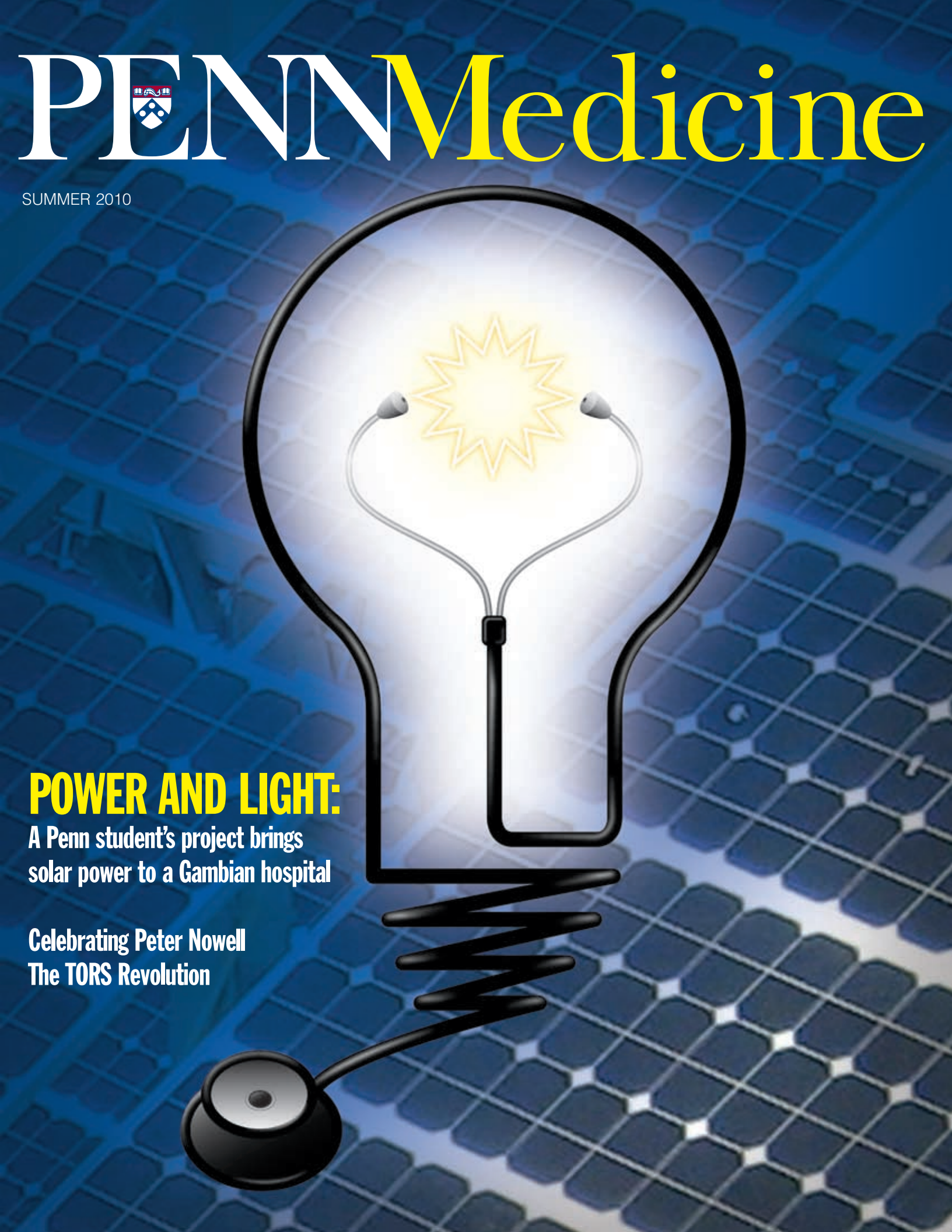
PENN Medicine

SUMMER 2010



POWER AND LIGHT:

A Penn student's project brings solar power to a Gambian hospital

Celebrating Peter Nowell

The TORS Revolution

Forbidden Knowledge

The annual induction of new members into Alpha Omega Alpha, the honor society for medical students, is customarily a joyous occasion. This spring's event was no different in that way, but the guest speaker, Harvey Rubin, Ph.D., M.D., also presented some troublesome, even chilling scenarios and asked the inductees to think about what they would do if faced with similar situations. The students are, he emphasized, an extremely accomplished group, and nobody is inducted into AOA without demonstrating leadership and a commitment to service. But he raised an important question: should there be limits on human knowledge? Are there times when even brilliant researchers – the kind that Penn Medicine is recognized for turning out – should close down their inquiries?

Rubin, a specialist in infectious diseases, knows whereof he speaks. As founding director of Penn's Institute for Strategic Threat Analysis and Response (ISTAR), he seeks to monitor all kinds of threats to nations. These threats could be biological, chemical, nuclear, even cyber, as well as natural disasters. Introducing Rubin, Arthur H. Rubenstein, M.B.B.Ch., dean of the School of Medicine and executive vice president of the University for the Health System, suggested that he was in many ways "a role model par excellence" for the medical students in attendance. ISTAR, Rubenstein continued, "epitomizes what Penn does best," bringing together knowledge from different disciplines and schools.

But are there times when even leaders must pull back? "Knowledge is good, but what if knowing something could kill you or your friends?" Rubin asked. He showed a slide of a painting of Odysseus and the sirens, done in 1909. Odysseus was celebrated for his shrewdness, for coming up with the idea for the Trojan Horse. He was also known for his thirst for knowledge. He knew the sirens lured sailors to their deaths, so he had his men put wax in their ears. But he had them tie him to the mast, without the protection of the wax, so he could hear what the seductive sirens were singing. Odysseus survived the ordeal, gaining partial – not full – knowledge, but it was a close call!

Rubin also cited the case of J. Robert Oppenheimer, director of scientific research for the Manhattan Project, which developed the atom bomb. Later in his career, having seen the destruction such bombs cause, he became an advocate for halting the proliferation of nuclear weapons.

Beware of Dual Use

In his talk, Rubin cited *Forbidden Knowledge*, by the cultural scholar Roger Shattuck. According to *The New York Times*, "the book provoked a storm of protest, but Mr. Shattuck stopped well short of advocating censorship" (12 December 2005). Instead, he urged setting reasonable limits in the quest for knowledge.

That accords with Rubin's view, all the more so today, when technology is much more advanced. Medical researchers – and experts in infectious diseases in particular – "can do experiments that have some pretty nasty outcomes." For example, they could create in their laboratories something as deadly as the 1918 influenza, which caused one of the worst epidemics in history. Scientists could create a virus that is more resistant, with greater transmissibility. Then Rubin reminded the audience: such an experiment has already been done. The entire genetic sequence of the 1918 flu was synthesized and published and is now in the public domain.

Rubin was more than a distant bystander. As a member of the National Science Advisory Board for Biosecurity, he and his colleagues were called upon to consider whether the two related studies of the flu should be published. "After a long and deliberate conference," he said, "we *all* voted for publication."

The studies published in *Science* and *Nature* were not universally welcomed. Phillip A. Sharp, who received the 1993 Nobel Prize in Physiology or Medicine, defended the publication in an editorial in *Science* (7 October 2005). Knowing the genetic sequence of the virus may permit "the development of new therapies and vaccines to protect against another such pandemic." Still, he conceded that there are concerns about the "dual-use nature of biological information." On the other hand, Ray Kurzweil, an inventor, and Bill Joy, founder of Sun Microsystems, criticized the publication in a *New York Times* op-ed piece called "Recipe for Destruction" (17 October 2005). "This is extremely foolish," they wrote. "The genome is essentially the design of a weapon of mass destruction." They argued that there are other ways to share "scientifically useful information" without providing the complete genetic recipe.

What these views show, Rubin suggested, is the complicated nature of dual-use research. Part of his work with ISTAR has involved trying to develop an international code of conduct for research, by which the signees would commit to being alert to the potential misuse of research that would otherwise be beneficial. "Harmonizing all these issues across the globe" is very difficult, he said, but it's essential, given the great harm infectious diseases could cause.

As he ended his talk, Rubin addressed the new AOA inductees: "Being special, you carry a special responsibility. Act – but act responsibly." ▪

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POWER AND LIGHT

By Paul Blore

A summer volunteer at Sulayman Junkung General Hospital in The Gambia witnessed how sorely the hospital needed a more dependable source of power. For patients, electricity could mean the difference between life and death. Now a Penn medical student, Kathryn Hall founded an organization that has been able to fund construction of a lifesaving solar-energy system for Sulayman Junkung.

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A FOUNDATIONAL DISCOVERY

By John Shea

Fifty years ago, Peter Nowell and David Hungerford published an article about an unusually small and defective chromosome they found in leukocytes present in patients with a form of blood cancer. At the time, most scientists believed cancer was caused by viruses. The "Philadelphia chromosome," as it came to be called, would change the way cancer is understood.

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AWAITING THE IMPACT *By John Shea*

Now that the health-care reform bill has been signed into law, what changes in medical practice are we likely to see in the coming years? A panel of experts – a Wharton professor, a Penn professor of internal medicine, and a consultant on organizational effectiveness and information technology – presents some likely scenarios.

A REVOLUTIONARY APPROACH TO HEAD AND NECK SURGERY *By Sally Sapega*

Compared to open surgery – and the side effects of increased chemotherapy and radiation – the minimally invasive approach of transoral robotic surgery (TORS) is revolutionary. TORS patients experience faster recoveries, less scarring, and reduced pain. TORS was researched and developed at Penn, which is expanding its training program throughout the United States.

VISUALIZING THE COMPLEXITIES OF BIOLOGICAL PROCESSES *By John Shea*

A pioneering collaboration among architects, cell biologists, mathematicians, and materials scientists, the Sabin+Jones LabStudio at Penn seeks to produce new modes of thinking, working, and creating. One of LabStudio's projects, "Branching Morphogenesis," won the 2010 International Science & Engineering Visualization Challenge.

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From left: Craig B. Thompson, M.D., director of the Abramson Cancer Center; Nancy Wolfson, daughter of the Abramsons; Madlyn and Leonard Abramson; and Amy Gutmann, Ph.D., Penn's president.

Abramson Family Honored for Philanthropic Support

At the Abramson Cancer Center's annual event in May, a new gift from Madlyn and Leonard Abramson was announced: $25.5 million gift to support cancer research. The gift brought the Abramson's contributions to Penn Medicine to more than $140 million. They are the institution's largest donors.

The new gift will support continued basic science and translational research in the Abramson Family Cancer Research Institute. The Abramsons pledged $100 million in 1997 to establish the institute. In the 12 years since its creation, their gift has led to:

*Recruitment of 20 scientists to the Penn Medicine faculty.

*New research programs in cancer cell metabolism, cancer vaccines, cell-based immunotherapy, and the study of the DNA repair system involved in breast cancer and lymphoma.

*Genome-wide studies that have yielded new therapeutic targets for brain and kidney cancers.

*Blood and imaging tests to more easily diagnose cancers, including leukemia and glioblastoma, a deadly brain cancer.

*Hundreds of patients enrolling in trials that test therapeutic vaccines and new targeted drug therapies.

"By fostering the spirit of scientific inquiry, the Abramsons have enabled the most talented minds in the country to engage in the most advanced basic and translational research right here in Philadelphia at our Abramson Cancer Center," said Arthur Rubenstein, M.B.,B.Ch., dean of the School of Medicine and executive vice president of the University of Pennsylvania for the Health System.

Madlyn Abramson is a trustee of Penn Medicine and graduate of the School of Education. Leonard Abramson was the founder and chief executive officer of U.S. Healthcare, Inc. For their extraordinary service to Penn Medicine, the Abramsons received the inaugural Dean's Medal. The medal was created to bring attention to the importance of philanthropy in higher education and the field of medicine.

Targeted Immunotherapy Shows Promise for Metastatic Breast and Pancreatic Cancers

Early trials using targeted monoclonal antibodies in combination with existing therapies show promise in treating pancreatic cancer and metastatic breast cancer, according to research presented by Penn Medicine investigators at the annual meeting of the American Society of Clinical Oncology (ASCO) in June.

In the first new study, investigators at Penn's Abramson Cancer Center used an antibody previously approved by the F.D.A. to enhance the effectiveness of a therapeutic vaccine for women with advanced breast cancers. The antibody, known as anti-CD25 mAb daclizumab, targets T regulatory cells (Tregs), which are naturally occurring cells that tumors harness to dampen the body's normal immune response. Until now, these cells have represented an obstacle to cancer immunotherapy. The Penn team uses the antibody to turn off the function of Treg cells in the immune system and to boost the effectiveness of a telomerase/survivin peptide vaccine made to tackle the cancer.

The study demonstrated that a single infusion of the antibody given a week before patients received the vaccine results in "rapid, marked, and prolonged" loss of Tregs without toxicity in patients with metastatic breast cancer. Six of the 10 patients who received the treatment exhibited a stabilization of their disease.

"Many of these women have already been treated with and failed several chemotherapy regimens, but using this approach they were able to receive multiple doses of the vaccine without experiencing any of the toxicities that often accompany chemotherapy," says senior author Robert H. Vonderheide, M.D., D.Phil., an associate professor in the division of Hematology/Oncology. "For this group of patients, an extended period of stable disease represents an encouraging result." He and his team

plan to begin much larger studies in the near future and, ultimately, to expand the new combined approach to women who are currently in remission but at very high risk of relapse.

In the second immunotherapy-related study, Penn researchers utilized CP-870,893, a CD40 agonist monoclonal antibody produced by Pfizer. The antibody enhances anti-tumor cellular immunity by activating tumor antigens and triggering the release of inflammatory cytokines. The antibody was combined with the chemotherapy agent gemcitabine to treat pancreatic cancer patients who had not received any previous chemotherapy. The Phase I study demonstrated that the combined therapy produced promising results without causing any significant toxicity. Three of the first 21 patients treated experienced partial regressions of their tumors, and the diseases of 11 patients stabilized. The researchers observed positive effects of the treatment in both the primary and metastatic tumors. Additional studies are under way to evaluate this treatment approach in larger groups of patients.

With this approach, the researchers can measure not only the effects of the treatment, "but also understand exactly what is going on at the cellular level and then use that information to develop our next generation of clinical interventions," says Gregory Beatty, M.D., Ph.D., a clinical associate in Hematology/Oncology who led the study with Peter O'Dwyer, M.D., a professor of Hematology/Oncology. "Our goal is to re-educate the immune system to mount a specific inflammatory response to the tumor."

A New Department Chair

Mark A. Lemmon, Ph.D.,who has been serving as interim chair of the Department of Biochemistry and Biophysics, has been

Lemmon

appointed chair, effective July 1. He succeeds P. Leslie Dutton, Ph.D., the Eldridge Reeves Johnson Professor of Biochemistry and Biophysics, who led the department for 14 years. Lemmon, who came to Penn Medicine in 1996 as an assistant professor, is considered a world leader in two distinct research areas of cellular function: signaling by receptor tyrosine kinases (RTKs) and the role of inositol phospholipids in cellular control. His research was recognized by the School of Medicine in 2009, when he received the Stanley N. Cohen Biomedical Research Award, one of the Awards of Excellence conferred on members of the faculty.

After graduating from Oxford with a B.A. degree in biochemistry, Lemmon received his Ph.D. degree in biophysics/biochemistry from Yale University and was a predoctoral fellow of the Howard Hughes Medical Institute during that time. He completed his training at New York University Medical Center. He is on the editorial boards of several leading journals in his field, including *Cell* and *Molecular Cell*, and is deputy chair of the editorial board of the *Biochemical Journal*. He was elected secretary of the American Society for Biochemistry and Molecular Biology in 2007 and was re-elected to that position in May.

Fostering a Safe Haven

What happens when a patient asks about a rainbow flag pin, or a wedding band, or a photo of the doctor and his life partner? In that moment, a gay physician must make a choice about how open to be about his sexuality.

As a physician who is gay, Bruce J. Giantonio, M.D., associate professor of medicine, has had to make this delicate judgment call. As a member of Lesbian, Gay, Bisexual, and Transgendered People in Medicine Plus (LGBTPM+), Giantonio aims to make such decisions less challenging for fellow faculty and staff members at Penn's School of Medicine.

Toward that goal, the third campus symposium of LGBTPM+ included a workshop with a panel of School of Medicine faculty who related their "medical coming-out stories" and their experiences as LGBT physicians. The symposium, held in April, brought together faculty, staff, and students for a morning of workshops and networking. Then followed a plenary talk by Arthur Robinson Williams, a documentary photographer and Penn medical student. He is the creator of "My Right Self," a photography exhibit about transgendered people that explores issues of identity.

Medical students at the panel discussion wondered how open to be about their sexuality as they moved forward in their careers. On the doctor-patient level, said Giantonio, it's important for a physician to consider whether "introducing his or her sexuality could help or hurt that relationship."

Giang T. Nguyen, M.D., M.P.H., assistant professor of family medicine and community health, is a member of the national Gay and Lesbian Medical Association. Because of that affiliation, he finds that patients seek him out because he is gay. But while commonality between doctor and patient "helps solidify the rapport I have with my patients," Nguyen noted

the importance of maintaining a "professional distance even when you run into people you take care of."

Learning to maneuver matters of coming out and being gay in the medical community was on the mind of Emma E. Furth, M.D., professor of pathology and laboratory medicine, when she decided to found LGBTPM+ at the School of Medicine in 2007. "It was obvious over time that the whole issue of being comfortable and visible in the LGBT population wasn't there," says Furth, who chaired the Medical Faculty Senate 2009-2010.

Furth looked to two established organizations at the School of Medicine: the LGBTPM+ student group and FOCUS, a School of Medicine group that advocates women's health and leadership and professional development for women.

"The dean gave us moral support, funding, and visibility," says Furth, referring to Arthur H. Rubenstein, M.B.,B.Ch. "I give him complete and utter credit for supporting what this University stands for."

According to Furth, being "out" in the medical community is not always easy. In some academic settings around the country she still sees "subtle, behind-the-door discrimination." But Penn, she says, "is amazing and very supportive." For example, it provides provides benefits for same-sex domestic partners and has offices to foster diversity.

"While we recognize Penn as a leader in many ways," says Peter Kanetsky, M.D., M.P.H., assistant professor of epidemiology, "we are working with the University toward even higher standards." The group also welcomes alumni to join the listserve and to attend events.

– Jennifer Baldino Bonett

For more information, contact Peter Kanetsky at pkanetsk@mail.med.upenn.edu or call (215) 573-3282, or visit us on the web at www.med.upenn.edu/lgbt/.

Honors & Awards

Garret FitzGerald, M.D., the McNeil Professor in Translational Medicine and Therapeutics and chair of the Department of Pharmacology, has received the 2010 Pharmacia-ASPET Award for Experimental Therapeutics. FitzGerald is internationally renowned for his work on bioactive lipids and prostaglandins. According to the American Society for Pharmacology and

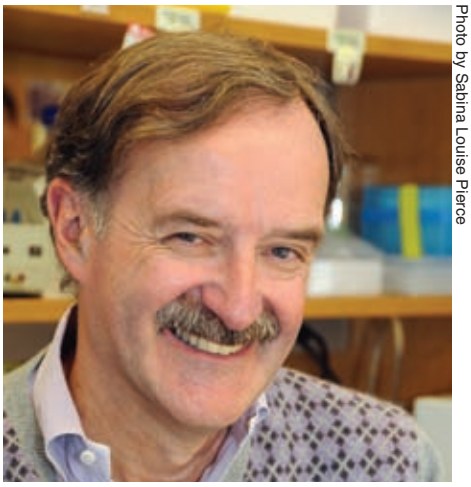


Photo by Sabina Louise Pierce

FitzGerald

Experimental Therapeutics, his discoveries have contributed in a fundamental way to the adoption of low-dose aspirin for cardio-protection and more recently have refined the use of nonsteroidal anti-inflammatory drugs. He was also the first to characterize the molecular clock in the cardiovascular system. FitzGerald serves as director of Penn's Institute for Translational Medicine and Therapeutics.

Edna Foa, Ph.D., professor of clinical psychology in psychiatry and director of the Center for the Treatment and Study of Anxiety, was named to the 2010 *TIME* 100, the newsweekly's annual list of the 100 most influential people in the world. She was included in the "Thinker" section. Her specialty is treating posttraumatic stress disorder. According to *Time*, "No one is doing more to end that suffering" than Foa. In addition, it notes that the U.S.

Photo by Candace diCarlo

Foa

military is embracing the therapy Foa developed, known as prolonged exposure. "The Department of Veterans Affairs is putting the protocol into wide use and implementing programs to teach it across the various services."

Eli Glatstein, M.D., a professor of radiation oncology who serves as vice chair and clinical director of the department, has received the Distinguished Achievement Award from the American Society of

Glatstein

Clinical Oncology. According to the society, Glatstein's research has made a significant impact on the way a number of cancers are diagnosed and treated, particularly Hodgkin's disease. In the early 1970s, he was the first to combine radiation on-

cology with medical oncology, "which has had a deep and lasting impact on the effect and importance of radiation oncology within the cancer care community." He was also praised for his commitment to teaching and training medical students: 22 of his former trainees, fellows, or junior faculty members have gone on to become department chairs of academic radiation oncology.

Mitchell D. Schnall, M.D. '86, Ph.D., was inducted as a Fellow in the American College of Radiology during the College's annual meeting. The Fellows have demonstrated a history of service to the College, as well as to organized radiology, teaching, or research. A professor of radiology and associate chair of research for the department, Schnall serves as chair of the College's Imaging Network.

Letters

Autism and Television?

I find the article on the Center for Autism Research [Spring 2010] informative and interesting. The Center certainly casts a wide net to find the causes of the often devastating disease. However, I was surprised that no mention was made of a possible contribution or trigger to the malady by excessive television watching. I have been curious about this possibility since the incidence of autism more or less parallels the increase in television programming for small children. There have been a number of articles supporting this possibility.

Autism has often been described as a lack of social skills and perception which the autistic child develops. Watching television by young children gives them no feedback of social skills, and I wonder if that could be part of a trigger. I would hope that, in the intake history of children with suspected or fully developed autism, a detailed accounting of time spent in front of television or DVD movies could be recorded.

Walter J. Gamble, M.D. '57
Lexington, Mass.

Dr. Mandell replies:

We appreciate the letter from Dr. Gamble and his interest in the environmental causes of autism. To our knowledge, only one study supports the link between television watching and autism. This study, conducted by three economists at Cornell University and Purdue University, determined that television watching and level of precipitation in a given county are correlated. They then examined the correlation between the number of reported cases of autism within a given county in four states (California, Oregon, Pennsylvania, and Washington) and the average annual precipitation, finding that there was an association. Their somewhat premature conclusion was that television watching causes autism.

There are many challenges to interpretation of this study, most of which are acknowledged by the authors. First, level of precipitation is a very indirect measure of television watching. Second, the finding is subject to what is called an "ecological fallacy." That is, associations observed at the population level (in this case, level of precipitation and proportion of children diagnosed with autism) are attributed to individual differences (i.e., the more TV you watch, the more likely you are to develop autism). In truth, this study offers no information about the extent to which any given child who developed autism watched TV. It also offers no information about the true number of cases of autism in a county, but rather just the number identified by the education system, which we know varies greatly depending on the educational resources of that county.

In a separate analysis, the authors use the increase in subscriptions to cable television as a proxy for TV watching, finding that this variable too is correlated with increases in rates of autism between 1972 and 1989. Cable television subscriptions, however, are expensive, and may be correlated with family income, which in turn is correlated with more use of health care and early childhood intervention services, factors perhaps more important in recognizing (rather than causing) autism than TV watching.

Even if it turns out that children with autism watch more TV than other children, it is not clear which comes first. Children with autism can present myriad challenges to their parents. Watching TV may provide some respite to families. Therefore, parents of children of autism may be more likely to put their young children in front of a TV than other parents.

Certainly, while the preponderance of evidence is that autism has more genetic than environmental causes, there most likely is some environmental component, and we hope that exciting studies in which Penn and CHOP are participating will uncover some. We do not think, however, that current evidence suggests TV watching as a fruitful avenue for further study.

David S. Mandell, Sc.D.
Associate Professor of
Psychiatry and Pediatrics
Associate Director, Center
for Autism Research

A pre-med student at Penn had the lofty and perhaps unrealistic goal of bringing more power to a hospital in The Gambia that sorely needed it. Four years later, the organization she founded has installed more than 100 solar panels at Sulayman Junkung General Hospital.

POWER AND LIGHT

By Paul Blore

Top: The newly installed solar panels outside the hospital draw the attention of local boys. Left: Part of the celebration for the new solar power system involved traditional dances.

"Thank God for the light."

These are the words of Saidu Beyai, principal nursing officer at Sulayman Junkung General Hospital in The Gambia, recalling a case from the maternity ward.

Before dusk one morning, the midwives at SJGH are suddenly thrown into a tumult when a mother-to-be arrives in the throes of labor. Of course the midwives have faced this situation before, but now the circumstances are particularly difficult: the baby is in complete breech presentation, sitting cross-legged at the opening of the birth canal. Among the risks of a breech presentation is oxygen deprivation if either the umbilical cord becomes compressed or the head gets trapped in the mother's pelvis. This kind of delivery is not the ideal anywhere in the world, but maternal mortality increases dramatically outside of the First World.

Through the coming hours, the midwives do everything they can to turn the odds in favor of survival for both mother and child. At last, the delivery is a success and the mother can hold her newborn child. The midwives breathe a sigh of relief, knowing that a little more than a year ago,

Michael Hall tends to a patient.

Kathryn Hall had the honor of switching on the hospital's solar panels.

the delivery would have been done by candlelight – and the outcome might have been much different.

"It was a nightmare to perform emergency surgeries when the lights are gone and the generators are gone," says Kebba Badjie, chairman at Sulayman Junkung. "People who are very sick, or hooked to oxygen concentrators . . . you know you are going to have life terminated."

Because Sulayman Junkung is one of only five major hospitals in the tiny West African country, people traveled great distances to receive treatment. But what they found when they got there was not always what could ensure their recovery – and certainly not what we have come to expect in the West.

Despite being constructed in 2003 as a major regional hospital, its distance from the power grid made it necessary to generate electrical power on site. The generators were unreliable at best, often sputtering to a stop. Sometimes it would be days before repairs were successful. Operations had to be postponed until electricity returned, diagnostic procedures were not always available, no blood bank could be maintained, and drugs and vaccines were unusable because of frequent loss of refrigeration.

The unreliability of power was especially discouraging given that 16 percent of the hospital's annual budget went to fuel alone – "the biggest overhead we have," according to Badjie. Round-the-clock health care is an expensive business, and the hospital could not afford to keep the generators on past 2:00 a.m. Beyai, the principal nursing officer, notes that in the case of the breech birth, the 5:00 a.m. arrival of the mother would have meant calling the generator operator to have him activate the generator, "and only if the generator had been working at that particular time."

What a Volunteer Saw

In 2006, a 20-year-old pre-med student from the University of Pennsylvania saw these conditions with her own eyes. Through Operation Crossroads Africa, which provides summer volunteer opportunities for students, Kathryn Cunningham embarked on a short-term volunteer trip to the hospital. The Gambia has eight local tribal languages, but it is a former English colony and English is taught in the schools. So she was able to communicate with the people there. Although she reports that she had to find The Gambia on a map, she had grown up hearing stories about West Africa. Her father spent years in Togo with the Peace Corps before Kathryn was born. What she saw in The Gambia, however, eventually changed her life and Sulayman Junkung forever.

Now married to Michael Hall, a fellow medical student at Penn, Kathryn Hall had roles at the hospital that changed frequently. But she recalls two instances that profoundly affected her. The first involved a premature baby who was having trouble breathing but was otherwise healthy. Without the power to run an incubator or to give life-saving oxygen, the baby died the next day. "That was the moment I realized that things were drastically different from home," says Hall, lamenting that something so simple would have made all the difference. "It was also the first time I saw a baby die."

In the second instance, a learning opportunity quickly turned into a tragedy. Hall was called to the labor ward to observe what was expected to be a routine delivery. After hours of attempts with little progress, the only recourse was to deliver by C-section . . . but only once the lights could come on. When they finally delivered the baby hours later, it was clear that the C-section had come too late and the child had died in the womb. The midwife, who was the mother's sister-in-law, dropped the customary Gambian stoicism and broke into tears, nearly passing out. Without having scrubbed in, Hall was urged to join the delivery team and help resuscitate the baby for "the longest 20 minutes of my life."

The mother survived but nothing could be done for the child – not at this late stage. An ultrasound could have assessed the complications and allowed the delivery team to schedule the C-section much sooner. Again, power meant the difference between life and death.

As heartbreaking as these occasions were, what Hall witnessed were all-too-familiar to the hospital staff. As she prepared to leave the country, she knew

The solar panels are a good choice for a country that does not see rain for six months out of the year. Below, the OR staff can be more confident with a stable source of electricity.

that she would not leave the memories behind. She wondered aloud to Badjie, the chairman, how she could help from home. Hardly expecting a concrete answer, she was surprised when Badjie reached into his back pocket and pulled out an estimate for the installation of a solar power system large enough to run the entire hospital. He had long known that the expense of fuel, the unreliable generators, and the distance from the grid were keeping him from providing the standard of health care he desired. Badjie had the answer to the hospital's power woes – but not the means to acquire the $300,000 or so that was needed.

Passion + Goals = PUG

Although daunted by the sum, Hall was impressed by his initiative and promised to do what she could. Back in the United States, she began talking to anybody who would listen. She found that many people would lend an ear, and many were willing to lend a hand as well. Her passion for the cause was contagious. More individuals joined her in her efforts, eventually leading to the formation of the organization Power Up Gambia (PUG).

According to the tenets of Power Up Gambia, access to the best possible health care is a human right and international development must involve sustainable solutions. The PUG team has an influential backer, Paul Farmer, M.D., Ph.D., the Presley Professor of Social Medicine at Harvard Medical School and co-founder of Partners in Health, the international health and social justice organization. Hall had the opportunity to meet Farmer in 2009, when he came to Penn to deliver the Renee C. Fox Lecture. The work PUG is doing, says Farmer, "succeeds in uniting the two great struggles of our time: the struggle for social justice and that for ecological justice." (Farmer was one of the recipients of an honorary degree in May from the University of Pennsylvania.) The PUG team can also claim to have followed an outline for international development put together by the Energy Team of the U.S. Agency for International Development, called the "Step-Wise Approach to Power Your Health Facility" – without even being aware they were doing so. It was simply the approach that arose organically from the brainstorming and action taken by the "Core Team" of the organization.

The people who have gravitated to the cause have diverse backgrounds and interests that have helped to flesh out the organization's mission and capabilities. While the board includes individuals with years of experience working on behalf of charitable causes, the core is a group of enthusiastic students and young adults who meet in their free time and collaboratively drive the momentum of the organization. Most members are drawn from Penn's School of Medicine (about 10 students), and others credit the word-of-mouth of these students for their own motivation to join. Among the current Penn medical students is Andy Fisher, who has a background in bioengineering and spent six years working and studying in hospitals in Pittsburgh and Philadelphia; he serves as PUG's technology specialist. Tanya Keenan, who holds degrees in neuroscience and political science from the University of Pittsburgh, formerly coordinated relations with Rotary Clubs, which PUG describes as "a great contributor and an enthusiastic friend." Jen Abraczinskas, a graduate of La Salle University whose background is in chemistry and biochemistry, served as director of volunteers and interns. Like Hall, both Keenan and Abraczinskas are now members of PUG's board.

This summer, Fisher and two other first-year Penn medical students, Scott Grossman and Evan Werlin, will be going to The Gambia. They will visit sites that PUG has supported as well as potential sites of future projects. Like earlier visits, theirs is funded by the Global Health Programs of Penn's School of Medicine. PUG also reports that three M.B.A. students in The Wharton School are helping the organization create a strategic plan for the next several years.

This kind of global engagement is very much in the spirit of The Penn Compact, articulated by Amy Gutmann, Ph.D., Penn's president, and championed as well by the Office of the Provost.

Sesh Sundararaman, left, a Penn medical student, visited The Gambia last year.

Moving Beyond Phase I

Through their grassroots fundraising efforts, Power Up Gambia raised enough money to accomplish "Phase I," an installation of 18 solar panels to power the hospital's water pumps at Sulayman Junkung. Previously, the pumps had also relied on the generators, meaning there were times when sanitation was impossible and staff would scrub in for surgery as one poured water over the hands of another. After the successful unveiling of Phase I, PUG then had the momentum and the results to garner more support. By May 2008, the group had raised $350,000, enough to complete the installation of the remaining 96 panels, along with 6 tracking units.

In a nation with an infant mortality rate of 70 out of 1,000 live births (the rate in the United States is seven out of 1,000), every little bit can help improve an infant's chances. Since the inaugural celebration in March 2009, the improvement at Sulayman Junkung General Hospital has been remarkable. "Some years back, before the installation, we had been registering stillbirths," says Chairman Badjie, "up to six deaths in a year." But for the entire year that followed the installation, the hospital had not registered any deaths during delivery, whether among infants or mothers. Sadly, the same is not true at any other hospital in The Gambia.

The hospital has seen improvements outside of the maternity ward as well. Microscopes that once sat idle as the staff sought to diagnose malaria, bacterial infections, and STDs by visual inspection are now put to appropriate use. Laboratory results are now timely and reliable. Constant refrigeration allows the hospital to keep vaccines and other supplies that require cold temperatures, as well as a blood bank and test samples. Hall is quick to point out that nothing has improved the situation on the ground more than the ability keep the lights on at night, and Badjie agrees. "A simple thing and ordinary, especially in the west," he says, but in The Gambia, "it is a luxury that has made a difference in the lives of people."

Although the hospital had oxygen concentrators, refrigeration units, and ultrasound equipment before solar panels were installed, the improvement in the 15 hospital's capabilities has been noticed by other organizations. They in turn donated equipment or sent volunteer medical staff. Badjie cites improved morale and greater retention among the staff. "Imagine the stress and trauma workers undergo when they couldn't do anything when the lights go. Now you have sustained electricity. It's a great relief in the way people work and also in quality." The credibility of the hospital has gotten a boost, and the administrators have seen an increased and steady influx in patients as a result of greater overall confidence. The hospital staff and the greater community all take pride in the installation.

To Replace Jugs of Water

At the time of the Phase I installation, a worker from the satellite clinic in the village of Somita showed up unannounced. He had walked 15 kilometers to explain the clinic's needs to Hall. Several board members subsequently assessed the clinic and were struck by the dedication of the staff, the governance by the community, and the cleanliness of the facility – a true feat in arid West

A Trio of Awards

In 2008, Kathryn Cunningham Hall received a Do Something Award for founding Power Up Gambia. The aim of Do Something is to "inspire, empower, and celebrate a generation of doers: young people who recognize the need to do something, believe in their ability to get it done, and then take action."

Last year, Hall received the 2009 Ten Outstanding Young Americans Awards from the United States Junior Chamber. Among the young achievers of the past who have been similarly honored are John Kennedy and Bill Clinton. Hall's work with PUG exemplifies the Jaycees creed: "That earth's great treasure lies in human personality, and that service to humanity is the best work of life."

Also last fall, the staff of Power Up Gambia helped the Delaware Chapter of People to People International celebrate its 25th anniversary at a gala dinner in Wilmington. On that occasion, Hall received the Delaware Chapter's 2009 International Community Award.

On a visit to Sulayman Junkung, Kathryn Hall accompanies the staff on rounds.

Africa, where red dust seems to permeate everything. As a result, Power Up Gambia made the decision to change from a one-time project to an continuing mission, and the board approved the clinic in Somita as the next major project.

Sesh Sundararaman, a Penn medical student, reported on his visit to Somita in a PUG newsletter last fall. Noting the shortage of water at the clinic, he wrote that it consisted of large jugs filled every day from a village tap: "These jugs allow the staff to clean the clinic, take quick showers, provide drinking water to patients, and nothing more. They cannot scrub in for births or bathe and sanitize the pregnant mother, relying on mineral spirits and hand sanitizer for most of their procedures." This summer, in addition to installing solar panels, PUG will install a tank at the clinic for continuous water. Sundararaman, who spent most of his childhood between California and Western Africa, serves as director of monitoring and evaluation for Power Up Gambia.

Now a full-fledged 501(c)(3) organization, Power Up Gambia is careful not to give handouts. Instead, it identifies communities that exhibit initiative and can be their own agents of change. Members of PUG are also doing more than putting a temporary band-aid on a chronic problem. While solar power is an obvious choice for a country that does not see rain for six months out of the year, PUG strives to provide sustainable solutions in other ways. They have formed a partnership with the University of Strathclyde in England to create a training program at Gambia Technical Training Institute. The technicians would be equipped with the skills necessary for the long-term maintenance of the installations. With the solar industry booming, local specialists in the field of solar installations are in high demand and could draw technicians from all over the continent.

The chairman of Sulayman Junkung, Kebba Badjie, right, reads a statement at the installation ceremony.

As Power Up Gambia expands the scope of its capabilities and begins to approach bigger donors, the team remains adamant about maintaining a grass-roots feel. From the start, the members have kept the overhead low so that donations would have the greatest impact in The Gambia. Only one employee is paid, and on a part-time basis: the executive director, Lynn McConville. (Hall took a smaller role when she entered her clinical rotations.) Individual members of the team are encouraged to engage in their own fundraising efforts, and a large portion of activities are led by a Power Up Gambia undergraduate chapter at Penn. Michael Reiche, who earned his B.A. degree in biochemistry and M.S. degree in chemistry at Penn in May, was founder of the undergraduate group as well as director of student chapters. PUG hopes to replicate these chapters at other universities, colleges, and secondary schools.

The PUG team takes pride in knowing that other young people are inspired to take action for social change, such as two young girls who had friends donate money in lieu of birthday and bat mitzvah gifts, and area classrooms that organized events and sales on PUG's behalf. "I don't ever want to stop hearing from people who wanted to help in their own small way," says Hall.

Badjie once said, "We are waging a war against darkness – darkness that will go away with solar." Indeed, Power Up Gambia has recently spent a lot of time considering its future role in The Gambia and looks forward to fulfilling one of its newly outlined goals: that every Gambian child be born in the light. ●

Paul Blore, a 2005 graduate of Juniata College, lived in The Gambia for four months, volunteering with a variety of community-oriented projects. He is now a member of PUG's Core Team, directing communications and public relations.

Power Up Gambia invites you to consider supporting its work in your own way, whether through making a tax-deductible donation, organizing an event, or starting a PUG chapter. Visit www.PowerUpGambia.org or write to info@powerupgambia.org for more information.

A Foundational Discovery

Fifty years ago, Peter Nowell and David Hungerford published an article about an unusually small and defective chromosome they found in leukocytes present in patients with a form of blood cancer. Their findings would change the way cancer is understood.

It all started, if Peter C. Nowell, M.D. '52, can be believed, back in 1956, when he embarked on what he has described as "some poorly defined studies of leukemia, looking at the growth and differentiation of human leukemic cells in irradiated mice and *in vitro*." He has written about his "remarkable lack of manual dexterity in the laboratory." Once, he even characterized his experiments as "diddling around with leukemic cells in culture." Not much there, one might assume?

Most observers would beg to differ.

In his more than half a century as a member of Penn's medical faculty, Nowell, the Gaylord P. and Mary Louise Harnwell Emeritus Professor of Pathology and Laboratory Medicine, has made his mark on the School of Medicine, the University of Pennsylvania, and biomedicine in general. He has received many honors – among the most notable the Albert Lasker Medical Research Award, often considered the American Nobel Prize. Other honors include the Parke Davis Award in Experimental Pathology, the Robert de Villiers Award of the Leukemia Society of America, and the Fred Stewart Award from the Memorial Sloan-Kettering Cancer Center. In addition, he has been elected to the Institute of Medicine, the National Academy of Sciences, and the American Academy of Arts and Sciences.

But 2010 has been a particularly busy time for Nowell, whose work is being celebrated with fresh vigor. The reason? 2010 is the 50th anniversary of the discovery of the Philadelphia chromosome by Nowell and the late David Hungerford, a graduate student at the Institute for Cancer Research in Fox Chase. (He went on to earn his Ph.D. degree from Penn.) Nowell may have written about the first steps toward this major discovery in his characteristically modest way, but there is no doubting the vigor and tenacity with which he and Hungerford developed their finding – or, as subsequently became clear, the significance of the Philadelphia chromosome in medical history.

What they discovered was that cells Nowell had taken from patients with chronic myelogenous leukemia (CML) had an altered, minute chromosome. They published their finding in *Science* "with caution," Nowell has written, and the techniques did not exist then to determine whether the minute chromosome results from a deletion or a translocation.

At the time of their discovery, most scientists believed cancer was caused by viruses and did not have a genetic basis. Indeed, the Nowell-Hungerford paper in *Science* was not immediately embraced. But what it showed, according to the Lasker Foundation, was "the first clear evidence that a particular chromosome can lead to a population or clone of identical cells that accumulate in numbers to form a deadly malignancy." The researchers were the first to describe a consistent cytogenetic abnormality associated with malignancy – subsequently christened the Philadelphia chromosome. John Tomaszewski, M.D. '77, G.M.E. 83, the interim chair of Penn's Department of Pathology and Laboratory Medicine and a former student of Nowell's, describes it as "a discovery that changed in a very significant way how we think about cancer."

The two discoverers of the Philadelphia chromosome, photographed in the early 1960s. David Hungerford is on the right.

Building on Nowell's work, scientists later discovered the gene that causes CML; more recently, too, scientists were able to produce Gleevec, a drug that can block the effects of the gene and cure the disease in a great proportion of cases.

Honors and More Honors

But back to this year's honors. Philadelphia's Franklin Institute presented Nowell with the 2010 Benjamin Franklin Medal in Life Science. In addition to noting the impact of the Philadelphia chromosome, the institute also highlighted Nowell's discovery that irradiation allowed improved bone marrow transplants in mice, even when it came from a different species. It also noted that Nowell found that a plant protein called phytohemagglutinin (PHA) could be used to stimulate cell division. As Nowell described it in his "personal perspective" called "From Chromosomes to Oncogenes" (1993): "Subsequently, . . . PHA combined with improved hypotonic solutions and the air-drying technique, described in collaboration with Paul Moorhead and Bill Mellman as well as Dave Hungerford, became the standard lymphocyte culture method that remains widely used for routine constitutional chromosome studies."

This April also saw a campus symposium in Nowell's honor, "Genetic Basis of Cancer." Experts in the field, both members of the Penn faculty and distinguished scientists from other institutions, spoke. Then, in May, Nowell received an honorary Doctor of Science from the University of Pennsylvania. According to the citation, Nowell's discovery of the Philadelphia chromosome "significantly advanced the world's understanding of the genetic basis of this disease and provided the modern foundation for the fields of cancer biology and cancer genetics."

The citation also made note of Nowell's other forms of service to the School of Medicine and to the University. He was the first director of what is now Penn's Abramson Cancer Center, and he served as chair of the Department of Pathology and Laboratory Medicine for six years.

And no consideration of Nowell as professor would be complete without noting his role in the classroom. As his Lindback Award for Distinguished Teaching demonstrates, he has earned the admiration of his students and colleagues in the sphere of education. As Tomaszewski puts it, "I remember being a medical student in 1974, listening to a chalk talk on clonal evolution in neoplasia by this white-haired professor with a big smile. No slides, just passion and enthusiasm for a concept and the opportunity to convey that concept to students." In addition, as mentor and advisor, Nowell was well known to have a door that was always open to students and colleagues. As he wrote in his "Personal Perspective," he sought to show young researchers the importance of "an environment that allows them to pursue unexpected findings, question accepted dogma, and enjoy the privilege of investigating the complexities that underlie human disease." That outlook is an essential part of Nowell's legacy as well. ■

– John Shea

Photo by Marguerite Miller

Amy Gutmann, Ph.D., Penn's president, reads the citation honoring Peter Nowell at this year's Commencement.

By John Shea

Awaiting the Impact

What changes will health-care reform bring to medical practice? A panel of experts presents some likely scenarios.

This spring, the most far-ranging health-care bill in decades was finally hammered out by Congress and signed into law by President Obama. Many of the effects of the reform act will not be seen for years, but people in both academic medicine and private practice are already planning for the changes to come. What might those changes be, and what impact will they have on academic medical centers like Penn Medicine? That was the theme of a presentation during Medical Alumni Weekend in May, moderated by Ralph W. Muller, CEO of the University of Pennsylvania Health System.

Muller began by asserting that the nation was facing the biggest change in health-care payment and delivery since Medicare. Then he introduced the panelists: a Wharton professor, a senior partner at what Muller called "one of the biggest IT firms in the world," and a professor of general internal medicine at Penn.

First to speak was Lawton R. Burns, Ph.D., the James Joo-Jin Kim Professor of Health Care Systems and Management in the Wharton School. Referring to the 1,617-page health-care act, he said, "I'm going to talk about *one* page." That page, however, is an important one, all about CER. "Health care is famous for three-letter acronyms," Burns continued, explaining that this one stands for "comparative effectiveness research." It is a topic that is evolving, but essentially CER, according to the U.S. Department of Health and Human Services, is "the conduct and synthesis of research comparing the benefits and harms of different interventions and strategies to prevent, diagnose, treat, and monitor health conditions in 'real world' settings." Its purpose is to improve health outcomes by developing and disseminating evidence-based information to patients, clinicians, and other decision-makers. Although most CER has focused on similar units of analysis, Burns said that there will be more comparison of different units – for example, a particular drug or procedure compared to a behavioral intervention. Comparative effectiveness research will be, said Burns, "a huge sea change."

With the new information technology, practitioners will be able to collect data from disparate sources in a more powerful way and analyze it to come to the most sophisticated diagnoses.

For hospitals and academic medical centers, there are some very positive aspects to CER. Burns predicts a major increase in funding for them to conduct comparative effectiveness research. In the past, academic researchers have been really good at conducting N.I.H. studies but not good enough "in studying ourselves or how we do things the way we do." He expects a large impact on suppliers, who will be asked increasingly to show the effect of what they provide on clients and patients – in other words, to "document" the value of what they do.

That point provided a handy segue to Thomas Enders III, managing director and senior partner at CSC Global Health Solutions Practice, who concentrates on projects involving strategy, organizational effectiveness, and information technology.

He spoke about how to get data that would demonstrate the value cited by Burns.

The Obama administration, said Enders, has made "a huge bet" on technology. The health-care bill calls for improving quality and safety and reducing disparities in care. Health-care providers must be accountable – but to measure the quality of care, there must be standardized data. Enders suggested three main initiatives would gain momentum. A workforce will have to be developed in order to handle the data; incentives will be created to establish the "meaningful use" of electronic health records; and there will be much greater exchange of health information – "to break down some of the silos." To demonstrate what is meant by "meaningful use," Enders showed a slide that compared a pumpkin and "meaningful use of a pumpkin" – in this case, pumpkin pie with whipped cream!

In its ideal form, the technological change would mean practitioners would be able to collect information from disparate sources in a more powerful way; to analyze it to come to the most sophisticated diagnoses; and subsequently to develop new treatments based on this meaningful data. But the challenge, Enders added, is to work effectively across departmental and other silos.

Katrina Armstrong, M.D., M.S.C.E. '98, was the panelist directly involved in clinical care. She is associate professor of general internal medicine at Penn and associate director of the Abramson Cancer Center. Armstrong, for one, does not look ahead with trepidation. "This is an incredible time to be in academic medicine," she said, adding "in *any* kind of medicine." Her theme for the session was how doctors think about their patients. "We all grew up in a paradigm," which usually meant seeing patients twice a year. Now, however, "we're dramatically changing the paradigm," thanks to such developments as improved information technology, CER, and what Armstrong described as "a major next step – personalized medicine."

Today, when Armstrong sees a patient, she has already collected information on her. In the past, the emphasis was on curing; now it is shifting to preventing. Collecting the information gives the doctor the ability to know the likely risks a patient will face. Furthermore, outcome data then updates and broadens the information available and helps doctors figure out what works best – for the individual patient and for patient populations.

An example of "meaningful use"

Armstrong noted that some experts were skeptical that older patients could be won over to the new information age. But she said that more than 40 percent of the enrollees on myPennMedicine, the new online health-management tool that provides patients with secure and confidential access to their personal medical record, are in their 50s, 60s, and 70s. Later, in response to a question from the audience, Armstrong added that a new effort is to encourage healthy behaviors by their patients. Engaging the public involves more than prescribing the right drug. But she also noted that the doctors themselves have to be engaged more and more as well. That can also mean transforming the behavior of providers. In Penn's health system, for example, default order sets have been changed to accord with the best evidence.

Given all the discussion about electronic health records, one alumnus asked whether such information could be stolen or corrupted. "Absolutely!" responded Enders, noting the challenges of keeping it secure.

Muller brought the discussion to a close by asking the panelists what they foresaw as the most profound change in the next five years.

For Enders, it would be "the tremendous growth in clinical decision support." It will not be merely a form of "cookbook medicine" but will in fact support an individual clinician's ability to provide better care. "I'd say that the coming next trend is to bring together all this information and make it available immediately at the clinicians' fingertips," so that they would have swift access to the best decision support, the best current protocols, the best information.

"The flip side of that," according to Burns, "is physicians will be subject to more scrutiny in terms of how they treat patients than they've ever been scrutinized before." He predicted that physicians will face more efforts to try to change the ways they practice.

Armstrong, who said she agreed with those forecasts, added that the biggest transformation she expects is in how new providers will think about their patients. They will not only be thinking about "the patients in front of them" but the population made up of all the patients they are responsible for in their practices. And those practices will be increasingly based on *teams* of health-care providers, not only physicians. ●


Part of the da Vinci robot, operated from a console.

By Sally Sapega

TORS A Revolutionary Approach to Head and Neck Surgery

Penn's program in TransOral Robotic Surgery preserves a better quality of life

Early last July, Cynthia Miller was visiting her daughter in Florida – and looking forward to a trip to Trinidad later that month – when she developed a slight cough. She went to a nearby clinic to have it checked, just to make sure it was nothing serious. The doctor took one look and said, "You need to see a specialist right away."

A CAT scan showed a tumor that had started in her left jaw and grown upward to the bridge of her nose and down toward the base of her brain. "It was enormous – and had been growing for probably 40 years," says Miller. "But I never felt anything." A biopsy indicated that the tumor was benign, but it was pushing against her windpipe. There was no question that it had to be removed.

After returning to Philadelphia, Miller found an ENT specialist who assured her that he and his team could remove the tumor. But the procedure would be extremely invasive. "I would be cut from the back of my ear down to my neck. They'd have to remove four to five teeth, break my jaw bone, and then peel back my skin and dig out the tumor," Miller recalls. "I looked at the doctor and said, 'You have got to be kidding me.'"

Although she set a tentative date for the surgery, she could not begin to imagine undergoing the procedure. In her mind, the facial scarring and possible loss of speech and swallowing from the radical surgery would end her career as a motivational


Cynthia Miller: still feeling great

speaker and corporate trainer – and her life as she knew it. Turning to the Internet, she discovered Bert W. O'Malley, M.D., the Gabriel Tucker Professor and chair of Penn's Department of Otorhinolaryngology – Head and Neck Surgery, and learned about how he used robotic surgery.

She made an appointment and hoped for the best.

Comparable Outcomes and Faster Recovery

Typical treatment for patients with head and neck tumors may involve a combination of radical surgery, radiation therapy, and chemotherapy. To reach the small, hidden areas within the mouth and throat often requires making an incision across the throat running nearly from ear to ear or splitting the jaw. Studies have shown that nearly one-fifth of the patients who undergo such surgery lose their ability to swallow and require a permanent feeding tube. In addition, as O'Malley points out, "The ones that retain the ability to swallow might have a restrictive, liquid-only diet."

In an attempt to avoid this invasive surgery, some practitioners have used higher levels of both chemotherapy and radiation. That approach, however, did not eliminate the need for a feeding tube in up to 30 percent of cases. "And the majority of my patients say that chemo or radiation is the hardest thing to go through," says O'Malley. "We're pushing the dosing high to take away the surgery, but the results can be as destructive."

Compared to the devastation of open surgery – and the side effects of increased chemotherapy and radiation – the minimally invasive approach of transoral robotic surgery (TORS) is revolutionary. Entering the patient's mouth through tiny incisions, the miniature instruments of the da Vinci robot mimic the movements of the surgeon. The surgeon operates the robotic arms with both hands and feet from a command center several feet from the patient. A three-dimensional computer screen shows a magnified view of the surgical site, allowing surgeons to see it more closely than human vision allows.

TORS was researched and developed at Penn. Leading the effort were O'Malley and Gregory S. Weinstein, M.D., professor of otorhinolaryngology and director of head and neck surgery. The technique can treat certain malignant and benign tumors of the tongue, tonsil, and upper voice box. Still,

as O'Malley notes, Penn surgeons were not the first to try this approach. "In 2004, colleagues from other medical schools reported that robots were not feasible for this type of surgery," he says. "Never tell surgeons they can't do something."

The results from Penn's 370 patients treated so far demonstrate that TORS improves the long-term swallowing function. Indeed, of all the patients with oropharyngeal cancer who underwent TORS in Penn's clinical trials, only one patient (2 percent) required a permanent feeding tube. The outcomes have been as good as – or better than – standard chemotherapy, radiation, or traditional open surgical approaches for these types of cancers.

It is no surprise that TORS patients experience faster recoveries, less scarring, and reduced pain. As O'Malley puts it, "TORS has dramatically improved the way we treat head and neck cancer patients, completely removing tumors while preserving speech, swallowing, and other key quality-of-life issues."

Cynthia Miller can attest to his words. On a Friday in early November, O'Malley performed a one-hour robotic procedure to remove the tumor. Miller woke the next day feeling no pain. "At first I wondered, when will the pain kick in?" It never did. Sunday night she was transferred out of the ICU, and by Monday she was ready to go home. "I felt fantastic – no pain, no discomfort." Miller was discharged after her ability to swallow was confirmed.

O'Malley was pleased but not surprised by Miller's quick, painless recovery. He recalled an earlier case in which he removed a tumor from a patient's trachea in an 18-minute TORS procedure. Like Miller, this patient had been facing traumatic surgery and a long, drawn-out recovery. She was discharged from HUP – free of pain – within three days.

In Miller's case, she was back at work and eating solids within two weeks. She had even returned to her regular five-mile walks. The original invasive procedure would have required a three-week hospitalization and a recovery of up to 12 months.

Gregory Weinstein, M.D., operates from the console during a TORS procedure.

Three months after surgery, Miller reported she is still feeling "great." She even joked about the one downside to this procedure – "I was counting on losing some weight!" – but emphasized how grateful she is.

"No one should ever have to go through that other experience if this procedure is available."

The Future of TORS

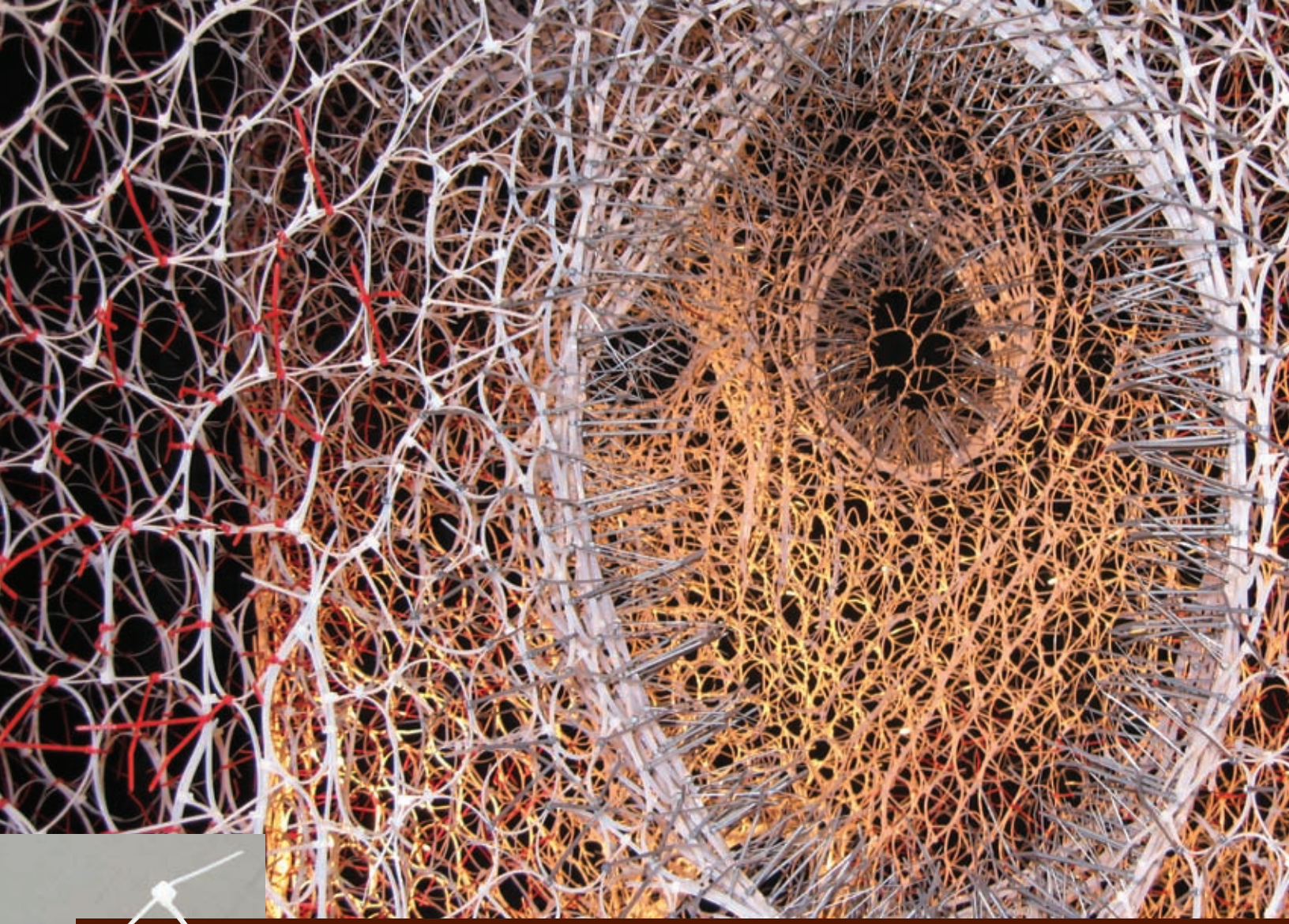
The success of TORS in treating certain kinds of head and neck tumors has led researchers to investigate its use in other diseases. One example is sleep apnea, in which throat muscles intermittently relax and block a person's airway during sleep. "We can use TORS to remove excess tissue in the back of the tongue that exacerbates sleeping problems in a 20-minute procedure," says Weinstein. The surgery, he explains, does not affect movement or the ability to taste. The TORS team is also collaborating with Penn Neurosurgery to use the technique to remove skull-base tumors and repair cervical spine disease.

For their accomplishments, O'Malley and Weinstein shared one of the Awards of Excellence, the highest honor the School of Medicine bestows on medical faculty. Theirs was the Luigi Mastroianni Clinical Innovator Award, which recognizes physicians who have made "significant contributions toward the invention and development of new techniques, approaches, procedures, or devices that change medical practice and are of major benefit to patient care."

In 2007, Penn developed an international training program that has already trained 30 surgeons from six continents, many of whom have instituted TORS programs of their own. In January of this year, the Food and Drug Administration approved TORS (and the da Vinci System) for treating benign tumors and certain malignant tumors in adults. The governmental approval will allow Penn to expand its training program to include surgical teams throughout the United States. O'Malley and Weinstein have also written a book on transoral robotic surgery, published this year.

"We want to train others so they can help thousands of patients everywhere," says Weinstein. "Our procedure is changing the face of all head and neck surgery."

For more on the TORS program: http://www.uphs.upenn.edu/pennorl/research/tors/ ●



Visualizing the Complexities of Biological Processes

A pioneering collaboration between Penn cell biologists and architects wins an international competition.

As a piece of art and design, it is startling, impressive in conception, scale, and execution. "Branching Morphogenesis," a three-dimensional installation, is 12 feet high, 15 feet wide, and eight feet deep. It is made from 75,000 interconnected and color-coded cable zip ties – a figure astonishing in itself. At the sites where it has been exhibited – SIGGRAPH in Los Angeles and (through 2010) the Futurelab within Ars Electronica in Linz, Austria – visitors were able to walk through its five vertical sheets. But what *is* "Branching Morphogenesis"?

It is a giant datascape, derived from a newly developed, interactive software simulation package, that illustrates the way in which human lung endothelial cells interact with their surrounding extracellular matrix, an adhesive, interactive network of proteins. Each sheet of the cable zip ties represents a phase during the formation of branched networks of blood vessels.

It is also the winner of the 2010 International Science & Engineering Visualization Challenge, which drew 130 entries from 14 countries. Sponsored by the National Science Foundation and the American Association for the Advancement of Science, "Branching Morphogenesis" appeared on the cover of the February 19th issue of *Science*, the association's magazine.

"Branching Morphogenesis" was designed and produced by the Sabin+Jones LabStudio at Penn. The directors are Peter Lloyd Jones, Ph.D., associate professor of pathology and laboratory medicine in the School of Medicine, and Jenny E. Sabin, M.Arch., lecturer in architecture in the School of Design. Research associate Andrew Lucia, M.Arch., and Annette Fierro, M.Arch, associate professor of architecture, both in the School of Design, made up the rest of the team. LabStudio is a teaching, research, and design unit based within Penn's Institute for Medicine and Engineering and the School of Design. "As far as we are aware," notes Jones, "LabStudio is a unique entity in the U.S. and abroad." Since 2007, it has brought together architects, mathematicians, materials scientists, and cell biologists to collaborate actively in developing, analyzing, and often abstracting dynamic biological systems through the generation and design of new tools that are subsequently re-applied to tackle pressing problems in design and biomedicine.

"Our collaboration is not about borrowing from each others' disciplines, nor is it about mimicking nature," explains Jones. "Rather, it is about the production of new modes of collaboration, thinking, working, and creating."

Jones is a fellow of the Non-Linear Systems Organization (NLSO), a research group at PennDesign, and director of Penn-CMREF Center of Pulmonary Hypertension. He also holds a secondary appointment in the Department of Architecture (School of Design). His overall work focuses on understanding how cell and tissue architecture, at the level of the extracellular matrix, controls lung development, breast cancer, and pulmonary vascular disease. His translational work, some of which was developed in LabStudio, aims to discover new molecular markers for the diagnosis and treatment of patients with pulmonary arterial hypertension.

Sabin's research and practice focuses on investigating the contextual, material, and formal intersections between architecture, computation, and biology. A founding member and research director of the NLSO, she is also the first non-scientist to be a member of the Institute for Medicine and Engineering.

"In a collaborative environment composed of architects and cell biologists," says Sabin, "we are challenged by the following question: How do we intuit, see, and understand complex wholes that are often indiscernible from their individual parts?" "Branching Morphogenesis" represents one approach. ●

– John Shea

For a slide show of "Branching Morphogenesis," visit www.sabin-jones.com.

Development Matters

A TRIBUTE TO HENRY A. JORDAN

Penn Medicine recently lost one of its most devoted alumni and friends. Together with his wife, Barbara "Barrie" McNeil Jordan, the late **Henry A. Jordan, M.D. '62, G.M.E. '67**, was a steadfast champion of Penn Medicine and our students. One of the most committed, generous, and active graduates of our School of Medicine, Henry will be greatly missed.

Henry once said, "One of my greatest joys has been meeting the bright students who have been supported by our family's scholarship funds. I believe these talented graduates will become the stars of the health care system in America – and that bodes well for the health of this nation. I could not be more proud to be part of the Penn Medicine family."

Henry was born into that family. Both of his parents – Claus and the pioneering Charlotte – graduated from the School of Medicine in 1929. As a Penn Medicine graduate, Henry soon distinguished himself, becoming a noted specialist in behavioral modification and an authority on weight-loss programs. He was a co-founding director of the Institute for Behavioral Education and was a clinical associate professor of psychiatry at the School of Medicine. He also shared his family's dedication to improving lives, which he did through his medical practice, his research, and his philanthropic and many volunteer activities.

"We are so proud that Henry became such a vital part of the Penn Medicine family," said **Arthur H. Rubenstein, M.B.,B.Ch.**, executive vice president of the University of Pennsylvania for the Health System and dean of the School of Medicine. "He embodied all that is great about our institution: intellectual achievement, as well as compassion for and a commitment to serving others. His presence on our campus will be greatly missed."

A Proud Tradition of Service

Even with his leadership commitments to a wide variety of organizations in Philadelphia and Chester County, Henry always found time for his medical alma mater. Using a growing stack of index cards to keep records initially, he is credited with launching the School's first alumni fundraising development efforts. He served as class agent for the medical school's Class of 1962 for many years – leading his class to the distinctions of largest total gift, highest gift average, and highest percentage of participation. He was also president of the Medical Alumni Society. With Barrie, he would host members of the Class of 1962 in their home each reunion year and was chair of their 25th Reunion.

Henry served on numerous committees and boards at Penn, most notably as chair of Penn Medicine's campaign and co-chair of the University's "Making History" campaign, and was an inaugural member of Penn Medicine's Board of Trustees. He was recognized for his extraordinary commitment to Penn Medicine with the School's first Medical Alumni Service Award, as well as with the University's Alumni Award of Merit.

Scholarship Support: Shaping the Lives of Future Physicians

Henry and Barrie recognized that perhaps our students' greatest need was financial support, which attracts less attention than Penn Medicine's research and patient care missions. The Jordans and their family members supported a number of scholarship funds at the School of Medicine, including the Medical Class of 1962 Scholarship. Most recently, they created the Jordan Family Challenge Fund with the goal of inspiring others to support our students. So far the fund has raised more than $800,000 in gifts and matches.

"My concern about finances almost caused me to take a different path," explains **Nicole Langelier**, who is on track to receive her Ph.D. and M.D. degrees in 2011. "I was tormented by the decision whether I should attend Penn Med or my state university for half the cost. Hearing that I received a scholarship thanks to the Jordan family was an incredible feeling and allowed me to attend the school of my dreams!" Nicole is just one of more than a dozen students and young physicians who have directly benefited from the Jordans' philanthropy.

Henry's generous spirit clearly touched many people throughout the University, and they have responded to his passing. As of this writing, members and friends of the Penn Medicine family have donated more than $500,000 in gifts to the **Dr. Henry A. Jordan Endowed Scholarship Fund** to honor his memory.

"The value of Henry and Barrie's support of our outstanding students cannot be measured simply in terms of dollars and cents," explains **Gail Morrison, M.D. '71, G.M.E. '76**, vice dean for education. "Because of their generosity and dedication, these talented young people have been able to develop relationships with

Penn's renowned faculty and build bridges throughout Penn's entire research enterprise."

The Jordan Center for Gynecologic Cancer: Fostering Innovative, Compassionate Care

Just as the Jordan family supported the future of medicine, they also wanted to make an impact on the current practice of medicine. The Jordan Center for Gynecologic Cancer at the Abramson Cancer Center was created to embody all of the hallmarks of superior care at Penn Medicine: a multi-disciplinary, collaborative approach to care and research. The Jordan Center creates a setting that makes patients and their families feel welcome and comfortable during a difficult time in their lives.

"You can see how our patients are so grateful for the supportive and warm atmosphere at the Jordan Center," says **Ralph W. Muller**, CEO of the Health System. "The Jordans have helped Penn Medicine advance the standard of care, as well as spur breakthrough research, thanks to this leading-edge facility. Their wonderful gift of compassion will touch lives for years to come."

An Enduring Legacy

Henry's leadership, ready smile, kindness, and generous sense of humor encouraged everyone around him to attain their goals. His legacy to help make the lives of others better will live on at Penn Medicine.

"Henry and I were fortunate to share a deep commitment to both scholarship support and Penn," says **Barrie Jordan**. "Penn was very good to our collective families for several generations, and we had fun being a part of an institution working hard to care for the medical future of so many people. It was wonderful to share my life with such a kindred spirit."

*If you would like to make a contribution to the **Dr. Henry A. Jordan Endowed Scholarship Fund** to honor the memory of Dr. Henry A. Jordan, or to leave a message for Henry's family, please visit the Penn Medicine Alumni Web site at www.med.upenn.edu/alumni/henryjordan.html*

You can also make a donation to the fund by sending a check to:

Dr. Henry A. Jordan Endowed Scholarship Fund
c/o Penn Medicine Development and Alumni Relations
3535 Market Street, Suite 750
Philadelphia, PA 19104
Checks should be made out to the "Trustees of the University of Pennsylvania."

Alumni Events

August
Friday, August 13 – Parents and Partners Program and White Coat Ceremony, 8:00 a.m.-3:00 p.m., Philadelphia.

September
Tuesday, September 21 – Back to School Reception: Phillies vs. Houston Astros, 5:30-10:30 p.m., Philadelphia.

Tuesday, September 28 – Otorhinolaryngology Reception, 7:00-9:00 p.m., Boston.

October
Tuesday, October 5 – American College of Surgeons Reception, 6:00-8:00 p.m., Washington, D.C.

Saturday, October 16 – Ophthalmology Reception, 7:00-10:00 p.m., Chicago.

November
Sunday, November 7 – American Association of Medical Colleges: Annual Meeting, 6:00-8:00 p.m., Washington, D.C.

You can find out more about these and other upcoming events at www.med.upenn.edu/alumni/calendar. Please send your questions to PennMedicine@alumni.med.upenn.edu.

Recent Gifts

The **Abramson Family Foundation**'s recent gift of $25.5 million, one of the five largest gifts made to a college or university in the U.S. this year, will support innovative research and care initiatives at the Abramson Cancer Center.

Through his estate, **Dr. Robert Austrian**, Professor Emeritus of the School of Medicine, established trusts in honor of his stepdaughters, Toni Amber and Jill Bernstein, that will perpetually contribute to the School. The trusts are valued at more than $3.5 million.

Longtime contributors to Penn Medicine **Walter Gamble, M.D. '57, and Anne Gamble** recently funded 12 new full scholarships to the School of Medicine.

*To make a gift to Penn Medicine, or for more information, please contact the **Office of Development and Alumni Relations**, 3535 Market Street, Suite 750, Philadelphia, PA 19104-3309, or call 215-898-0578.*

Progress Notes

Send your progress notes to:
Andrea Pesce
Assistant Development Officer
PENN Medicine Development and Alumni Relations
3535 Market Street, Suite 750
Philadelphia, PA 19104-3309

'40s

John A. Buesseler, M.D., G.M. '49, G.M.E. '51, Lubbock, Texas, Emeritus Founding Dean of the School of Medicine and Emeritus Founding Vice President for Health Sciences at Texas Tech University, was recently named a Distinguished Friend by the Rawls College of Business of Texas Tech. He was honored as Founding Chair of the Department of Health Organization Management there, a joint-venture department started by the medical school and the business school in 1971. In 2005, he received the Statesmanship Award from the Joint Commission on Allied Health Personnel in Ophthalmology as co-founder, incorporator, and a former president, director, and commissioner of the organization. Also in 2005, he was awarded an honorary degree as Doctor of Humane Letters by the Texas Tech University System. An ophthalmologist by training, he is a veteran of World War II, the Korean War, and the Vietnam War.

'50s

David E. Kuhl, M.D. '55, G.M. '59, professor of radiology at the University of Michigan Medical School, was one of the two recipients of the 2009 Japan Prize, considered one of the world's most prestigious awards in science and technology. According to the Science and Technology Foundation of Japan, Kuhl was recognized for his contribution to tomographic imaging in nuclear medicine. A recipient of the Distinguished Graduate Award, the highest honor bestowed by Penn's School of Medicine, Kuhl is a Fellow of both the American College of Radiology and the American College of Nuclear Physicians.

'60s

Nikitas Zervanos, M.D. '62, G.M.E. '66, received the Pennsylvania Medical Society's 2009 Distinguished Service Award. He credits a residency program he helped establish at Lancaster General Hospital for earning him the honor. The program, for which he interviews 3,000 medical students who apply each year, educates doctors on the need for continuing care of patients. Zervanos was one of the first physicians in the country to tackle development of a three-year specialization program that would put family medicine on a growing list of recognized medical disciplines. When he retired in 2002 as director after 33 years, Zervanos was the longest-tenured leader in the residency program. He has also held faculty positions at Penn State College of Medicine, Harvard Medical School, and Penn's School of Medicine. He has written nearly 50 publications and scientific book reviews.

Edward J. Zobian, M.D. '66, was this year's honoree at the third annual Berks Visiting Nurse Association's Health Care Champion Breakfast. Zobian was honored for his local career as a progressive eye surgeon, specializing in cataract removal and lens implants, as well as for 20 years of aiding the poor at a free eye clinic in the Philippines.

Frank N. Turner, M.D. '67, Eugene, Ore., a retired internist and pulmonologist, reports that he and his wife, Pam, will be riding bicycles this summer from the westernmost lighthouse in the continental U.S. (Cape Blanco, Ore.) to the easternmost (West Quoddy Head, Maine). The 4,000-mile trip is to benefit Volunteers in Medicine, a national organization, and Turner will be raising money and recruiting volunteers for the VIM Clinic in Lane County, Ore. The clinic serves the needs of the medically underserved who live and work in the county. Turner began volunteering at the clinic in 2001. Information about the clinic and Turner's progress can be found at www.vim-clinic.org.

'70s

Alexander Ierokomos, M.D. '78, has joined Franciscan Medical Group. He is a board-certified ear, nose, and throat surgeon who specializes in reconstructive surgeries of the head and neck. He also performs surgical procedures to treat various types of cancer, facial trauma, and ear and sinus disorders.

Marie Savard, M.D. '76, G.M.E. '80, has joined the Network of New Courtland, a leading long-term care provider of community services, affordable senior housing, nursing homes, education, and workforce development. As corporate medical director, she will serve as the chief medical advisor to New Courtland's board of trustees and will represent the physicians' perspective on the senior management team. Savard will coordinate and oversee all medical care and clinical standards in use throughout New Courtland's network, which encompasses seven nursing homes, a home health agency, a telehealth company, a LIFE program (modeled after the nationally renowned PACE program), and an adult day center slated to open in the spring of 2010. An ABC News medical contributor and frequent keynote speaker, Savard is a trusted voice on health, wellness, and patient empowerment. Her most recent book *is How to Save Your Own Life: The Savard System for Managing – and Controlling – Your Health Care*. Savard is also a trustee of the University of Pennsylvania.

'80s

Robert Geller, M.D., G.M. '86, a physician specializing in hematology and medical oncology, has joined the medical staff of Southern Ohio Medical Center as senior medical director of medical oncology. Before going into private practice, Geller held faculty positions at the University of Chicago, Emory University, and the University of Arizona. He has published more than 150 articles, abstracts, and book chapters related to the care of patients with hematologic and oncologic problems.

William Soden, M.D., G.M.E. '86, was chosen as president-elect of the medical staff at Advocate Lutheran General Hospital, in Park Ridge, Ill. Certified in internal medicine, anesthesiology and critical care, Soden is medical director of the surgical intensive care and surgical intermediate care units at the hospital.

Steven Levine, M.D., G.M. '87, of ENT and Allergy Associates in Trumbull, Conn., was selected for the 10th consecutive year as one of the *Top Doctors: New York Metro Area* by Castle Connelly Medical, a national health-care research and information company that surveys physician peers. Board certified in otolaryngology, head and neck surgery, Levine is a senior attending surgeon at Bridgeport Hospital and an assistant clinical professor at Yale University School of Medicine.

'90s

James Kuo, M.D. '90, has been appointed as chairman, CEO, and president of Adeona Pharmaceuticals, Inc. The company, based in Ann Arbor, Mich., focuses on the diagnosis and treatment of central nervous systems diseases. Previously, Kuo was chairman and CEO of Cordex Pharma (La Jolla, Calif.), which specializes in cardiovascular drugs.

Paul A. Frohna, M.D., Ph.D. '95, was named chief medical officer for ProFibrix B.V., which develops innovative products for hemostasis and regenerative medicine. He has extensive preclinical, clinical, and regulatory experience, and he has held senior management positions at companies such as Fibrogen Inc., CV Therapeutics, and Genentech. He has an undergraduate pharmacy degree with honors from the University of Texas at Austin College of Pharmacy, a Ph.D. degree in pharmacology from the Penn, and an M.D. degree from Georgetown University Medical School.

Santosh Kesari, M.D. '96, Ph.D., was appointed chief of neuro-oncology in the Department of Neurosciences and associate professor of neurosciences at the University of California at San Diego School of Medicine. Kesari, also director of neuro-oncology at the Moores UCSD Cancer Center, specializes in treating brain tumors.

Marc Neff, M.D. '96, was recently named medical director of the bariatric surgery program at Kennedy University Hospital in Stratford, N.J. A Fellow of the American College of Surgeons, Neff oversees the clinical operations of the program, recently accredited by the American College of Surgeons. Neff completed a five-year general surgery residency at York Hospital in York, Pa., followed by a two-year fellowship in minimally invasive surgery at St. Peter's University Hospital in New Brunswick.

Michael J. Paglia, M.D. '98, Ph.D., recently joined the women's health department of Geisinger Health System, serving Danville, Scranton, and Wilkes-Barre. He has a doctorate in public health with a focus on health-services research and has been an assistant professor of obstetrics and gynecology at Brown University School of Medicine.

Christopher D. Sullivan, M.D. '98, has joined Centerpoint Medical Center of Independence, Mo., as the hospital's chief medical officer. He received his master's degree in public health from Johns Hopkins Bloomberg School of Public Health. Sullivan comes to Centerpoint from Excela Health Westmoreland Hospital in Greensburg, Pa., where he was the associate chief medical officer and vice president of medical affairs. He is a Fellow of the American College of Preventive Medicine.

Michelle Butterworth, M.D., G.M.E. '99, was named secretary-treasurer of the American College of Foot and Ankle Surgeons, which has 6,000 members. She practices with Pee Dee Foot Center in Kingstree, S.C., and is board certified in foot surgery and reconstructive rear foot and ankle surgery by the American Board of Podiatric Surgery.

OBITUARIES

Percy L. Owens, M.D., G.M. '28, Bismarck, N.D., retired obstetrician and gynecologist; December 2, 2009.

John D. Helm Jr., M.D. '38, G.M.E. '42, Lancaster, Pa.; December 23, 2009. He completed a fellowship in gastroenterology at Evans Memorial Hospital in Boston in 1942. He was an assistant instructor at Penn and later an instructor at Boston University School of Medicine. From 1943 to 1946, he served in the U.S. Army as a captain. He was board certified in internal medicine and gastroenterology and was a fellow of the American College of Physicians. Helm was a senior physician at the Lancaster General Hospital until 1980, serving on its credentialing and by-law committees. He also served on the courtesy staff at Saint Joseph Hospital.

Richard E. Miller, M.D. '41, G.M.E. '49, Tamaqua, Pa.; January 29, 2010. He joined the U.S. Army at the outbreak of WWII and eventually advanced to major. He served in the European Theater of the war in General Patton's Third Army as battalion surgeon of the 553rd Engineer Battalion and later at the U.S. Station Hospital in Etampes, France, and received four battle stars. After the war he served a three-year residency in obstetrics and gynecology at HUP. He practiced in his Tamaqua office from 1949 to 1995, while also serving as chief of Ob/Gyn at the former Coaldale State General Hospital.

Richard Lace, M.D. '42, G.M.E. '46, Verona, Pa., a retired pediatrician; November 5, 2009. From 1944 to 1946, he served as a physician in the Army, then took a second residency at Children's Hospital of Buffalo, N.Y. He worked in the pediatric department at Dallas Medical and Surgical Clinic in Texas for two years, then opened a practice in Tarentum, Pa. He is said to have been the first pediatrician in the Allegheny-Kiski Valley, where he treated about 7,000 children during a career of more than 35 years.

Robert McClelland, M.D. '44, G.M.E. '53, Vero Beach, Fla., a retired ophthalmologist; October 30, 2009. He was a veteran of World War II, serving in the U.S. Army Medical Corps. He was a longtime professor and staff member at the Columbia Presbyterian Medical Center.

James R. Eynon, M.D., G.M. '47, Medford, N.J.; September 17, 2009. He had practiced in Camden and Cherry Hill. He was one of the founders of the South Jersey Medical Center, where he practiced from 1956 until his retirement in 1976.

James L. Royals, M.D., G.M. '47, Jackson, Miss.; August 25, 2006. He trained in obstetrics and gynecology at St. Margaret Memorial Hospital in Pittsburgh, where he was chief resident. In 1950, he began private practice in obstetrics and gynecology in Jackson, Miss. Five years later, the University of Mississippi Medical Center opened, and Royals was a member of its original clinical faculty. He was a diplomat of the American Board of Obstetrics and Gynecology and a fellow of the American College of Surgeons and the American Academy of Obstetrics and Gynecology. He was a former president of the Mississippi Obstetrical and Gynecological Society.

Joseph C. Bacon, M.D., G.M. '48, Ojai, Calif.; January 19, 2010. He served in the Korean War as a radiologist aboard the U.S.S. *Haven*. After leaving the Navy in 1955, he started a private practice in San Diego. He then served as a hospital radiologist in Ojai until retirement.

Virginia Craemer Oler, M.D. '49, G.M.E. '53, Bethesda, Md.; January 21, 2010. She worked for the Washington, D.C., Department of Public Health and was a member of many nonprofit institutions, including the Columbia Hospital for Women.

J. Jackson Stokes, M.D., G.M. '49, Atlanta, a former ophthalmologist; October 12, 2009.

Lloyd B. Harrison Jr., M.D., G.M. '50, Wilmington, Del., a former otolaryngologist; November 30, 2009.

Edith Strick Sheppard, M.D., G.M.E. '51, Meadowbrook, Pa., a retired psychiatrist; May 3, 2007.

Paul V. Rouse, M.D., G.M. '52, Newtown, Pa.; November 25, 2009. He practiced urology at Nazareth Hospital for more than 50 years. After he retired from private practice, he was a surgical assistant at Nazareth Hospital and a house doctor.

Joseph J. Rovinsky, M.D. '52, G.M.E. '56, Larchmont, N.Y., January 4, 2010. An obstetrician-gynecologist whose career spanned more than 55 years, he worked until age 80. He was a former chief resident in Ob/Gyn at Mount Sinai Hospital. Early in his career, he was author of *Medical, Surgical, and Gynecologic Complications of Pregnancy* with Dr. Alan Guttmacher, a highly influential text that helped define the field of perinatal medicine. He was also co-author of *Clinical Hypertension*. Rovinsky was a strong advocate of women's rights and was ahead of his time in recommending that women have a choice regarding having an elective Caesarean section. In the course of his career, he was chief of Ob/Gyn at Elmhurst Hospital, Long Island Jewish Hillside Medical Center, and Sound Shore Medical Center.

Rennert M. Smelser, M.D., G.M. '55, Lutherville, Md., a retired surgeon; September 29, 2009.

Frank L. Weakley, M.D. '55, Strongsville, Ohio, a retired surgeon; November 17, 2009. According to Dr. Frank Fazio, chairman of the Digestive Disease Institute at the Cleveland Clinic, in his day, Weakley "was the busiest stapling surgeon in the United States and taught generations of colorectal surgeons at the Cleveland Clinic in the art and craft of this discipline." Weakly had been medical director of the Rupert B. Turnbull School of Enterostomal Therapy at the Cleveland Clinic, which established a scholarship in his name for students in the field of wound, ostomy, and continence nursing. After retiring from the Cleveland Clinic, he served as

medical director of the Seasons of Care Home Health Agency. A former president of the Northern Ohio Hospice Association, he had been a vice president of the American Society of Colorectal Surgeons. He was one of the authors of *Atlas of Intestinal Stomas* (1967).

June Anne Dibb, M.D. '56, Ho-Ho-Kus, N.J.; January 13, 2010. A long-time psychiatrist, she held appointments as assistant clinical professor at the Albert Einstein College of Medicine in the Bronx, N.Y., and attending psychiatrist for Bergen Regional Health in Paramus, N.J.

Stephen J. Mucha, M.D. '56, Woolwich Township, N.J., a retired captain in the U.S. Navy Medical Corp.; June 22, 2009. A career naval officer of 26 years, he served as chairman of the Department of Surgery at the Naval Regional Medical Center in Philadelphia from 1971 to 1978. After retiring from the Navy, he served as medical director for GE/Lockheed Martin in King of Prussia, Pa., until 1997. He was a member of the recovery mission for the first American astronaut in 1962.

Margaret E. Sarver, M.D. '58, Beaver Falls, Pa.; December 22, 2009. She was an internist who had her own practice in Beaver Falls for 38 years.

John L. Cornog Jr., M.D. '60, G.M.E. '64, Madison, Conn.; July 26, 2008. He completed his internship at Yale and returned to Penn for his residency in pathology. He practiced academic pathology at Indiana University, Yale, and the University of Rochester. Later in his career, he taught pathology at a variety of medical schools and practiced in New Haven, Conn.

Robert D. Fazzaro, M.D. '74, Vineland, N.J., a pulmonologist; November 9, 2008. He was named the 1996 Physician of the Year in Cumberland County by the Center for Home Health Development in Princeton. In 2003, he was named medical director at Lincoln Specialty Care, a long-term care facility and rehabilitation center in Vineland. He also served in the Air National Guard Reserve as a flight surgeon.

Dennis C. Gray, M.D., G.M.E. '78, Haddonfield, N.J.; November 16, 2009. He worked as an anesthesiologist at several hospitals and facilities in the Greater Philadelphia area and finished his career with Kennedy Health System in South Jersey.

Francis Nettl, M.D. '85, G.M.E. '87, Thailand; February 22, 2009. A native of England, he did his residency in San Diego, Calif., followed by a stint with the U.S. Navy as a sports medicine doctor.

Carol M. Seabrook, M.D. '05, Woodstown, N.J.; February 17, 2010.

FACULTY DEATHS

John D. Helm Jr. See Class of 1938.

Robert I. Katz, M.D., Philadelphia, former assistant professor of medicine at HUP and Penn-Presbyterian Medical Center; October 21, 2009. After joining the University in the 1970s, he worked in the Penn Heart and Vascular area of Presbyterian until resigning in 2001.

Edith Strick Sheppard, M.D. See Class of 1951.

Richard B. Singer, See Class of 1939.

Joseph C. Touchstone, Ph.D., Rosemont, Pa., emeritus professor of obstetrics and gynecology; July 26, 2009. He came to Penn as a research associate in 1952 and was appointed research assistant professor of biochemistry in 1958. He also worked in the Harrison Department of Surgical Research, part of Penn's Department of Surgery, and became a full professor of obstetrics and gynecology in 1968. He became emeritus in 1992. Widely regarded as a pioneer in biochemical chromatography, Touchstone studied amniotic fluid to determine the level of fetal lung viability in women who were at risk for having premature infants. He also conducted research on steroids. He was co-founder and first president of the Chromatography Forum of Delaware Valley. He published more than 300 papers and 15 books.

LEGACY GIVING

A Daughter's Loyalty Leads to a Lifesaving Gift

Catharine Ducker was a loyal and devoted daughter to her parents, J. Ralph Custer and Sadie Egolf Custer. They were hardworking merchants who owned and operated a candy store and saved every penny so their daughter could attend Barnard College in New York. Ms. Ducker remained grateful for their generosity and when it came time to make her estate plans, she chose to honor her mother and father. Ms. Ducker created a bequest and was adamant that her legacy gift support an admirable cause.

A lifetime Norristown resident, Ms. Ducker knew about Penn Medicine and the Abramson Cancer Center's outstanding reputation and decided that it was the perfect beneficiary. Ms. Ducker's bequest provides crucial funding for groundbreaking cancer research and therapies. Although no one in her family was directly touched by cancer, she wanted her gift to make an impact on the lives of patients in need. Ms. Ducker's gift is a wonderful example of the power of philanthropy through planned giving.

Ms. Ducker chose a bequest because it was easy to arrange and her assets were not affected during her lifetime. Penn Medicine's Office of Planned Giving provides sound guidance for those who wish to make a legacy gift, and a bequest is one of the most common ways to give. Whether you are establishing your first will or wanting to supplement your existing estate plan, you can create your bequest with the following language:

"I hereby give, devise, and bequeath to the Trustees of the University of Pennsylvania, a non-profit corporation organized and operating under the laws of the Commonwealth of Pennsylvania and located in Philadelphia, Pennsylvania, the sum of $ ___ [or percentage of your estate or specific description of the gift] to support Penn Medicine."

If you would like to discuss establishing a bequest to support Penn Medicine, or if you need customized bequest language, please contact Christine S. Ewan, J.D., senior director of Planned Giving, at 215-898-9486, or you can e-mail her at cewan@upenn.edu. For more information, please visit the Web site at www.plannedgiving.med.upenn.edu.

The Centrality of Teaching

Our School of Medicine has long aspired to fulfill three interrelated missions – excellence in education, research, and patient care. More recently, Penn Medicine and many peer institutions have added a fourth mission, community service, articulating our responsibility to help improve the health and the lives of the people around us. I have believed for a long time, however, that teaching and education are an integral part of the other missions and cannot really be separated from them. In research, for instance, there are numerous opportunities for mentoring and teaching. Our role is to make discoveries and involve and collaborate with our trainees in the process. Similarly, at an academic teaching hospital, we seek to treat and cure patients while instructing our students and trainees how to do the same. Our clinicians frequently educate patients as well. We can show them how to be aware of symptoms, how to reduce the chances of getting certain diseases, and so forth.

In community service, we also share our learning with our neighbors, who are often our patients. One notable example that embodies this mission is the Dr. Bernett L. Johnson Jr. Sayre Health Center in West Philadelphia. There, Penn Medicine provides primary care, diagnostic testing, screenings, immunizations, and more to the high school's students and their families while offering service-based learning opportunities for our students and those in other Penn schools. The center also holds workshops on nutrition and many other topics and offers some hands-on experience to Sayre students interested in careers in health care.

Therefore, education, I suggest, is the underpinning for all our missions. If we look back to the beginning of universities and academic medical centers, we find their original purpose was to provide training and teaching. The other components, as valuable as they are, came later.

I'm sharing these thoughts because of an important event earlier this year, an "Overview" of education at Penn Medicine. It was a first step in a larger program strongly recommended by the steering committee of our Medical Faculty Senate. The program seeks to ensure that all our faculty members, who are expected to teach, have the tools and experience to contribute to our teaching mission. The first phase was designed for new faculty at all ranks and provided an overview of the venues and opportunities for teaching at Penn Medicine. That's by no means all: new assistant professors will be required to take part in two additional programs that relate most closely to their teaching responsibilities, their interests, and their developmental needs. These programs – for example, "Writing Effective Test Questions in the Basic and Clinical Sciences" and "Providing Effective Feedback to Trainees in Clinical Settings" – are run by our very capable Office of Faculty Affairs and Professional Development. Our faculty can also take advantage of the University's Center for Teaching and Learning, which offers individual consultations and more general programs.

As I mentioned in my opening remarks at the Overview session, in the past everyone assumed physician-scientists knew how to teach. I hope I am not destroying anyone's illusions, but experience and observation have shown that is not universally true! Some faculty members are better teachers than others. Still, we firmly believe that everyone can improve their teaching skills. That's why we have developed our various programs.

I also encouraged our faculty members who were new or fairly new to teaching to pay attention to feedback from students and house staff. As I found out myself, the process is not always pleasant – and I learned that the students and trainees at Penn are remarkably frank! Nevertheless, I took the criticisms seriously and worked to improve my teaching. I know I'm not alone in such experiences. Emma Furth, M.D., the professor of pathology and laboratory medicine who introduced the Overview, has written a vivid account of her own experience. As she tells it, she had sound principles and sought to do away with "the curse of memorization and allow for creativity and an open mind" (*Almanac*, November 24, 2009). Still, when she began teaching, things did not go so well: "The student evaluations came back and I read their harsh and biting comments. . . . I secluded myself in my office and cried." But that was not the end of the story, given Dr. Furth's sense of purpose. She made some small adjustments, and the criticisms soon became praise. In fact, in 2006, she won the University's Lindback Award for Distinguished Teaching, its highest honor in that area.

At the Overview, several members of our faculty and administration spoke on different aspects of teaching and its central role at Penn Medicine. One point several speakers made is how important it is for faculty members to document their experiences. A teaching dossier, meticulous and informative, is essential when our departments and the Office of Provost consider candidates for reappointment or promotion.

Dr. Furth emphasized something that may not be obvious: teaching is fun and none of us should fear it. I agree. Back in 2001, I had my first encounter with Penn's campus press. Someone asked whether I expected to be able to teach. I replied, "I wouldn't come if I couldn't teach. . . . It's in my bones and blood, and that's why I love universities." But I also noted that outstanding students are crucial for keeping the faculty energized and on their toes. I feel the same today. ●

Arthur H. Rubenstein, M.B.,B.Ch.
Executive Vice President of the University of Pennsylvania for the Health System; Dean, School of Medicine

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As a summer volunteer at Sulayman Junkung General Hospital in The Gambia, Kathryn Hall witnessed how sorely the hospital needed dependable power. For patients, electricity could mean the difference between life and death. Now a Penn medical student, Hall founded an organization that has funded construction of a lifesaving solar-energy system for the Gambian hospital.