospital in 2008 he continued to be a scientific and research grant reviewer.

One of Haut's sons is **Elliot R. Haut, M.D.** '96, an associate professor of surgery, anesthesiology and critical-care medicine, and emergency medicine at Johns Hopkins University.

'70s

Vincent Barresi, M.D., G.M.E. '72, Columbus, Ohio; April 21, 2013. He served in the U.S. Navy as part of the 1st Marine Division in Vietnam from 1967 to 1968. He remained in the U.S. Naval Reserve until his honorable discharge in 1976. He was assistant director of the cardiac catheterization laboratory at Northwestern Memorial Hospital. Until he retired in 2012, he was a partner of Cardiology, Inc., in Columbus. A former president of the medical staff and chairman of the ethics advisory committee of Mount Carmel Health, he received a Lifetime Achievement Award from the medical staff in 2012. He was a founding member of the Columbus Physicians Ethics Circle.

Norman Lee Letvin, M.D., G.M.E. '77, Newton, Mass., chief of viral pathogenesis at Beth Israel Deaconess Medical Center; May 28, 2012. He was elected to Alpha Omega Alpha while a student at Harvard Medical School, where he eventually became a professor of medicine. He was principal in-



investigator of the Primate Core Research Grant of the National Institute of Allergy and Infectious Diseases, which performed T cell immunology studies for primate vaccine studies, and was a founding investigator/member of the NIH Vaccine Research Center. Author of more than 450 publications, he was elected to the American Society for Clinical Investigation and to the American Association of Physicians.

William L. Kissick, M.D., Ph.D., M.P.H., emeritus professor in the School of Medicine, the Wharton School, and the School of Nursing; June 30, 2013. In the medical school, he had been the George Seckel Pepper Professor of Public Health and Preventive Medicine. Kissick earned all his degrees at Yale University. Before he joined the University of Pennsylvania in 1968, he had worked in the federal government. There, along with other White House assignments, he was one of two physicians on a small team that wrote what became the 1965 law establishing Medicare. He had also worked with Luther Terry, M.D., the U.S. Surgeon General who issued the landmark warning about tobacco and health in 1964. At Penn he played a crucial role in establishing new interdisciplinary initiatives that brought together medical science and the business management of health care. Kissick was the long-time chair of the governing board of the University's Leonard David Institute of Health Economics and helped organize and launch the Wharton Health Care Management Program. He was chair of the Faculty Senate 1995-1996 and became emeritus in 2001.

Among Kissick's books are *Dimensions and Determinants of Health Policy* (1968), which he edited; *Lessons from the First Twenty Years of Medicare: Research Implications for Public and Private Sector Policy* (1989), which he edited with Wharton colleagues Mark V. Pauly and Laura E. Roper; and *Medicine's Dilemmas: Infinite Needs Versus Finite Resources* (1994), which developed Kissick's idea of the "iron triangle." A health care system, he argued, must balance access, quality, and cost containment. Any one of the three

FACULTY DEATHS

David Y. Cooper III, M.D. See Class of 1948

Edward Gosfield Jr., M.D. See Class of 1944.

Michael J. Haut, M.D. See Class of 1967.

Alfred Mayer Sellers, M.D. See Class of 1954.

can be improved, but only by compromising one or both of the other factors. As a result, he argued, any system has to make difficult choices and trade-offs.

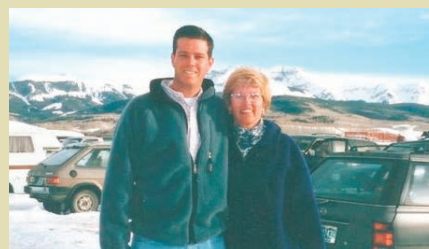
Kissick held visiting faculty appointments at many institutions, including the London School of Economics, the University of London, and Leuven University in Belgium. He was a Councillor of The College of Physicians of Philadelphia. He also remained closely connected to Yale University and was awarded the Yale Medal for outstanding service to the university.

Kissick had a sharp wit, which he sometimes turned against himself or his work. In a talk to the University of Pennsylvania Board of Trustees that was covered in *Penn Medicine* (Fall 1995), he alluded to his work in helping to frame Medicare: "Medicare was a herculean political achievement. . . . We made only three mistakes. We misjudged trends in technology, demography, and utilization. Now that's not bad for government work."

In explaining how he came to formulate the iron triangle of health care: "In 1968, I was simultaneously appointed professor in the School of Medicine and professor in the Wharton School. In the School of Medicine, my colleagues said, 'Kissick, no cost is too great to save a life or treat a disease.' As a physician, I agreed with them. Then I crossed Spruce Street to the Wharton School. My colleagues there said, 'Kissick, resources by definition are limited, and choices must be made.' I said, 'You're right.' Since then, I have been crossing Spruce Street back and forth daily in pursuit of an understanding of medicine's dilemmas – dilemmas deriving from infinite needs confronting finite resources."



A Planned Gift that Helps Children Cope with Grief



Doris Bradley-Plager and her son David Bradley

For fifteen years, the David Bradley Children's Bereavement Program, part of Penn Wissahickon Hospice, has been a beacon of hope for children. The program, which is free, has supported thousands of grieving children by teaching parents and caregivers techniques to help them cope with loss.

Doris Plager and his wife, Doris Bradley-Plager, who created the program in 1998, are no strangers to grief. Their inspiration was David Bradley, Mrs. Bradley-Plager's son. When David was young, his biological father died. David wished that one day he could help other children who were experiencing the same sadness. Unfortunately he passed away as a young adult, and the Plagers fulfilled his dream by making an initial gift to create the program.

Today, the program is thriving, thanks in part to the continued advocacy and generosity of the Plagers. They support it by serving as committee members, raising funds, and participating in public programs and fairs to promote its services.

Most recently, the couple designated the David Bradley Children's Bereavement Program as beneficiary of two IRAs.

IRA accounts and other retirement plans are excellent assets to use when making a charitable gift. Naming a charity such as Penn Medicine or Penn Wissahickon Hospice as the beneficiary will reduce the size of one's taxable estate and avoid subjecting these assets to income and/or federal estate tax – both of which could apply when these assets are left to non-spouse beneficiaries. The Plagers' tax-savvy charitable gift means that 100% of their IRA will support the program.

"Children grieve differently and I am happy that our money is going directly to those who need it most," Mr. Plager said.

The Plagers have a vision for expanding the program - with consistent growth, it will be a model for the nation.

"We are fortunate here in the tri-state area, but why should a child grieving in New Mexico or another state not have the same resources?" Mr. Plager asked.

Mrs. Bradley-Plager knows they are fulfilling her son's wish. "We are moved that so many children have been touched," she said. "It is what Dave would have wanted after all."

The Plagers chose one of a multitude of creative gift opportunities. 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., Executive Director of Planned Giving, at (215) 898-9486, by e-mail at cewan@upenn.edu, or visit www.plannedgiving.med.upenn.edu. For more information about the David Bradley Children's Bereavement Program, please call (610) 617-2400.

A Man With a Mission

For someone who has made the national news for probing some dubious aspects of medical research and for publicizing instances of scientific misconduct, Arturo Casadevall, M.D., Ph.D., does not look particularly fearsome in person. But he is certainly passionate and animated.

Casadevall – professor, editor, and, in the last few years, agitator – spoke recently at The Children's Hospital of Philadelphia before an attentive audience of postdocs, residents, researchers, professors, and Penn medical students. His topic was "Shaking Up Science," so it was not a surprise that the event was standing room only. He was introduced as someone who has taken on "a gargantuan topic. . . . To say that he created a firestorm would be an understatement."

The author of more than 450 scientific papers, Casadevall holds the Leo and Julia Forchheimer Chair in Microbiology & Immunology at the Albert Einstein College of Medicine of Yeshiva University. He is also editor in chief of *mBio*, a journal of the American Society of Microbiology. So he has credibility when speaking about science, good or bad. And, given that he was one of the authors of "Is the Nobel Prize Good for Science?" (*The FASEB Journal*, September 5, 2013), which dared to suggest some of the "negative consequences of competition between individual scientists," it's also clear that he is not afraid to examine sacred cows.

One of Casadevall's interlinking themes was the phenomenon of retractions in scientific literature. Such retractions appear ambiguous in effect. Rising ten-fold since 1975, retractions represent losses of effort, resources, and prestige – and, especially worrisome in an era when funding is harder to find, may damage the public perception of science. At the same time, "we have a mechanism" for correction

and conflict resolution, which, Casadevall noted, is a distinguishing difference between science and religion. In essence, retractions demonstrate self-correction.

The standard view of retractions has been that the great majority were due to error. But that's not what Casadevall, Ferric Fang, M.D., a microbiologist at the University of Washington and editor of *Infection and Immunity*, and R. Grant Steen, a medical writer, found in their widely publicized article in *Proceedings of the National Academy of Sciences* (October 2012). A full two-thirds of the 2,047 biomedical and life-science research retractions they examined "were attributable to misconduct, including fraud (43.4 %), duplicate publication (14.2 %), and plagiarism (9.8 %)." The authors reclassified 15.9 % of the retractions they studied, by using other sources of information.

Uninformative Retractions

As the authors also point out, in many cases "the retraction notice is insufficient to ascertain the true cause of a retraction," which is one reason that instances of fraud or other misconduct have been widely underreported. At CHOP, Casadevall was more blunt: some of the retraction notices are themselves "dishonest." In a lighter vein, I found that the editors of *Retraction Watch* recently posted a blog at *Labtimes* highlighting "the lengths editors have gone to in order to avoid using the word *plagiarism* in retraction notices." These include "unattributed overlap," "significant originality issue," and "administrative error."

Of equal concern, as Casadevall noted in his talk, not all articles suspected of fraud have been retracted – and some retracted articles continue to be cited in later research. Among those he cited were papers by Mark Spector, lead author, and Ephraim Racker, senior author, then at Cornell University. As I discovered, one such article, published in the *Journal of*

Biological Chemistry in September 1980, remains available on the Internet. Neither PubMed nor Research Gate mentions the retraction, and the four-page article appears as originally published.

Casadevall is a staunch champion of science. He compared our lives today to that of Queen Victoria, one of the richest persons of the 19th century. During her lifetime, 1 million people starved in Ireland, her husband died at 42, two children died in their thirties, her palace was full of smoke, and her toilet was a chamber pot. "Your lives are so much richer than hers," asserted Casadevall. The reason: scientific advances.

But there are problems. Casadevall cited individuals, among them Eric Poehlman, then at the University of Vermont. In 2006 he became the first academic scientist in the United States to be jailed for falsifying data in a grant application. While receiving millions of dollars in grants, he had published fraudulent research. Casadevall quoted him: "I had placed myself . . . in an academic position which the amount of grants that you held basically determined one's self-worth. Everything flowed from that."

For Casadevall, the current system does indeed share the blame. It fosters a "winner take all" mentality, pits scientists against each other in unhealthy competition, exalts "novelty" and appearances in "high-impact" journals, offers "disproportionate" awards, and discourages collaboration – which, he affirmed, is actually a cornerstone of scientific progress.

Solutions? Casadevall suggested "putting the Ph. back in Ph.D." By that, he meant training young scientists differently and more broadly, having them learn epistemology, logic, ethics, and metaphysics, encouraging them to explore *how* they know *what* they know. Ph.D., he reminded us, stands for doctor of *philosophy*. On a more earthly level, Casadevall proposed more training elements: probability and statistics and the proper design of studies. ♥

John Shea

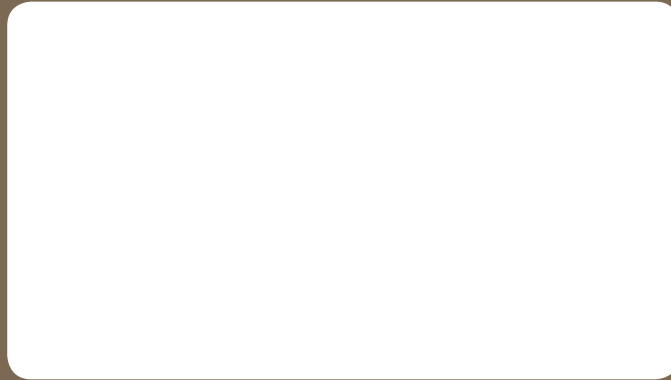
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Beatrice Hahn and George Shaw have contributed to nearly every aspect of HIV research. They have also worked to develop methods to identify and characterize a “transmitted founder virus.” That allows them to infer what molecular and genetic traits are necessary and sufficient for a virus to cross a mucosal barrier and establish an active infection.