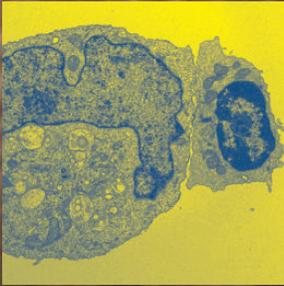
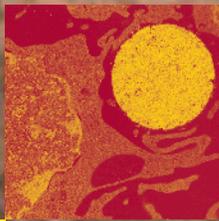


PENN Medicine

SPRING 2011

PERELMANS'
RECORD-SETTING
\$225 MILLION GIFT
RENAMES MEDICAL SCHOOL

VACCINES



IN THE VANGUARD

**Dean Rubenstein Leaves His Mark:
10 Years of Success
A Little Program That Flourished:
“Bridging the Gaps”**

Gaps and Transformations

The cover article of our Winter 2010/2011 issue was about a study by Penn Medicine investigators to find strategies to achieve greater equity for women in academic medicine. The study – “Transforming Academic Culture” – is supported by a grant from the National Institutes of Health. Women are overrepresented in the lower ranks. A 1995 study found that only 5 percent of women had achieved the rank of full professor while 23 percent of men had. Ten years later, another study found that women held 11.5 percent of the full professorships – at the same time that women now made up half the students in medical school.

As reported in the article, Penn investigators are testing interventions to correct this rather extreme imbalance. I suspect other medical schools will be paying attention if the interventions are successful. But as a few articles that have appeared elsewhere since the *Penn Medicine* piece suggest, fixing the pay gap and position gap in the medical profession will not be easy. An article in *Health Affairs* (February 2011) examined the starting salaries of physicians finishing their training programs in New York State from 1999 to 2008. The sample size was 8,233 physicians. Even while avoiding “confounding variables,” the investigators demonstrated that “the gap in starting salaries between male and female physicians existed throughout the ten-year survey period, despite the fact that proportionately fewer women were entering the lower-paying primary care fields.” In 2008, the male physicians newly trained in New York State earned on average \$16,819 more than comparable female physicians – a wider gap than there was at the start of the study period.

The authors of the study do suggest one possible explanation: “female phy-

sicians may be seeking out employment arrangements that compensate them in other – nonfinancial – ways,” such as greater flexibility and “family-friendly attributes.”

“The Pyramid Problem,” in *The Chronicle of Higher Education* (March 9, 2011), looks not at women M.D.s but at women Ph.D.s working at American universities. Unfortunately, the situation sounds familiar. According to Mary Ann Mason, the author, “We measure gender equity in three important ways: representation on the faculty, pay, and family formation. Put simply: There are far fewer women than men at the top of the academic hierarchy; those women are paid somewhat less than men, and they are much less likely than men to have had children.” Women made up 23 percent of full professors. As Mason also points out, not all tenure-track jobs are of equal weight, and women are least well represented at doctoral-level institutions. The pyramid, she argues, “is unlikely to change its shape without serious structural transformation.”

Transformation is precisely what the Penn Medicine investigators are trying to achieve.

It is my sad task to report that Albert Lewis, principal in the design agency of Lewis & Nobel Design, died on April 13, after a two-year battle with pancreatic cancer. Al was busy working on the design and layout of *Penn Medicine* up to a week before his death. That was not a surprise to those who knew him, because his dedication and attention to detail were remarkable. Al began designing *Penn Medicine* with its very first issue, back in Fall 1987, when the

firm was still Lewis & Engstrom. When I became editor of the magazine for the Spring 1998 issue, I was very happy to have so talented and experienced a designer to lean on.

Al was a graduate of the Philadelphia Museum School of Industrial Art (now the University of the Arts) and a veteran of the Korean War. During his career as an artist and designer, he created award-winning publications, logos, and communication materials for some of the most prominent foundations and educational institutions in Philadelphia, including The Annenberg Foundation, The Pew Charitable Trusts, and LaSalle University. He also designed labels and packaging for Dock Street, the Philadelphia beer, which he mentioned one day when I happened to raise a bottle of Dock Street Bohemian in his presence.

With much of the credit going to Al, *Penn Medicine* received the Peppercorn, the highest award, in the magazine category for both 2009 and 2010 in the annual competition run by PRSA Philadelphia, the local chapter of the Public Relations Society of America. In addition, the cover of the Spring 2010 issue of *Penn Medicine*, illustrating an article on autism research, won two awards: an American Graphic Design Award from Graphic Design USA; and the Gold Medal in the Visual Design and Print category, from the 2010 CASE District II Accolades Award Program. One of my favorite *Penn Medicine* covers appeared in 2005. For that issue, Al found a local artist, Wally Neibart, to bring to life our somewhat crazy idea for illustrating an article on Penn's Weight and Eating Disorders Program: it showed the familiar pair from Grant Wood's *American Gothic*, with substantially more poundage!

Al will certainly be missed. Graham Perry, who worked very capably with Al on *Penn Medicine* for several years, designed this issue. ■





VACCINES IN THE VANGUARD

By Jessica Stein Diamond

At Penn Medicine, physician-scientists are creating new DNA vaccines that hold great promise for fighting disease more effectively, with fewer side effects. Less like a drug in a bottle or a vaccine in a vial, they are “more like a next-generation blood transfusion.” But the new vaccines are expensive, and funding can be hard to find.



A 'MOMENTOUS' GIFT – AND A NEW NAME

Raymond and Ruth Perelman have made a \$225 million gift to rename the School of Medicine. It is the largest single gift ever given to the University of Pennsylvania and creates a permanent endowment for the school.



A DECADE OF SUCCESS

By John Shea

After 10 years as dean of the School of Medicine and executive vice president of the University of Pennsylvania for the Health System, Arthur H. Rubenstein steps down from what he once called a “job made in heaven.” His faculty, colleagues, and professional organizations agree: he filled the role with distinction.



A NOVEL IMMUNE THERAPY FOR PANCREATIC CANCER

By Holly Auer and Rabiya Tuma

Penn researchers have discovered a novel way to treat pancreatic cancer – by activating the immune system to destroy the “scaffolding” of the cancer. The investigators believe their findings could lead to quicker, less expensive development of cancer drugs.



A QUIET LITTLE REVOLUTION

By Jennifer Baldino Bonett

Bridging the Gaps, a unique community-health program with grass roots at Penn, has reached 20 years. And it shows no signs of slowing down. The program connects students from academic health centers in Pennsylvania and, more recently, in New Jersey with community agencies to provide health-related supports and education.

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TRAILBLAZERS, INVENTORS, AND TEACHERS

By John Shea

Britton Chance and Christian Lambertsen, both alumni of the medical school and long-time members of its faculty, died in recent months. They were among Penn's most honored and admired professors, and their achievements had an impact on the world outside academe.



ISLET CELL TRANSPLANTATION: A PATIENT'S PERSPECTIVE

By Andy Gordon

Andy Gordon, living with diabetes, entered a clinical trial at the University of Pennsylvania. Islet cells taken from a donor pancreas would be transplanted into his liver. If the procedure was successful, the new islets would begin to produce the insulin his own body did not produce.

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Visit Penn Medicine's web site: <http://www.uphs.upenn.edu/news/publications/PENNMedicine/>

The School of Medicine Receives a ‘Momentous’ Gift – and a New Name

The Perelmans' \$225 million gift is the largest single gift to the University of Pennsylvania.

On the evening of May 10, an e-mail message from President Amy Gutmann reached Penn alumni with a message that could hardly be believed: Raymond and Ruth Perelman were contributing \$225 million to Penn's School of Medicine, the largest single gift ever given to the University and the largest single gift to name a medical school in United States history. This “momentous gift,” as described by Gutmann and David L. Cohen, chair of the University trustees, would create a permanent endowment for the school. The school has been renamed the Raymond

According to President Amy Gutmann, the Perelman gift will enable the school “to increase financial aid for our exceptional students, recruit more of the most outstanding medical faculty and clinician educators, and invest more precious resources in innovative research programs that yield life-saving and life-enhancing breakthroughs in medicine and medical care.”

and Ruth Perelman School of Medicine at the University of Pennsylvania.

According to Gutmann, the Perelman gift is “transformational”: it will enable the school “to increase financial aid for our exceptional students, recruit more of the most outstanding medical faculty and clinician educators, and invest more precious resources in innovative research programs that yield life-saving and life-enhancing breakthroughs in medicine and medical

care.” At the same time, the gift will encourage efforts to make Penn a global model of a comprehensive academic medical center that integrates innovative re-



Raymond and Ruth Perelman, center, are flanked, left to right, by David Cohen, Amy Gutmann, and Arthur Rubenstein.

search and education across specialties with the very highest quality of patient care.

One immediate result is that the Perelman School of Medicine will increase its financial aid budget by at least 20 percent for the medical-school class that will enter in 2012.

“Ray and Ruth Perelman’s incredible gift to the University of Pennsylvania School of Medicine will enable us to become an even greater global force for the improvement of human health in the 21st century and beyond,” said Arthur H. Rubenstein, M.B.,B.Ch., then the executive vice president of the University of Pennsylvania for the health system and dean of the Perelman School of Medicine. “They have placed their trust in us to use the gift to do good in the world.”

Raymond Perelman is president and chairman of the board of RGP Holdings Inc., a privately held holding company that includes many manufacturing, mining, and financial interests. He also serves as a Penn Medicine trustee.

“Ruth and I believe the future of medicine depends on the ability to produce world-class clinicians and researchers, the hallmarks of Penn and a Penn educa-

tion,” said Perelman. “We are confident that Penn’s outstanding faculty and students will continue to make significant contributions to medicine in the years ahead.”

The Perelmans are two of Philadelphia’s most prominent philanthropists. In 2005, they pledged \$25 million to create the Ruth and Raymond Perelman Center for Advanced Medicine, which opened in 2008. They have also endowed a professorship in internal medicine at the University. In addition to their support for health care, the Perelmans have made major gifts to the Philadelphia Museum of Art, the Kimmel Center, the Perelman Jewish Day School, and many other Jewish cultural and welfare organizations.

The Perelmans’ gift brings Penn’s “Making History” campaign total to \$3.31 billion. ♥

A Long-Awaited Culmination: From Students to Doctors

On May 15, 147 students received their medical degrees in a ceremony at Philadelphia's Kimmel Center. The event included a Graduation Address by Arthur H. Rubenstein, M.B.,B.Ch., appearing at the ceremony as dean for the last time. Stanley Dudrick, M.D. '61, G.M.E. '68, a prominent professor of surgery and recipient of the School of Medicine's Distinguished Graduate Award, delivered remarks as representative of the 50 Year Class.

Introducing Rubenstein was Amy Gutmann, Ph.D., president of the University of Pennsylvania. She acknowledged his ten years as dean and described him as "an incomparable academic leader." After Rubenstein delivered his remarks, Gutmann returned and surprised him with a special citation from the new graduates. In part, it read: "We have admitted Arthur H. Rubenstein, M.B.,B.Ch., as a member of The Class of 2011."

Among the *other* members of the class, 19 received both M.D. and Ph.D. degrees; five received M.D. and M.B.A. degrees; four received M.D. and M.S. degrees in bioethics; two received M.D. and M.S. degrees in translational research; and two received M.D. and M.P.H. degrees. In addition, 21 percent will pursue additional training in surgery, and just over 30 percent will be going into residency in primary care – a specialty facing a national shortage.

One of the new graduates – who described herself as "not a typical Penn Med student" – is Jennifer Rowland. She graduated from Stanford University in 2002, Phi Beta Kappa, with a dual B.S. degree in economics and Spanish. Her honors thesis, which investigated genetic testing for breast and ovarian cancer, earned her Stanford's top undergraduate research award.

As she noted on a Penn Medicine blog: "By the time I realized that I wanted to become a doctor, there was an entire list of reasons not to pursue medicine. The



As Ralph Muller, CEO of Penn's Health System, looks on, Jennifer Rowland brings her three children to the dais.

path would be hard. I wanted to have children, and because of my own breast cancer risk, my doctors advised me to have children soon. And, because of my husband's career, I was already committed to living in Wilmington, Del., so it would mean commuting at least two hours every day just to get to and from school. . .

"I was already 23 years old, and it would mean starting over. I would have to attend a Post-Bac program before I even started my 10 years of training. . . There were times I only slept a couple hours. There were nights I slept on a friend's couch in Philly and didn't see my family for two days. There were moments I thought I was going to fail. There was a lot of pizza. And yet, as graduation nears, I know the road has been worth it."

What lies ahead? For Rowland, the first step is a transitional year at Christiana Hospital in Delaware. Then she returns to HUP as a radiology resident.

2011. Formerly the Irene Diamond Professor of Immunology and chair of the Department of Pathology at N.Y.U. Langone Medical Center, he served as the director of its Medical Scientist Training Program, as director of the Pathobiology Graduate Program, and as co-director of the Cancer Immunology Program.

Roth's research and clinical interests include DNA repair and the mechanisms of programmed gene rearrangements during lymphocyte differentiation. His research has been consistently supported by the National Institutes of Health.



Roth

Roth is one of the editors of *Immunology*, 7th edition. Elected to the American Association of University Pathologists (The Pluto Society), he is a member of the American Association for the Advancement of Science.

Roth earned his M.D. degree and his Ph.D. degree in biochemistry at Baylor College of Medicine. From 1988 to 1991, he was a resident in anatomic pathology at the National Cancer Institute. For five years, Roth was an assistant investigator of the Howard Hughes Medical Institute.

Roth has won several teaching awards, including the Distinguished Teacher in the Basic Sciences from Langone's 2008 graduating class.

NEW DEAN ARRIVES

On July 1, J. Larry Jameson, M.D., Ph.D., took office as executive vice president of the University of Pennsylvania for the Health System and dean of the Perelman School of Medicine. More to come in our next issue.

Path & Lab Chair

David B. Roth, M.D., Ph.D., was named chair of the Department of Pathology and Laboratory Medicine, effective July 1,

A Decade of Success

By John Shea

A Role Model for Both Professors and Students, Dean Rubenstein Steps Down from His "Job Made in Heaven"



Arthur Rubenstein acknowledges the applause at this spring's Graduation ceremony. President Amy Gutmann is at left.

"I think you should become a physician." Those were words that Arthur Rubenstein was delighted to hear, but ones he had not necessarily counted on hearing from his father. The senior Rubenstein ran a small, independent pharmacy in South Africa. "I used to work at the pharmacy on weekends and nights," says Arthur. "Often I'd come there after school." In fact, Arthur thought it was possible he, too, would become a pharmacist. Because he was also "good at maths," at one point he considered a career in accounting as well. According to Arthur, his father, who had emigrated from Poland, had dreamed of being a physician himself. But his financial situation and family obligations did not permit him to do so. The senior Rubenstein delighted in talking with his customers, offering guidance as he filled prescriptions, and Arthur recalls "imbibing some of that warm human interaction." His father, however, had greater dreams for his son. So when he

advised Arthur to become a physician, Arthur took him seriously.

"I was actually quite an obedient child," he says with a smile, adding, more seriously, "he pushed me to make that decision." It was a decision he would never regret – a decision, in fact, that he praised this year's graduating class for making as well. As he put it in his Graduation address in May: "Even in this changing and challenging world, I believe the opportunities are great, and you have made the absolutely right decision in pursuing a medical profession."

How, from this early stage, did Arthur H. Rubenstein, M.B.,B.Ch., proceed to become the dean of Penn's Perelman School of Medicine, recently ranked Number 2 for the second year in a row among all research-oriented medical schools in the United States by *U.S. News & World Report*? How did he come to oversee a remarkable financial turnaround that brought the medical side of the University of Pennsylvania from the brink of financial disaster to a

solid, even enviable foundation, despite the economic crisis of these last few years? How did he go from being a young medical researcher at the University of Chicago, uncertain about his position in a new country, to the recipient in 2009 of the Abraham Flexner Award for Distinguished Service to Medical Education, one of the most prestigious honors in academic medicine? Now that Rubenstein has stepped down after 10 very successful years, it is time to look back. His is a story of hard work, intelligence, determination, long-held principles, family support, and, yes, a certain amount of serendipity.

The family support came both from parents and, later, from his wife, Denise. Arthur and Denise had met in medical school at the University of the Witwatersrand in Johannesburg. She graduated in 1959, he a year later. One reason the Rubensteins decided to leave South Africa was that there was very little opportunity

Photos by Daniel Burke Photography



Dean Rubenstein added his signature to the beam signing for the Translational Research Center.

for research and almost no funding for it. On the other hand, Rubenstein has nothing but praise for what he *did* learn at Witwatersrand. The focus there was on providing the best patient care and nurturing the physician-patient relationship. His teachers, says Rubenstein, “were incredibly wonderful role models. The model was very important to me, because I came to love and embrace taking care of patients and their families at the highest level. . . . I have lived with that for the next 50 years in a way that I feel very happy and proud about.”

To pursue his research interests elsewhere, however, Rubenstein decided to apply for scholarships and fellowships. He had little success. A turning point came when Dr. T. Russell Fraser, a prominent professor and endocrinologist at Hammersmith Hospital in London, visited South Africa and delivered a series of lectures. Here Denise Rubenstein played an important role. After hearing one of Fraser’s lectures, says Rubenstein, “I was too shy to ask him for a job, but Denise gave me a push and said, ‘Dr. Fraser, Arthur is a very good endocrinologist. He would like to come and work with you.’” As it happened, Fraser told him he was welcome to come to Hammersmith but would have to provide his own money. This time around, with the Fraser name to help him, Rubenstein was able to get a scholarship from a British medical supply company – and the family, now with a one-year-old baby, set out for London. Rubenstein was to be a junior

fellow in endocrinology at Hammersmith. “It was just the most exciting thing,” he recalls, but money was very tight. Still, the combination of Fraser’s fortuitous visit to South Africa, Denise’s firm support, and the financial aid made it possible for them to embark on their adventure.

There was another major reason why the Rubensteins chose to leave South Africa. Apartheid was at its height in the early 1960s. As Rubenstein recalls, “Growing up in South Africa, my wife and I were pained by the unequal quality of health care delivered to different people depending on the color of their skin and of the terrible discrimination that black families faced in everything they did. That experience was seared in my brain and made me realize, every day of my life, how lucky we all are.” Arthur and Denise knew they could not continue to live in that kind of society.

Many years later, Rubenstein’s sense of justice compelled him to speak out on

reform, he added: “Nobody said such an approach will be easy.”

It’s hard not to see the influence of growing up under a system of apartheid in Rubenstein’s embrace of another cause in academic medicine: advancing the role of women as leaders. Apartheid, after all, is one of the more obvious hallmarks of inequality. Even in our medical centers, which pride themselves on being among the nation’s most enlightened institutions, women still make up a very low percentage of tenured faculty, full professors, and chairs of departments. Rubenstein served on a committee of the Association of American Medical Colleges that examined what progress had been made in improving matters. In 2002, the committee issued its report, and the statistics continued to be grim. As dean of Penn’s medical school, Rubenstein has consistently and publicly pushed for more women in senior positions, all as part of a drive for greater

• At the University of the Witwatersrand, the focus was on providing the best patient care and nurturing the physician-patient relationship. “The model was very important to me, because I came to love and embrace taking care of patients and their families at the highest level.” •

behalf of health-care reform in the United States. As he put it in one of his columns in *Penn Medicine*, as a physician he believes that reforming health care “is, first of all, a civic and ethical imperative: the primary goal should be to expand coverage for the millions of Americans who have either no health-insurance coverage or very little. . . . Many of us in academic medicine believe that reducing costs in the way we do our work will allow us to direct those savings toward the expansion of coverage. We must become more efficient, providing a higher quality of care for less.” Acknowledging the difficult and contentious environment for health-care

faculty diversity. His efforts – and the improved situation for women at Penn Medicine – were recognized by Penn’s FOCUS on Health & Leadership for Women, which presented him with its inaugural Visionary Leadership Award last year.

The Rubensteins arrived in London in 1964, in the middle of a snowy winter. London, says Rubenstein, “was incredible,” and Hammersmith Hospital was intellectually exciting, as he had hoped. There was more science applied to medicine than he had seen before, and scientists and physicians worked together. For

15 months, Rubenstein pursued his dream, but then, as he puts it, “we kind of ran out of money.” That meant looking for more jobs, poring over such professional journals as *The Lancet* and the *British Medical Journal*. “I got rejected I can’t remember how many times!” he says. Professor Fraser told him that many of the jobs in medicine were allotted years be-

In August 1967, they landed at O’Hare Airport, the first time either Arthur or Denise had been in the United States. Unlike their first taste of London, with cold and snow, Chicago seemed to simmer at about 105 degrees!

At the University, the twist was that Rubenstein would be a postdoctoral fellow in cardiology, the only slot that was

the University of Chicago Hospitals and Health System notes that Steiner and Rubenstein developed “the first accurate method to measure insulin secretion” in diabetic patients being treated with insulin derived from beef or pork pancreases (by measuring C peptide, the piece that is removed from proinsulin). “It was also key to the commercial production of human insulin for diabetics.” They were also part of a team that discovered the first case of diabetes caused by an abnormal insulin.

After a year, Richard Landau, M.D., chief of the Endocrinology Section, asked Rubenstein if he was interested in an opening for assistant professor. When Rubenstein said he was, Landau asked, “What do you want for salary?” Tentatively, Rubenstein asked for \$12,000. “You are a dope,” responded Landau. “You’re supposed to negotiate with me. Ask me for more.” So Rubenstein asked for \$15,000. “You really are dumb – ask me for a *lot* more!” Rubenstein suggested \$18,000. “That’s too much – I’ll give you \$16,000.” So in July 1968, after this introduction to the delicate art of negotiation, Rubenstein became assistant professor of endocrinology.

From that point, his energy and determination took over, and Rubenstein made the most of the opportunity. As he puts it, “I wrote a lot of papers, won teaching awards, and took care of a lot of diabetic patients. I loved it all.” Outside organizations were paying attention as well. Between 1973 to 1983, he received three awards from the American Diabetes Association and two from the Juvenile Diabetes Foundation. In 1979, he was appointed associate chairman of the Department of Medicine, overseeing teaching. Two years later, when the chairmanship became vacant, he was asked if were interested in that position. Although he told his dean that he was not particularly interested, he became acting chair. When six external candidates turned the position down, the dean approached Rubenstein again, this

• The financial situation of Penn’s Health System was precarious, and continued problems could seriously affect both the School of Medicine and the University itself. Looking back, Arthur Rubenstein says, “I thought it was daunting, but I just felt this was an opportunity I couldn’t turn down – to be a dean in an integrated medical center in a university like this.”

forehand and recommended that he try his luck first in Scotland and Wales. Arthur and Denise even considered jobs in Australia. There was an offer, but at an extremely low salary for a family with, by now, two children.

Then came another stroke of luck: Dr. Godfrey Getz, a South African physician who had emigrated to the United States and was a senior professor at the University of Chicago, visited London and looked Rubenstein up. As Rubenstein remembers it, Getz said, “Why don’t you come as a postdoctoral fellow on an N.I.H. grant – I have a slot.” Rubenstein filled out form after form and mailed them. But in the meantime, the money ran out. With regret, the family returned to South Africa. Rubenstein found a job there and was trying to make the best of the situation.

Then one day good news came in the mail: he had been offered the postdoctoral position. He and Denise consulted with their families. Denise’s father, he recalls, showed them Chicago on a map and warned them about a harsh climate. In the end, their relatives were supportive but sad that Arthur and family would be so far away.

available. Still, he says, “I loved it – the quality of the faculty, the integration, great students. I grew to love universities.” Much as he would discover years later at Penn, the University of Chicago had various schools on the same campus, “all talking about excellence all the time.” Although his heart was still set on endocrinology, Rubenstein realized the value of being trained in the scientific technology. Then came another turning point: taking advantage of the library, he says, “I saw this beautiful article on how insulin is made,” by a certain Donald Steiner. He was pleasantly surprised to learn that Steiner was on Chicago’s faculty and had made “seminal discoveries” in diabetes studies. So Rubenstein asked his mentor if he could introduce them.

With permission, Rubenstein began to work in Steiner’s laboratory at night, while continuing as a cardiology fellow. His very full days soon paid off. Rubenstein, who had published articles earlier in his career in *The Lancet*, *Nature*, and the *Archives of Internal Medicine*, was particularly prolific from 1967 to 1970, sharing authorship of 43 papers (17 of them with Steiner). In its section on “firsts,” the Web site of

time more pleadingly. “So I said, ‘OK, I’ll be the chairman.’ ” It was a position he held for 16 years while also serving as the Lowell T. Coggeshall Distinguished Professor of Medical Sciences.

In discussing this period of his career, Rubenstein puts aside his characteristic modesty: “I built a great department with great people,” he says, and it eventually became one of the leading departments in the country. Again, however, his emphasis is on the people who worked for and with him, “fantastic” faculty, house staff, and students. The department balanced education, patient care, and research – “just like here” at Penn. By the end of his tenure as chair, he had become president of the Association of American Physicians and had received the Robert H. Williams Distinguished Chair of Medicine Award from the Association of Professors of Medicine.

Rubenstein was elected to the Institute of Medicine of the National Academies in 1987 and was immediately put to work as chairman of its Committee on Responsible Conduct of Research. After that two-year term, he also served on the Institute’s Panel on Scientific Integrity for two years. The topic has long been close to his heart, and in 2002-03, he was called upon by the I.O.M. again to serve as chairman of the National Research Council Committee on Assessing Integrity in the Research Environment.

In 1997, Rubenstein was recruited to Mount Sinai School of Medicine as dean and chief executive officer. In part, he was motivated by the attraction of moving closer to his daughter-in-law and his older son, a rabbi and faculty member and professor of religion at New York University. When the call came from Mount Sinai’s president and CEO, John W. Rowe, M.D., Denise Rubenstein was there to answer it. “We’ll accept the job!” she told Rowe. As Arthur explains, Denise “has always negotiated for me. All the

things I can’t do, she did!” And in this case, too, “it turned out to be an absolutely perfect decision.”

Rubenstein enjoyed his stay at Mount Sinai School of Medicine, but, he adds, he missed being at a university. As it turned out, opportunity came knocking once more, this time in the person of Michael S. Brown, M.D. ’66.



Always an eager teacher, Dean Rubenstein speaks to a group of students involved in the Bridging the Gaps program.

The Regental Professor and the Paul J. Thomas Chair in Medicine at The University of Texas Southwestern Medical Center, Brown shared the Nobel Prize in Physiology or Medicine in 1985 with his longtime collaborator, Joseph L. Goldstein, M.D., for describing the regulation of cholesterol metabolism. When he came to Mount Sinai to present a lecture, he also happened to be on the search committee for a new dean at the University of Pennsylvania School of Medicine. According to Rubenstein, it is another example of “how my career’s involved chance.” After delivering his lecture, Brown chatted with Rubenstein. Rubenstein gave him a few recommendations for the deanship,

but Brown also asked, “are you interested?” Maybe, replied Rubenstein.

A week later, Judith Rodin, Ph.D., then the president of the University of Pennsylvania, called. The process began in earnest. Rubenstein met with John Fry, then executive vice president of the University; Dwight Evans, M.D., chair of the Department of Psychiatry, who was leading

the faculty’s search committee; John Glick, M.D., then director of the Abramson Cancer Center; other members of the search committee; other deans and medical students. Coming to Penn was seeming more and more attractive.

Then, as Rubenstein puts it, “Somebody said to me, ‘you know, the finances are not in good shape.’ ” He learned there was a cumulative deficit of more than \$500 million. Because of several reasons – managed care, the competitive purchase of physician practices for a primary care network, a health and disease management organization for which the payoff was years in the future, the Federal Government’s Balanced Budget Act of



Dean Rubenstein congratulates Maria Horch Dugan at this year's Graduation ceremony. Jon B. Morris, M.D., associate dean, looks on.

1997, which Rubenstein described at an administrative meeting in 2001 as “a kind of body blow,” and other factors – Penn's Health System had lost \$98 million in Fiscal Year 1998 and \$198 million the following fiscal year.

By the time Rubenstein was introduced as the new dean and executive vice president of the University of Pennsylvania for the Health System at a campus press conference on July 30, 2001, the Health System under CEO Robert Martin had made great strides toward cutting the losses. In FY 2001, it had an operating profit of \$25 million. As Rubenstein put it at the press conference, “The turnaround has been amazing – truly amazing.” There were still important steps to be taken, especially if the School of Medicine and the Health System were to regain and surpass their previous stature.

And the future was not yet clear. Rubenstein was told by the University trustees that there was still a chance that Penn would

sell the hospitals to a for-profit group or spin the Health System off into a separate 501(c) (3) organization. The goal of such moves would be to protect the University and keep it from going bankrupt if the Health System took another sharp turn for the worse. Rubenstein had strong feelings about the matter. As he recalls, he told the trustees, “If you can put it all together under me, I'll give it a shot, but if you're going to separate it off in separate corporations, I'm not coming.” Indeed, he won a concession: he would have a year or two “to try to get it straightened out with a single organization.”

Looking back, Rubenstein says, “I thought it was daunting, but I just felt this was an opportunity I couldn't turn down, because, you know, it's what I wanted all my life – to be a dean in an integrated medical center in a university like this.” At his first campus press conference, Rubenstein called his new position “a job made in heaven for me.”

One important reason he took the challenge was the faculty. “The faculty was fantastic,” Rubenstein recalls. Despite the setbacks and profound uncertainty, “Nobody left. They all worked their tails off.” Even at his press conference, Rubenstein noted how impressed he was by the faculty's continued faith in the institution. He paraphrased what they told him: the experience was hard to go through, “but we still believe that this place is great, and it's going to be greater.” Together, Robert Martin and Rubenstein “cut hundreds of positions, froze salaries, sold off Phoenixville Hospital later, cut disease management programs. . . . We started to make money, and we paid off the debt.”

The next step was to develop a strategic plan that would involve all those who had a stake in the medical school and the Health System – and that would build upon the successes of the retrenchment. When Martin left, Rubenstein knew exactly who he wanted in the crucial position of Health System CEO: Ralph W. Muller, with whom he had worked in Chicago. Muller, who spent 15 years as president and CEO of the University of Chicago Hospitals and Health System, had also held positions of leadership with the Association of American Medical Colleges. He took office at Penn in May 2003.

The strategic plan was one of Rubenstein's greatest successes. Both faculty members and administrators had input, their views were seriously considered, and the goals that were articulated were widely accepted. In addition to selecting which areas of research and clinical care to support and prioritize, the plan specifically described the goal to “become a more collegial, intellectually exciting, and supportive institution in which to work.” As a result, the School of Medicine established such programs as the Association of Senior and Emeritus Faculty, which helped keep valuable faculty members engaged

in and connected with the Penn community of scholars. The Office of Faculty Affairs was substantially expanded to facilitate the recruitment and appointment, promotion, and retention of distinguished faculty and to assist in their professional development.

That this important goal of the strategic plan has largely been met is suggested by a recent survey of faculty satisfaction. Ninety percent of the faculty who responded were satisfied with “collaboration, mentoring, and feedback.” Eighty-five percent felt their work was appreciated, that the workplace culture cultivates excellence, that there is intellectual vitality, and that colleagues respect a balance between home and work. Perhaps even more telling are the responses to two hypothetical questions: “If I had it to do all over, I would again choose an academic career” (94%) and “If I had it to do all over, I would again choose to work at this medical school” (90%).

Another way to meet the goal of greater collegiality was for the medical school to become more connected to the rest of the University. As Rubenstein put it in one of his early columns in *Penn Medicine*, “There is enormous potential for productive collaboration” among the University’s many schools. Penn has long fostered centers and institutes that involved several disciplines and schools, and under Rubenstein, the medical school launched several important ones, such as the Institute for Translational Medicine and Therapeutics, the Institute for Diabetes, Obesity, and Metabolism, the Penn Cardiovascular Center, and the Institute for Regenerative Medicine. Such centers have enhanced the quality of research across the institution and fit very well with the renewed support of the National Institutes of Health for interdisciplinary research and accelerated translation of basic discoveries to cures.

When Penn Medicine’s long-anticipated Translational Research Center officially

opened in May, Francis Collins, M.D., Ph.D., the director of the N.I.H., was the featured speaker. After touring the facility, he said, “I veritably drooled.” Without a doubt, he asserted, science “will be pursued with creativity and vision” in the new center. For her part, Amy Gutmann, Ph.D., president of the University, said that the Translational Research Center “represents our hope for the future of medicine.” Acknowledging Rubenstein, she added, “There is no better capstone for Penn Medicine’s most passionate advocate.”

The Translational Research Center is not the only building to be constructed during Rubenstein’s 10 years. In fact, the TRC sits atop the Roberts Proton Therapy Center, the largest of its kind in the nation, and is adjacent to the Ruth and Raymond Perelman Center for Advanced Medicine, an innovative facility for inpatients.

To achieve these goals, whether in programs, personnel, or constructions, Rubenstein believed that another significant change was necessary: a new leadership,

of our organization to prosper both individually *and* collectively.” The new governance model reduced redundancy and allowed administrators to be more flexible and to move more swiftly in a volatile economic environment.

On the face of it, Rubenstein’s notion of the best approach to leading in such a difficult and uncertain situation is simple and perhaps anathema in an age of the imperial CEO. He embraced distributed leadership or distributed management. In short, distributed leadership, in the academic setting, means the department chairs have primacy in terms of running things. But with this crucial overarching principle: whatever they do must benefit the institution as well as the departments. The institution, that is, is more important than its parts. According to Rubenstein, that view is fundamentally different from what is found in many corporations or academic health centers, where the titular head runs the place and exercises power. Rubenstein explains that he read “a lot of books on management” and learned as well from “The

• Rubenstein’s “distributed leadership” differs fundamentally from what is found in many corporations or academic health centers, where the titular head runs the place. As he puts it, “the dean and the hospital CEO are here to serve the faculty and the chairs. . . . Our greatness is because there’s shared responsibility.” •

operational, and financial model for running the institution. Thus was born Penn Medicine, an umbrella governance structure that operates, oversees, and coordinates the educational, research, and clinical operations of the Health System, the medical school, and the faculty’s clinical practices. As Rubenstein put it in a *Penn Medicine* column in 2002, the institution “cannot function as an assembly of discrete smaller entities, each with its own set of goals.” At Penn Medicine, “the goal is for all parts

Faculty – 2000 Project,” chaired by James C. Saunders, Ph.D., professor of otorhinolaryngology, which reported on the results of a survey of Penn Medicine faculty in the late 1990s. As Rubenstein puts it, “the dean and the hospital CEO are here to *serve* the faculty and the chairs. I’m here to make the chairs function more successfully.” In addition, he says, “I don’t tell them how to do their jobs – our greatness is because there’s shared responsibility.”

Symbolically, Rubenstein underscored this approach by moving his office from the 21st floor of Penn Tower Hotel to the second floor of the John Morgan Building, a place that also exudes more tradition.

It's not that Rubenstein's distributed leadership lacks teeth. Indeed, he estimates that, of the 28 department chairs, "I'd say about half are new since I came . . . and pretty much all the Health System leadership is new." The leadership of Penn Medicine, in other words, has been recast – and the results speak for themselves. For much of the time, it seemed Rubenstein could proceed as manager and leader with equanimity – or, as one of his idols, Dr. William Osler, once put it, *aequanimitas* – and act coolly even in a crisis. But one longtime administrator suggests that, in certain rare circumstances, he could change tactics and become "the Velvet Hammer."

In 2009, Rubenstein received one of the highest honors in the profession, the Abraham Flexner Award for Distinguished Service to Medical Education, presented by the Association of American Medical Colleges. According to the Association, Rubenstein's career "has come to epitomize what Abraham Flexner envisioned for the future of U.S. medical education, with a greater emphasis on research as part of the medical education experience; an integrated, institutional focus on learning; and, above all, a joy for the university environment and academic medicine as a profession." Citing the comments of his colleagues, the Association described Rubenstein as "the complete academic medicine physician leader."

The financial status of Penn Medicine has improved greatly since its lowest point in the late 1990s, an indication that Rubenstein hired the right people in important positions and made the right decisions. In Fiscal Year 2003, the Health System's operating margin was \$19 million. By FY2007, it has risen to \$259



Arthur Rubenstein with his wife, Denise Rubenstein, M.B., B.Ch., and their older son, Jeffrey L. Rubenstein, Ph.D.

million. For FY2011, the projected margin was \$206 million, an impressive figure given the difficult economic environment of the last three years. As one financial report noted, strong operating margins in the Health System have funded increased support for Penn Medicine's missions of clinical care, research, and teaching. In addition, the School of Medicine most recently had \$690.6 million in research funding in FY2011, nearly three-quarters of that from the N.I.H.

Rubenstein leaves his administrative positions in Penn Medicine while the institution is on solid financial ground. The outlook has been greatly enhanced by the recent record-setting \$225 million gift from Raymond and Ruth Perelman to endow the School of Medicine, which will permit the renamed Perelman School of Medicine to increase financial aid for students, recruit more outstanding medical faculty and clinician educators, and invest in innovative research programs. But Rubenstein is not leaving the institution. Instead, he will be professor of medicine in the Division of Endocrinology, Diabetes, and Metabolism. It is a return to an earlier and probably quieter life, and perhaps he will subsequently sleep more than his customary four or five hours a night, a fact he shared with *The Daily Pennsylvanian* in 2002.

In his Graduation address, Rubenstein acknowledged the complicated and challenging world the new graduates were en-

tering, but he expressed confidence that the younger generation of physicians would be able to find solutions to some of the areas of medicine and health care that most concern their older colleagues. He also touched on a more personal but no less important matter: the physician-patient relationship. Even with all the changes and innovations in medicine, for Rubenstein that relationship is crucial. To be successful, he argued, physicians must also be humble. It is a view much in keeping with those he has articulated during his 10 years at Penn Medicine, when he has been able to teach. As he stated in his first press conference on campus, "I wouldn't come if I couldn't teach." And teach and lecture he did, such courses and topics as the History of Medicine/Professionalism; Bioethics and Professionalism; Community Service; and The Doctor-Patient Relationship. Back in July 2001, he also expressed hope that he could be a role model for the students.

Like the graduates before them, the members of the Class of 2011 appeared to appreciate such efforts. In a surprise gesture, after Rubenstein concluded his Graduation address, President Gutmann presented him with a citation on behalf of the new graduates. It announced that they have admitted him as a member of the Class of 2011. Based on everything people know about Arthur Rubenstein, it's likely this citation will have a special place among his many honors. ♥

A NOVEL IMMUNE THERAPY FOR PANCREATIC CANCER

By Holly Auer and Rabiya Tuma

Researchers at the University of Pennsylvania's Abramson Cancer Center have discovered a novel way to treat pancreatic cancer by activating the immune system to destroy the "scaffolding" of the cancer. The strategy was tested in a small cohort of patients with advanced pancreatic cancer, several of whose tumors shrank substantially. The investigators believe their findings – and the novel way in which they uncovered them – could lead to quicker, less expensive development of cancer drugs.

The authors call the results, published in the March 25 issue of *Science*, a big surprise. "Until this research, we thought the immune system needed to attack the cancer directly in order to be effective," said senior author Robert H. Vonderheide, M.D., D.Phil., an associate professor of medicine in the division of hematology/oncology. "Now we know that isn't necessarily so. Attacking the dense tissues surrounding the cancer is another approach, similar to attacking a brick wall by dissolving the mortar in the wall. Ultimately, the immune system was able to eat away at this tissue surrounding the cancer, and the tumors fell apart as a result of that assault. These results provide fresh insight to build new immune therapies for cancer."

The current study is part of a unique research model designed to move back and forth between the bench and the bedside: the investigative team consists of researchers based in both the laboratory and in the clinic. In the clinical trial led at Penn by Peter O'Dwyer, M.D., professor of hematology/oncology, and Gregory L. Beatty, M.D., Ph.D., instructor of hematology/oncology, patients with pancreatic cancer received standard gemcitabine chemotherapy with an experimental an-

tibody manufactured by Pfizer Corporation. The antibody binds and stimulates a cell surface receptor called CD40, which is a crucial regulator in the activation of T cells. The investigators initially hypothesized that the CD40 antibodies would activate the T cells and allow them to attack the tumor.

The treatment appeared to work, as some patients' tumors shrank substantially and the vast majority of tumors lost metabolic activity after therapy; however, all of the responding patients eventually re-

"It is something of a Trojan horse approach. The tumor is still calling in macrophages, but now we've used the CD40 receptor to re-educate those macrophages to attack – not promote – the tumor."

lapsed. When the researchers looked at post-treatment tumor samples, obtained via biopsy or surgical removal, they could find no T cells. Instead, they saw an abundance of another white blood cell known as a macrophage.

To understand what was happening in the tissues of these patients, Vonderheide, Beatty, and their colleagues turned to a mouse model of pancreatic cancer developed several years ago at Penn. Unlike older mouse models that were simplistic models of human disease, new genetically engineered mice develop spontaneous cancers that are very close reproductions of human tumors.

When the investigators treated mice that developed pancreatic cancer with

gemcitabine in combination with CD40 antibodies, the results looked like those of the human trial. Some mouse tumors shrank and were found to be loaded with macrophages but contained few or no T cells. Closer inspection showed that the macrophages were attacking what is known as the tumor stroma, the supporting tissue around the tumor. Pancreatic tumors secrete chemical signals that draw macrophages to the tumor site, but if left to their own devices, these macrophages would protect the tumor. On the other hand, treating the mice (or patients) with CD40 antibodies seemed to flip that system on its head. According to Vonderheide, "It is something of a Trojan horse approach. The tumor is still calling in macrophages, but now we've used the CD40 receptor to re-educate those macrophages to attack – not promote – the tumor."

The researchers believe that the CD40 antibodies also activated T cells in the mice, but the T cells couldn't get into the tumor or its surrounding tissue. "The area surrounding pancreatic cancers is very dense, fibrotic, and hostile," says Vonderheide. "This is one of the main reasons standard therapies for this disease often work so poorly."

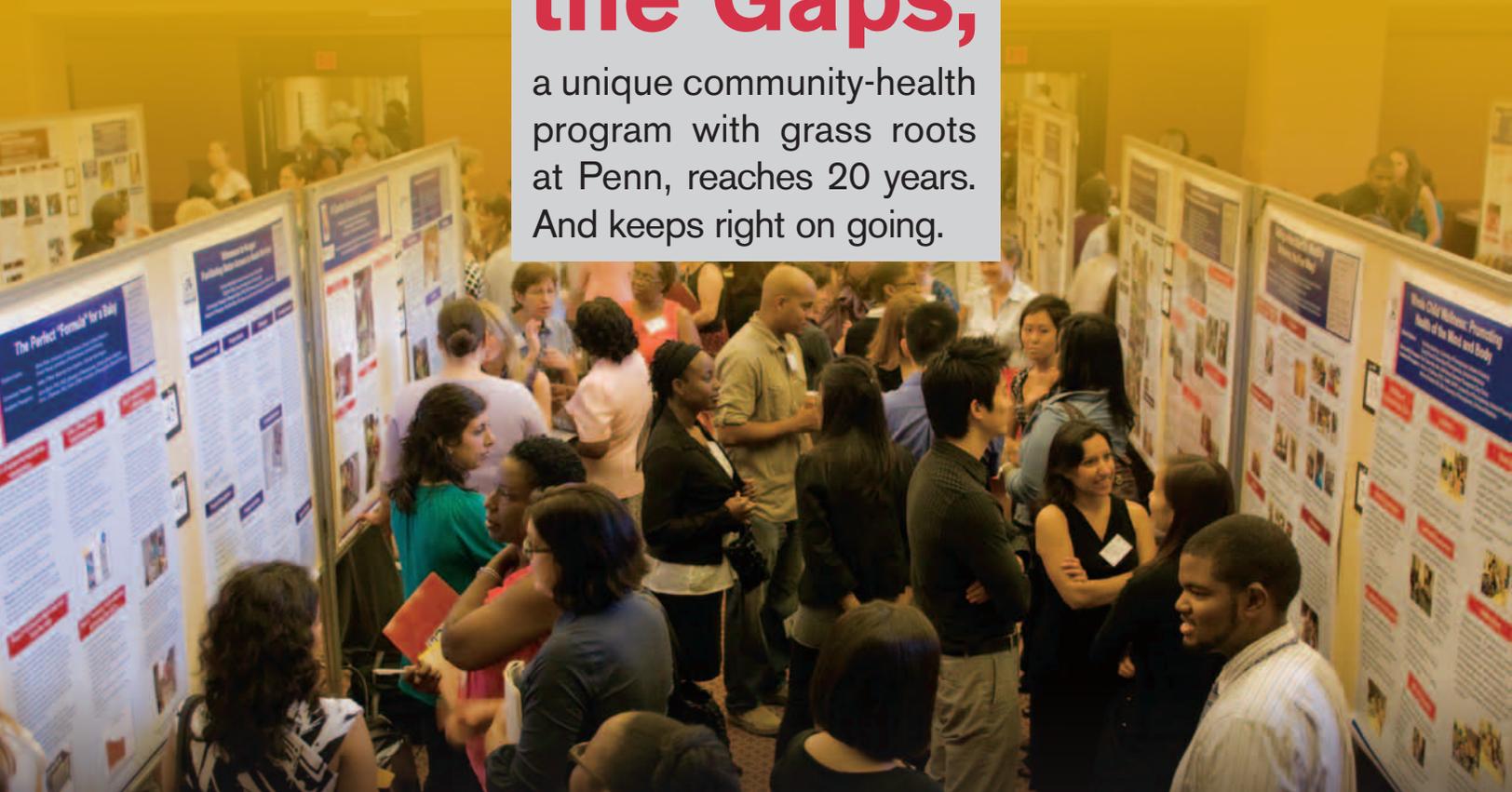
"Beyond our specific findings, we think these findings point to a new approach for drug development in cancer – one where we use state-of-the-art mouse models for preclinical trials to guide which trials we should do next in patients," Vonderheide says. "It should be faster, cheaper, and give us a head start in the clinical trials." ♥

For a related video: http://www.uphs.upenn.edu/news/News_Releases/2011/03/pancreatic-cancer-immunotherapy

At last fall's 20th Anniversary Symposium, more than 80 posters were on display.

Bridging the Gaps,

a unique community-health program with grass roots at Penn, reaches 20 years. And keeps right on going.



By Jennifer Baldino Bonett

Photographs by Addison Geary, except where noted.

A Quiet Little Revolution

In 1990, Cindy Weinbaum and Steve Chapman were first-year students in the School of Medicine. Extremely interested in community health, they were hungry for experience and turned to their professors for advice.

Those professors were Jeane Ann Grisso, Anthony L. Rostain, and Donald F. Schwarz, all physicians with roots in community health and outreach. Inspired by the activist era of the 1960s and 1970s, these physicians were eager to “cook something up,” recalls Rostain, now a professor of psychiatry. That “something” started with a half-dozen committed people, including Lucy Wolf Tuton, Ph.D., who had come to Penn

Med looking for ways to enrich the training of physicians, and Mary Anne Johnston, Ph.D., then director of educational development. Since that summer, Bridging the Gaps has expanded into a unique multi-disciplinary program that links academic health centers in Pennsylvania and now in New Jersey with community agencies to provide health-related supports and education within local communities.

When Bridging the Gaps formally launched in 1991, “we thought it was a funky little program, that it was a nice idea, that it would fulfill a passion to be proactive contributors in collaboration with the local community,” recalls Tuton,

now its executive director. “But I doubt any of us thought it was going to be *this*.”

This is the Bridging the Gaps Network, which has programs at all five academic health centers in Philadelphia (Penn, Drexel University, Philadelphia College of Osteopathic Medicine, Temple University, and Thomas Jefferson University) and affiliated programs at other Philadelphia educational institutions. It also has growing programs elsewhere in Pennsylvania (Erie, Pittsburgh, the Lehigh Valley) and in New Jersey. This is local, regional, and national recognition for Bridging the Gaps. This is a program that, through the Bridging the Gaps Community Health In-

ternship Program, has served communities at some 400 sites and offered hands-on community-health experience for more than 3,400 students. This includes a seminar series and a clinical program in Philadelphia that extends the training for students interested in community service.

Bridging the Gaps . . . in Medical Education

With their vision for a hands-on program in community health, Weinbaum, Chapman, and their faculty advisors wrote a proposal and sent it to The Pew Charitable Trusts. The proposal landed on the desk of Tom Vernon, M.D., then in Pew's division of health and social services.

Vernon, now a policy and public health consultant, was struck by the unique opportunity the program would provide: giving students – eager and with eyes wide open – direct, paid experience in community health. The Pew staff made one suggestion: Make the program broader than Penn. As a result, an unusual partnership developed among several academic health centers and educational institutions and made it possible to avoid duplication of effort. At the same time, collaborating allowed each institution to provide what it did best.

“We were jumping up and down, screaming with pure joy,” recalls Grisso, now a professor of medicine and nursing. “It was one of the finest moments of my life.”

“I genuinely believed then, and more to this day, that this program is extremely important for students,” says Vernon. “Bridging the Gaps is a very useful step in the direction that medicine needs to be going – putting the emphasis not on medical care, but on *health care*.”

It was a new way of thinking about medical education. “For students who already are oriented this way, Bridging the Gaps is a soul-restoring experience,” says Rostain. “Year after year as a preceptor in the Community Health Internship Program,

I see students feeling empowered. It's like they realize *this is why I wanted to be a doctor*. And for students new to the field, it's a real eye-opener. By the end of the summer, it's changed them, giving them respect for the resilience of the communities they serve and a better understanding of the challenges and opportunities of community health.”

To make this new model work, the relationships between the students and community agencies had to be strong – and real. The students would have academic

nothing static about this program. We are constantly thinking about what skills and what understandings are important for our students to have.”

In September 2010, Bridging the Gaps held its 20th anniversary symposium at Rodeph Shalom on North Broad Street in Philadelphia (see sidebar). Bridging the Gaps students presented more than 80 posters about their community-health projects. There were also ten workshop sessions and a talk by Wendell Pierce, an actor and activist who founded the Pont-

Photograph by Daniel Burke



Amanda Holloway, left, a BTG intern from Thomas Jefferson University, lends her support to Shareda Fitzgerald at Covenant House.

and community preceptors. The program would include an academic component for every student. Bridging the Gaps staff would work closely with community agencies to explore their needs and assess how students might enhance their work. Then the students would be matched with the community sites.

“We expect our students to contribute something and not just feel good about themselves,” says Rostain. “Plus, there's a chance to get to know others and learn what it's like to walk in another's shoes.”

As the health-care landscape has changed, Bridging the Gaps has aimed to keep pace. As Tuton puts it, “There is

chartrain Park Community Development Corporation to assist after Hurricane Katrina. About 200 Bridging the Gaps students from the Philadelphia, New Jersey, and Lehigh Valley programs attended, along with representatives from the Erie and Pittsburgh programs.

“Never in a million years” did Cindy Weinbaum, M.D. '93, one of the student founders, imagine how successful Bridging the Gaps would become. Weinbaum, who now works at the Centers for Disease Control and Prevention, calls the program essential to “supporting community health and to supporting students who want careers in community health.”

Bridging the Gaps . . . Between Penn and the Community

Since its inception, Bridging the Gaps has focused on local communities. As a result, students and faculty learn a great deal about the culture, resources, programs, and lives of residents who may become their future patients or clients. BTG also brings community leaders and people from academe together, which can lead to new collaborative initiatives. “Bridging the Gaps is built on the primary values of collaboration,” says Tuton. Support for the program comes from public

“Medical students come with big dreams and idealism, and BTG gives them a way to connect with community early on and make a difference. I can’t stress enough how important this is in the development of professional identity. It was for me, and continues for today’s students.”

**– Steven H. Chapman, M.D. ’93
Director, Boyle Pediatrics Program, Dartmouth Medical School
Medical Director, General Pediatrics Clinic, Dartmouth Hitchcock
Medical Center**

and private grants and donors and from participating academic institutions. In its 20 years, BTG has exceeded the expectations of both its founders and community leaders. In underserved communities, where doctors are often viewed with suspicion and wellness is often neglected, Bridging the Gaps has become synonymous with health-related service and education – and with partnership and trust.

At the Health Annex on Woodland Avenue in Southwest Philadelphia, Lorraine Thomas, its outreach director, had been looking for educational opportunities for her summer-camp kids. In one of its earliest community partnerships, Bridging the Gaps sent medical students eager to share information about nutrition, hand-washing, “stranger danger,” and poison control, as part of the Community Health Internship Program.

Sixteen years later, Thomas recalls the first nutrition class as if it were yesterday. The Penn students asked where French fries come from. Familiar with fast foods, the kids called out “McDonald’s!” and “Burger King!” “Then the Bridging the Gaps students held up a potato,” says Thomas. “The kids had never seen one before.”

Such experiences, she says, “really left an impression on our Bridging the Gaps students about how much our children didn’t know. In Bridging the Gaps, students learn things they don’t get in a classroom setting.” Seeing patients on

their own “turf,” says Thomas, gives the medical students unprecedented insight. “They meet the same people in the ER or in the doctor’s office up at Penn. But when they see [their patients] in the community, it’s totally different. They might get information they wouldn’t get otherwise because [the patients] are more comfortable.”

As part of the Community Health Internship Program, a group of BTG students spends seven weeks every year at the Health Annex. According to Thomas, the students are well known in the neighborhood. “The people at the newsstand say, ‘Oh, those are Lorraine’s kids.’”

This kind of symbiosis with the community was an original goal for Bridging the Gaps. “People kept talking about building relationships, not just doing things to people, but *with* people,” Rostain emphasizes. “Over time, a number of our community

partners began to talk with one another and get things done together, and that began to build trust in a place like Penn.”

Building that trust, says Abby S. Letcher, M.D. ’95, provided lessons on both sides. Letcher, a student coordinator for the first fully operational year of BTG’s Community Health Internship Program, explains: “Bridging the town-gown divide . . . taught us a lot about perception, about who’s the expert and who isn’t, about what is healing and what isn’t, about what our roles are as medical professionals. The people in the community really deal with these issues day in and day out.”

Today, Letcher is on the family medicine faculty at the Lehigh Valley Health Network and serves as medical director for Neighborhood Health Centers of the Lehigh Valley. Inspired by her Bridging the Gaps experiences, she is part of the team that established the first community health center in the Lehigh Valley. “I take the lessons that I learned from Bridging the Gaps and use them every day,” she says. “We ask our students to volunteer, we work to develop respectful partnerships in the community, we have passion for the well-being of our communities, and we are drawing on everybody’s strengths to make it happen.” Recently Letcher collaborated with others to bring Bridging the Gaps to the Lehigh Valley. Another member of the team is Mary Ellen Miller, Ph.D., R.N., assistant professor at De Sales University, who had worked with BTG when she was at LaSalle University.

One of BTG’s earliest partners was Frances Walker’s organization, Parents Against Drugs. She recalls that the children there “learned how doctors and nurses are all right, because usually they [the children] go to the hospital in a traumatic situation.” Walker also was a guest lecturer in a course Schwarz and Rostain used to give. “Bridging the Gaps,” she says, “is teaching the students that their patients have underlying [social and

Bridging the Gaps at Covenant House

health] issues.” Now a consultant for Temple’s medical school, Walker is involved in community activities all over the city. As she puts it, “What a wonderful experience this has been for me.”

Bridging the Gaps . . . Between Medicine and Other Professions

Drawing on diverse strengths is a hallmark of Bridging the Gaps. Built on a multi-disciplinary model, the program brings together students who otherwise might not meet – from medicine, other health professions, and social services – to work together in community settings.

Donald Schwarz, M.D., considers this approach a “very quiet little revolution.” It creates “a shared purpose that has been unique in this program,” says Schwarz, now Philadelphia’s deputy mayor for health and opportunity and the city’s health commissioner. “I would challenge you to find other programs where this varied a set of schools really collaborates.”

The approach resonates with students. Chris Renjilian, a fourth-year student, says Bridging the Gaps drew him to Penn Med. “Making those connections and seeing who our colleagues and our patients are is very important in allowing us to follow the dreams we all have of working in the community.”

Renjilian, currently applying for pediatric residencies, also took part in the two other BTG program components that have been developed in Philadelphia: the seminar series and the clinical program. As a result of completing all three components, Renjilian will graduate as a Bridging the Gaps Clinical Scholar.

While participating in the BTG Community Health Internship Program, Renjilian worked at Covenant House (see sidebar) with a team of three medical students and a student from the Drexel University Creative Arts Therapies Department. The experience opened Renjilian’s thinking to creative approaches to treat-

Covenant House, in the Germantown section of Philadelphia, serves homeless and runaway youth and youth in crisis. Affiliated with Bridging the Gaps since 2002, Covenant House is where it “gets real,” says the executive director, Cordella Hill, M.S.W. Coming from loveless lives, broken homes, and tough streets, the residents of Covenant House need healing for their bodies and their minds. Kenneth Ginsburg, M.D., associate professor of pediatrics at the University of Pennsylvania and medical director at Covenant House, explains that Bridging the Gaps students learn to start their presentations to him with “What this kid really has going for him is . . .” or “What I really find myself loving about her is . . .” That way, they learn to see the strengths and resilience in each patient before they think about how to handle their problems.

“The kids and the Bridging the Gaps students bond,” says Hill. “On so many levels this partnership has worked.”

For the young people at Covenant House, BTG exposes them to positive role models “in a health system they don’t necessarily trust,” explains Hill. The young people start to see the Bridging the Gaps students as part of the staff and even as examples of possible careers. The dental students often hear: “We don’t like dentists, but we like you.”

At the same time, Bridging the Gaps students learn about “regular people in bad situations” which can upend some stigmas of homelessness and abuse. “It’s real life,” says Hill. “It’s messy sometimes, but we as a staff try to come together – every faith and persuasion – and ask for some kind of guidance because we are working with people’s lives. Bridging the Gaps recognizes the seriousness we take with our kids. We need help and we’re not shy to say we need additional help and those additional perspectives.”

Photograph by Daniel Burke



Cordella Hill, M.S.W.

As a short-term crisis center, Covenant House works to establish residents in independent, stable living situations. But it also expects residents to do their share. For example, on a bright day in September, a Bridging the Gaps medical student helped lead a class on job skills. Hill tells her charges: “We will work with you as hard as you are willing to work. If you break your leg and I put you on my back, you’re not going to get very far. If you hop on one leg and lean, we’ll get far. I will not carry you all the way.”

Chris Renjilian, a fourth-year medical student, participated in the BTG Community Health Internship at Covenant House during his first year at Penn Med and then returned to do a rotation there as part of the BTG Clinical Program. He gained insight into adolescent medicine and says he appreciated seeing the attention to “the strengths and resiliency in adolescents rather than what they do wrong.” Bridging the Gaps, he continues, “was an amazing opportunity that enabled me to spend even more time doing something I had already wanted to do.”

– J. B. B.

At the 20th Anniversary

ment. “The observations the therapist made about youth through her music therapy sessions were really important adjuncts to what we were able to do for some of the youths in the clinic,” he says. “We saw more of their personalities, health, and behavior through music than we were able to get through interviews in the clinic. It made me want to connect with and work with people who do all kinds of therapy.”

At Penn, four schools are consistently part of Bridging the Gaps: Medicine, Dental Medicine, Nursing, and Social Policy and Practice. The Law School has recently rejoined the effort. BTG was ahead of its time in inviting Penn’s Dental Medicine to be part of the program from its earliest stages. Joan I. Gluch, Ph.D., points out that, twenty years ago, the link between oral health care and general health care was little understood. Gluch, associate dean for academic policies and director of community health at the School of Dental Medicine, is joined by Maryfran Cummings, M.P.H., R.D.H., in providing expertise in oral health to Bridging the Gaps.

According to Gluch, BTG stands apart from traditional community-service programs because of its instructional component. During each week of their seven-week rotation, students spend four days at their community sites and one day in classes. “Bridging the Gaps allows students to apply theoretical concepts to their community-based activities and reflect on their experiences in the context of improving health within the community.”

That opportunity is also important to social workers and policymakers in training, notes Jeffrey Draine, Ph.D., a professor in the School of Social Policy and Practice. In their Bridging the Gaps experiences, students “face some challenges,” he says. “Some of the things they want to do are met with resistance in the communities, or students are challenged about how



From left to right: Barrie Nussbaum, Yona Silverman, and William Connor Darby.

“They left an impact,” said Shaina Simon, a community preceptor for EducationWorks, Morton Project.

Simon was referring to three students from the University of Pennsylvania, who were summer interns from Bridging the Gaps. William Connor Darby (School of Medicine), Barrie Nussbaum (Social Policy and Practice), and Yona Silverman (Medicine) spent seven weeks with children at Morton Summer Camp, as their subsequent poster put it, “Exercising Bodies and Minds.” Their goal was to urge the children toward healthier eating and physical, mental, and social health.

One approach, said Darby, was helping them to make “practical choices” and eat more modest portions. The interns did that in part by measuring out the amount of sugar in foods. “We sufficiently grossed them out.” For snacks, the interns suggested trail mixes, and they made guacamole, which the children had never seen before. As Nussbaum put it, “One kid saw me eating air-popped popcorn” and tried it: “Hey, that’s really good!” Simon recalled that one child with special needs would bring “regular” chips to camp – but he changed to bring-

ing a multigrain brand with less fat and no cholesterol or trans fat. And teaching dental care was made easier when the Penn Dental bus came by to give free exams.

Clearly, the BTG rotation was a mixture of work and play. As Darby summed it up, “We had a great time.”

On September 24, Bridging the Gaps held its 20th Anniversary Symposium at Philadelphia’s Congregation Rodeph Shalom on North Broad Street. In addition to workshop sessions and a talk by Wendell Pierce, an actor and activist, the event featured a poster session. In the synagogue’s large and airy auditorium, BTG students – like Darby, Nussbaum, and Silverman – were eager to talk about the more than 80 posters assembled. Each poster gave the gist of the community-service initiatives they had taken part in. Students from Penn’s schools mingled with students from Drexel University, Thomas Jefferson University, Temple University, Philadelphia College of Osteopathic Medicine, LaSalle University, University of the Sciences, and Bryn Mawr College, as well as from universities outside Philadelphia and in New Jersey. The

Symposium: Posters and Posterers

enthusiasm in the auditorium was palpable. Here are some additional snapshots.

Natalie Spaccarelli and Keirnan Willett, both in Penn's School of Medicine, did their rotation with Neighborhood Bike Works. Their focus: nutrition and fitness. Spaccarelli noted that they worked with 10 to 12 campers at a time, ranging from 8 years old to 14. They taught the children how to strip down and rebuild a bicycle. The interns took the children out on the bikes, including an all-day trip on the Schuylkill River Trail and off road. "It

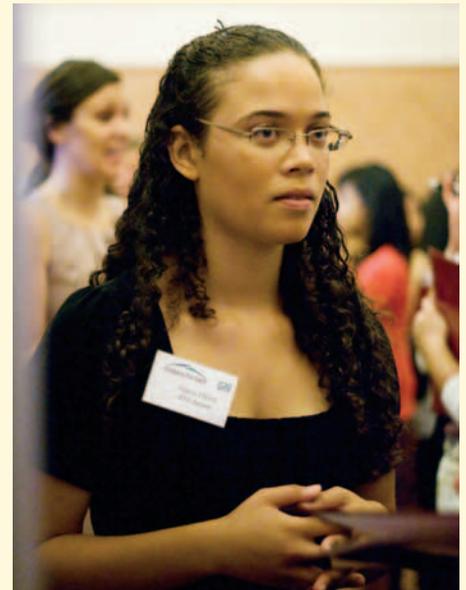


Jonathan Kole

was a blast!" said Spaccarelli. Among the different things they did with the children was to make healthy smoothies, with such unlikely ingredients as kale, lettuce, and broccoli. As Willett noted, they tried to motivate the kids and "give them some take-home skills," such as paying attention to the sugar and vitamins in various foods and drinks. There was also a contest to determine the best-tasting and most nutritious smoothies, and each kid gave his or her smoothie a name.

"Educating and Empowering Youth at South Philadelphia High" was the title of the poster by Jonathan Kole (Medicine) and Deep Shah (Dental Medicine). Here, too, health and fitness played central roles. Shah made use of his connections with labs and was able to bring in some human specimens for the children to examine. As he noted, a fast-food restaurant was "literally next door to the school," so they spent part of the time comparing prices, portions, and nutrition. Finding that many of children had overbites, Shah tried to encourage consistent flossing. If the kids don't floss, he said, "it's like taking a shower without washing your whole body." Kole pointed out other emphases of their rotation: helping the high-schoolers to develop skills valuable for their future professional lives (such as making a presentation) and to develop additional technical skills. An engaging way to connect with technology was using Flip cameras to make videos.

Sarah Cermak (Social Policy and Practice) and Tricia Smyth (Nursing) dealt with two disparate age groups: high-school volunteers and senior citizens at Living Independently for Elders (LIFE), a program of Penn's School of Nursing. There, they helped with "all-inclusive care" for four days a week over the seven weeks. They also helped the elders make jewelry, do art therapy, and dance. Another topic was the problems elders face. These include "elder abuse," which includes financial abuse, and they distributed material that listed resources to contact, as Cermak put it, "if you're being taken advantage of." Cermak and Smyth ran a session on hypertension awareness as well. They also tried to debunk the misconceptions that high-schoolers often have about older people, that they're all senile and "not there."



Anna Hunt

Community mental health was the focus of two other Penn student interns: Anna Hunt (Social Policy and Practice) and Dana Kozubal (Medicine). They worked with The Consortium at two sites that offered day programs for adults. One theme the interns pushed was helping to get the adults back into the work force. They assisted the faculty, teaching about healthy eating, smoking, and diabetes. They even "rallied" at City Hall to protest budget cuts that would affect similar programs.

According to Kozubal, the students worked to develop a "personalized quit plan" for smokers in their groups. Near the end of the rotation, some people reported having gone without smoking for two weeks. "It exceeded any expectations that I had," said Kozubal. The interns also tried to get healthier snacks at one of the sites.

One of the things Hunt learned from organizing community activities and joining peer support groups underscores a central tenet of community health. As she put it, "Community is critical to recovery."

— John Shea



Natalie Spaccarelli

they understand social issues or problems that they confront.”

BTG also opens the window on interdisciplinary collaborations for social work students. “You have an idea what the nursing profession is and what dental medicine is,” Draine continues, “but seeing that each of these professions has some focus on interaction with community and building community capacity is a unique perspective.”

For Ann O’Sullivan, Ph.D., professor of nursing, the uniqueness of this experience stands out. “Without BTG, nursing students at Penn would not have as intense an interdisciplinary experience as is currently offered through this program. Knowing how each profession sees itself in the community and working side by side with dental, medicine, and social-policy students allows nursing students to demonstrate their approach as a team member to a variety of community interactions. Experiencing how slow it is to accomplish objectives when on a team in a community is the most valuable part of these activities. The Institute of Medicine’s Future of Nursing report would wish that

every nursing student could have such an experience.”

Peter Cronholm, M.D., assistant professor of family medicine and community health, adds that the program “provides critical experiences for health-care professionals in building connections between systems of care and the communities they serve – a critical step in addressing health disparities.”

Donald Schwarz emphasizes the big picture. “Bridging the Gaps ultimately creates an incentive for a student to integrate community health into practice,” he says. “It creates a different awareness among health-care professionals of what the impediments are to health, so health-care professionals are more into what’s going on with housing for a client’s family, what plans they have for the summer for their kid, how they are managing work and monitoring their blood pressure. And that’s important for both the professionals who work in underserved communities and health professionals more generally.”

Bridging the Gaps . . . in Health Care

Bridging the Gaps has continued to expand to new communities in need. Rachael Truchil, M.D. ’09, M.P.H., had studied community health as an undergraduate at Brown University. As a first-year medical student steeped in the hard sciences, she found herself looking for a *community* experience. When she learned about Bridging the Gaps, she says, “a light bulb went off. I had found a group of people who came from a similar background.”

The BTG seminar series led her to an internship with Early Head Start in North Philadelphia, together with a nursing student and a dental student. Teaching and supporting new mothers during home visits energized Truchil and inspired her to conduct a survey about obstacles parents face in having their children immunized:

lack of safe transportation, little access to a pediatrician, multiple children to tote. As Truchil puts it, “I began to appreciate more contextual factors that influence patients’ health decisions.”

Over dinner conversations, Bernadette West, Ph.D., listened carefully to her daughter Rachael and saw her evolving into “this very well-rounded medical student who was paying attention to the environment and issues people were experiencing in their communities.” West recalls thinking: “This is something we should all be doing.” As an associate dean at the University of Medicine and Dentistry of New Jersey’s School of Public Health in Stratford/Camden, West was in a position to make it happen.

West arranged a meeting with her dean and Lucy Tuton. In 2007 they founded a Bridging the Gaps program in Camden. There, BTG students work with the homeless population. That may involve visiting a tent city under a highway bypass to distribute water, provide diabetic foot care, and instruct on sun protection. They work with a needle exchange project and on a health-needs assessment for male reproductive health; they staff a children’s summer camp that likely would not exist without the BTG team. “Bridging the Gaps is a godsend to our community agencies,” says West. She hopes to expand the program to other New Jersey sites.

Of course, West is very proud of her daughter, who is on the primary-care track in Penn Med’s internal medicine residency program. Says Truchil, “Not only am I going to be practicing medicine as a physician taking care of patients with disease, but I will be taking care of patients who are living in a community and who have a unique set of characteristics from their backgrounds. I will be taking care of a *community* of patients.”

Truchil hopes to open her own clinic someday, bridging the gaps one community at a time. ■

Trailblazers, Inventors, & Teachers: Britton Chance and Christian Lambertsen



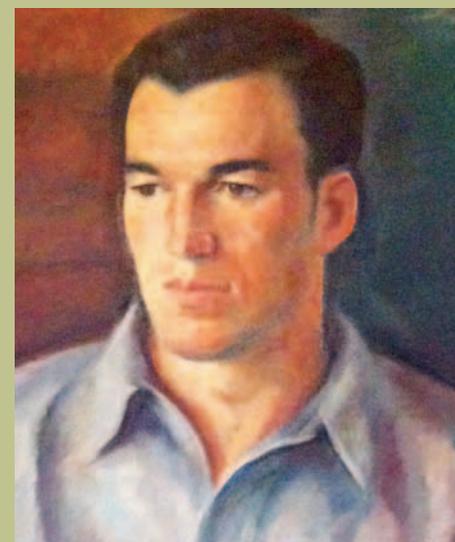
BRITTON CHANCE, PH.D., D.SC., for more than 50 years one of the giants of biochemistry and biophysics and a leader in transforming theoretical science into useful biomedical and clinical applications, died on November 16, 2010, at age 97. He had the distinction of receiving both a National Medal of Science (1974) and a Gold Medal in the Olympics (sailing, 1952). Chance was also rare in being elected not only to the U.S. National Academy of Science but also to foreign academies such as The Royal Society of London.

BRITTON CHANCE PLAYED A PIVOTAL ROLE IN DETERMINING BIOENERGETIC ACTIVITIES IN CELLS. THESE DISCOVERIES CULMINATED IN THE 1980S IN HIS PIONEERING WORK IN MAGNETIC RESONANCE SPECTROSCOPY IMAGING IN HUMANS.

Even in his early 90s, Chance, the Eldridge Reeves Johnson Emeritus Professor of Biophysics, Physical Chemistry, and Radiologic Physics, could be spotted riding his bicycle to his Penn laboratory. In 2001, still in pursuit of new things, Chance unveiled a detection technique, developed with collaborators at Penn and Harvard, that uses fluorescent molecules to track and illuminate malignant cells in the breast. Even more recently, he was part of a team that proposed developing a portable, real-time system for monitoring and imaging brain function.

Born in 1913 in Wilkes-Barre, Pa., Chance developed a passion for sailing and early on displayed an uncanny knack for invention. These interests came together when, as a teenager, he invented and patented a novel automatic ship-steering device. Later, he was contracted by the British General Electric Company to test it in a freighter between England and Australia. His passion for sailing never waned.

In 1935, Chance earned his bachelor's degree in chemistry from the University of Pennsylvania. As a Penn graduate student, he developed a microflow version of a stopped-flow apparatus to study enzyme mechanisms, observing their changing compositions in milliseconds. Back in England, Chance worked with the originators of the flow apparatus



Portrait of Dr. Chance by Leslie Dutton, Ph.D.

technique at Cambridge University. With these unique instruments he made important research contributions, fundamental and applied. He demonstrated the long-predicted but never-seen enzyme-substrate complex. He discovered that biological electron transfer – vital to respiration, photosynthesis, and oxidative metabolism – was quantum-mechanical tunneling, an understanding that now underpins engineering of nanoscale electronic devices. Chance also played a pivotal role in determining bioenergetic activities in cells. These discoveries culminated in the 1980s in his pioneering work in



magnetic resonance spectroscopy imaging in humans, and in the 1990s in his initiating the application of near-infrared optics for the clinical diagnosis of breast cancer, muscle dynamics, and cognition.

Back in the United States, Chance became a fellow in Penn's Eldridge Reeves Johnson Foundation for Research in Medical Physics, where he completed his first study on enzyme kinetics. He earned his Ph.D. degree in physical chemistry in 1940. Two years later, he received a second doctorate – in biology and physiology – from Cambridge. When the United States entered World War II, Chance was recruited to M.I.T. to work in its Radiation Laboratory, as part of a secret team focused on developing and enhancing

radar. Despite his relative youth, he became a group leader and eventually supervised 300 people. For this work, Chance was awarded the President's Certificate of Merit.

From 1949 to 1983, Chance directed the Johnson Foundation, which became widely recognized as a stimulating research environment. For part of that time, he was also chair of the Department of Biophysics and Physical Biochemistry.

Chance's earlier work on enzymes was fundamental to the understanding of how oxygen is used in the body to provide energy and to a broader knowledge of the diseases that result from a lack of energy. He also invented the dual-wavelength spectrophotometer, and his other discoveries formed the basis for the glucometers in use today. Mark Lemmon, Ph.D., Penn's chair of Biophysics and Biochemistry, notes that Chance was continuously funded for 70 years and had six papers that reached more than 1,000 citations.

In addition to honorary degrees from Penn and several other universities, Chance's honors included the Franklin Medal from the Franklin Institute and the Christopher Columbus Discovery Award in Biomedical Research, from the National Institutes of Health. In 1995, Penn Med named the Stellar-Chance Laboratories partly in his honor.

CHRISTIAN J. LAMBERTSEN, M.D.

'43, founder and former director of Penn's Institute for Environmental Medicine and inventor of what became known as SCUBA (self-contained underwater breathing apparatus), died on February 11, 2011, at the age of 93. One of Penn Medicine's most honored professors, he began his long association with the School of Medicine as a first-year student in 1939. His research had an impact on the study of human physiology, environmental medicine, and physical medicine.

Lambertsen was Distinguished Emeritus Professor of Environmental Medicine.

Even before enrolling at Penn, Lambertsen, an enthusiastic swimmer who had worked at resorts along Barnegat Bay, had been experimenting with an apparatus to breathe underwater. His early device used parts from the rebreathing circuits of anesthesia machines. With the help of Dr. Henry Bazett, his professor of physiology, Lambertsen offered his improved device to the United States Navy

**CHRISTIAN LAMBERTSEN'S
"COMPREHENSIVE
BACKGROUND AND
EXPERIENCE AS A
DOCTOR, INVENTOR,
AND DIVER MADE HIM
A UNIQUE ALL-IN-ONE
ASSET." HE WAS CALLED
THE FATHER OF U.S.
COMBAT SWIMMING.**

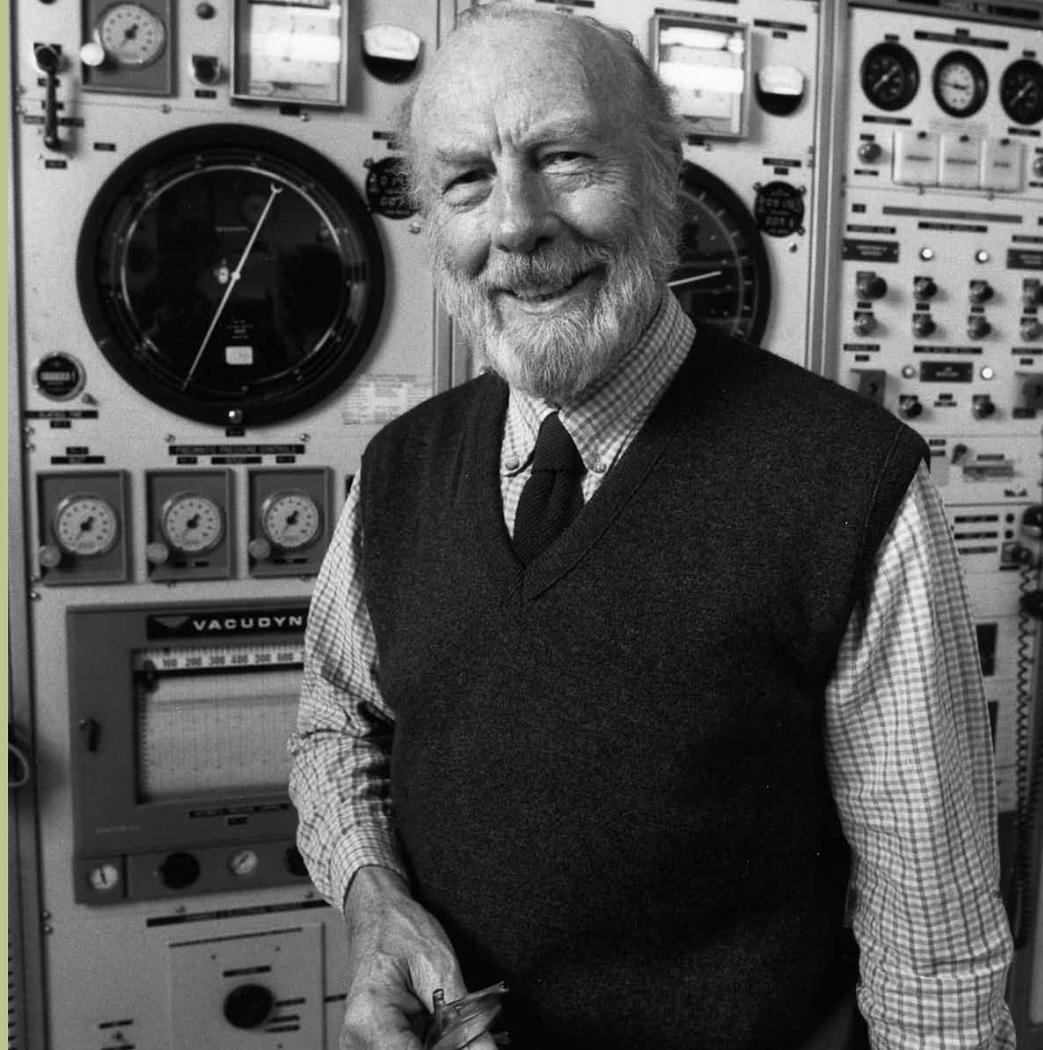
in 1941. The Navy, however, seemed satisfied with its hose-to-helmet diving techniques. The Office of Strategic Services, a branch of the Army, welcomed his device and ideas. Throughout World War II – and through medical school and his internship at Penn – Lambertsen worked with the OSS and established its special underwater demolition forces, which were deployed in Burma.

After the war, Lambertsen joined Penn's Department of Pharmacology. Soon, however, the Navy called him back to train its surface frogmen to become



divers. During his service, Lambertsen made the first exit from and re-entry into a submerged submarine. His work marked the beginning of modern underwater demolition teams and Sea, Air, and Land teams. According to the Defense Media Network, Lambertsen's "comprehensive background and experience as a doctor, inventor, and diver made him a unique all-in-one asset." His education and research in the new fields of diving and hyperbaric medicine "gave him vast empirical and practical knowledge of the physiological effects and dangers of such conditions as oxygen toxicity, hypoxia, prolonged activity underwater at depth, and other dangers."

Back at Penn, Lambertsen had an abandoned altitude chamber converted into a positive-pressure thermal laboratory. It soon became a mecca for those interested in undersea and aerospace environmental physiology. In 1955, Lambertsen organized the first Symposium on Undersea Physiology, sponsored by Penn, the Office of Naval Research, and the National Research Council. The Institute for Environmental Medicine was officially established in 1968. It was the site for a series of pioneering multidisciplinary studies that probed the pathophysiology of oxygen toxicity, diving-related diseases, and mechanisms of hypoxic response in humans. Among the findings of Lambertsen and his associates was a means for mark-



edly increasing oxygen tolerance. In 1985, Aron B. Fisher, M.D. '60, succeeded Lambertsen as the institute's director.

In 1965, Lambertsen was honored with the University of Pennsylvania Alumni Award of Merit. He also received the 1989 Distinguished Graduate Award, the highest honor bestowed on alumni by our School of Medicine. In addition, Lambertsen was the recipient of the Lindback Award for Distinguished Teaching, the University's highest teaching honor. Since 1986, the Department of Pharmacology has sponsored The Christian J. Lambertsen Honorary Lecture, which brings leading researchers to the Penn campus.

Last year, Lambertsen was presented with the John Scott Award, given by Philadelphia's Board of Directors of City Trusts to those whose inventions have contributed to "the comfort, welfare, and

happiness" of humans. Among the recipients have been Madame Curie, Thomas Edison, and Jonas Salk. Lambertsen was honored for inventing "the underwater breathing apparatus known as SCUBA."

Among Lambertsen's many other honors are the Aerospace Medical Association Award (1970); the Distinguished Public Service Award from both the Department of Defense (1972) and the United States Coast Guard (1976), their highest civilian honors; the New York Academy of Sciences Award for Research in Environmental Science (1974); and the 2001 Pioneer Award from the Navy Historical Society. In 2000, the Navy SEALs proclaimed him "the Father of U.S. Combat Swimming." A Fellow of the College of Physicians of Philadelphia, Lambertsen was elected a member of the National Academy of Engineering in 1977. ♥

— John Shea

Islet Cell Transplantation:

A Patient's Perspective

By Andy Gordon

I needed to pee really badly. It was the spring of 1966. The Vietnam War was going on, and I was in Lyndon Johnson's White House shaking my legs while taking the public tour. Back then, there was no place in the White House for the public to conduct "business." So my Dad and I ran next door to the Treasury Building, quickly glanced at Alexander Hamilton's statue, and made it to the restroom just in time. (Entering a federal building was once a simple matter.)

Of course, the entire family trip to D.C. involved many stops to relieve my bladder. My parents suspected that something was amiss. Back home, they took me to our doctor, and a few days later he called to tell us that I had juvenile diabetes (now called Type 1 diabetes).

As we learned, Type 1 diabetes is an auto-immune disease in which the immune system goes awry and destroys the insulin-producing beta cells in the

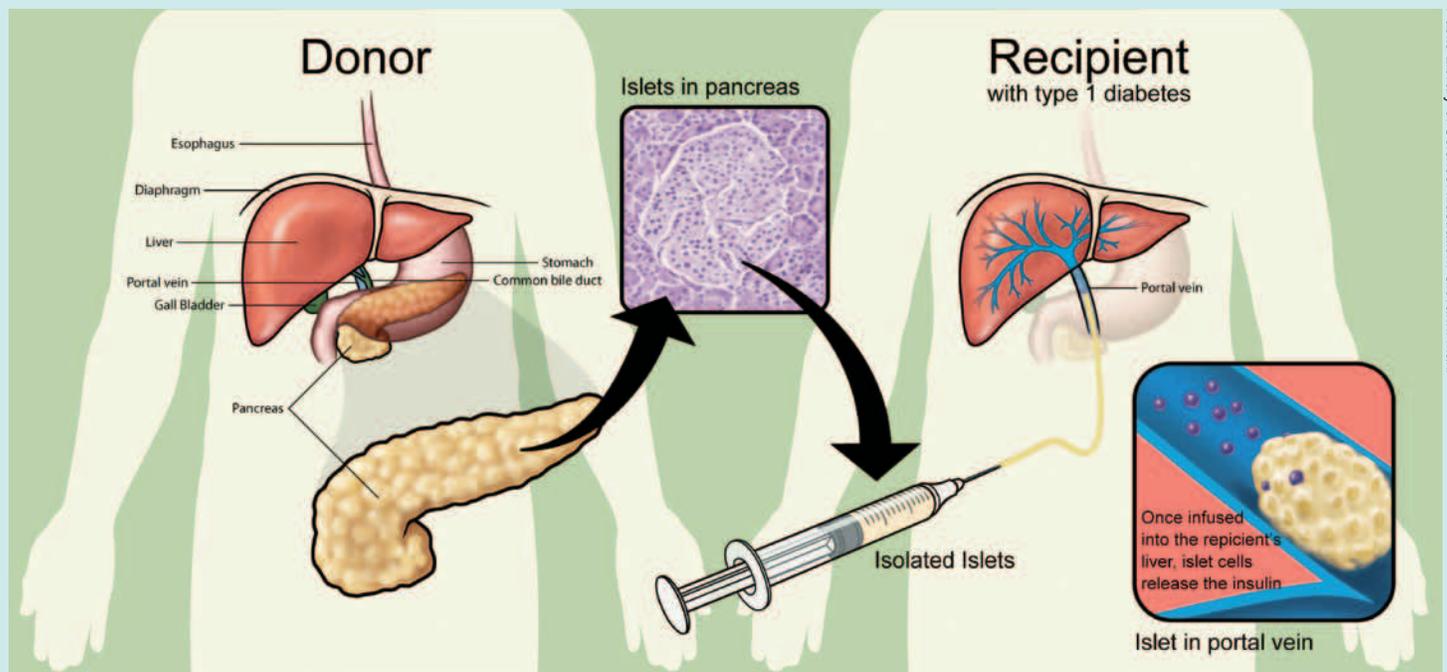
pancreas. When enough beta cells are destroyed, little if any insulin is produced and, as a result, sugars in the body are not properly converted to energy. Instead, the sugar levels become elevated in the blood stream.

The disease can be controlled but not cured by the use of insulin. During these initial years, my control of the disease was probably poor, but there were no glucose monitors to measure blood-sugar levels. Nor did I make much of an attempt to eat a controlled diabetic diet. I do remember being taken to the hospital in an ambulance twice when my parents were unable or too afraid to treat bad incidents of hypoglycemia (low levels of blood sugar). Nevertheless, I managed well enough to work my way through college and law school without any more ambulance trips.

After giving myself a daily injection of insulin for more than 15 years, I realized

I needed better control. Thus, early in the Reagan era, I entered a D.C. hospital and was connected to an insulin pump. The pump provides a continuous infusion of insulin at a programmed "basal" rate by placement of an infusion set in the abdomen or other body part. The infusion set is connected to a syringe filled with insulin that is infused into the body by a programmable pump. One can also infuse a "bolus" of insulin prior to eating. I was hooked up to my new pancreas – the insulin pump – for close to 30 years.

With the use of the pump, blood-sugar monitoring, and a more careful diet, my control of the diabetes certainly improved. But over the years, I still had incidents of hypoglycemia, including one when the downstairs neighbors had the D.C. police visit me because I was tumbling around the furniture in my apartment and making a lot of noise. Luckily, I was still conscious enough to convince the



Public Library of Science. Illustration: Giovanni Maki

police that I had low blood sugar and that I didn't need to be arrested.

More recently, I lost my ability to recognize when my blood sugar was low. I was no longer having the typical symptoms of hypoglycemia – sweating, shaking, tingling, etc. A number of times in the middle of the night I would wake up, somehow walk down the stairs, test my blood sugar – and discover that my readings were well below the desired range.

An Experimental Treatment

At the suggestion of a friend, I investigated an experimental treatment for Type 1 diabetes called an islet cell transplant. After reviewing the history of such transplants, I applied to participate in a clinical trial at the University of Pennsylvania. The trial at Penn Medicine involves transplanting islet cells taken from a donor pancreas into the liver of Type 1 diabetics. These transplants are limited to Type 1 diabetics of a certain age who either have great difficulty controlling the disease or fail to recognize when they have hypoglycemia. If the procedure is successful, the new islets will begin to produce insulin. After filling out a questionnaire and undergoing a battery of tests, I qualified for the trial in the summer of 2007.

Over the next 2 1/2 years, I made many visits to the Hospital of the University of Pennsylvania, where the staff members treated me with great kindness and were always willing to talk with me when I had concerns or questions. But as the waiting period for the transplant lengthened, I became increasingly troubled about actually going ahead with the procedure. Most of my uncertainty stemmed from the need to take medications on a regular basis to suppress my immune system so it would not attack and destroy the transplanted islet cells. The immunosuppressants can cause a wide variety of adverse effects, including impairment of



Andy Gordon

kidney function, hypertension, toxicity to the nervous system, an increased incidence of both opportunistic infections and malignancies, and other side effects too numerous to mention.

Weighing the risks and benefits of the transplant was a complex decision. Although I had never achieved total control of my disease, I was healthy, with fairly good blood-sugar levels. I was unscathed by kidney damage, nerve damage, damage to the retinas, uncontrollable infections, or heart disease — the so-called “complications” of diabetes.

So why proceed with the transplant? While the risks from the immunosuppressant drugs were daunting, my 44 years of Type 1 diabetes bore their own scary risks. How many more years was I going to visit the eye doctor without any finding of retinal damage? Would my cardiologist eventually discover heart disease resulting from long-term diabetes? How long would my kidneys continue to function as they should, even with my fairly good control of the diabetes?

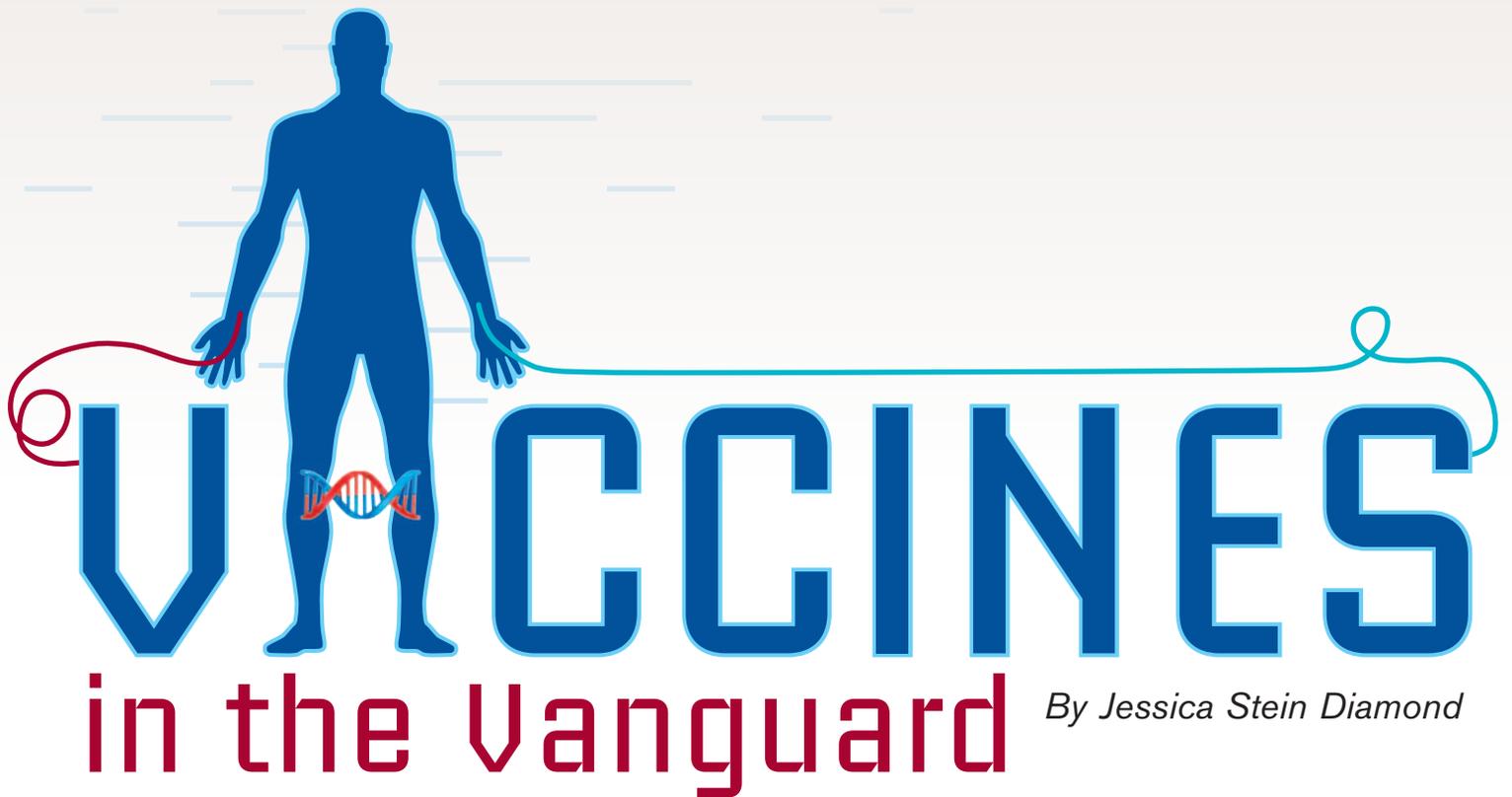
But more important – as odd as it may sound – I can trace my decision back to the celebration that was held at the synagogue right after my bar mitzvah. On one table was a huge cake decorated with a Jewish star made of sugar and blue food coloring. I could eat neither the cake nor the star. But I grabbed the star and placed it in a plastic bag with a note

that read, “I will one day eat this star on the day my diabetes is cured.” I kept that star and note in my possession for well over 30 years, waiting for the cure, as does every Type 1 diabetic. At some point within the last 10 to 15 years, I finally gave up and tossed the plastic bag filled with the decomposed star and raggedy note. The long-promised cure, despite the efforts of many doctors, researchers, and dedicated volunteers, still seemed far away.

At age 56, I realized that this imperfect transplant may be the only chance I had to “cure” the disease. What would it be like to live a life free of my constant companions: the insulin pump, the glucose monitor, the finger pricker, and the hard candy that was always in my pockets?

It has been 14 months since the islet cell transplant, and I have lived free of my insulin pump for the last year. After being attached for 30 years, the pump became so much a part of me that even now I sometimes reach for it in my pocket. Do I consider myself “cured”? Not necessarily, but certainly the islet cells are functioning well, as shown by my blood sugar readings and hemoglobin A1C levels (now within the desired range of a non-diabetic). Would I have made the same decision to have the transplant if I had known about the canker sores, swollen hands and feet, acne, and tremors almost certainly caused by the immunosuppressants? Probably. Am I a different person? Not necessarily, but I suppose my post-transplant life is a work in progress. Would I eat that blue Jewish star now if I still had it? No, probably not. But it feels good that maybe I could. ♥

The Penn-JDRF Center for Islet Transplantation was established by Ali Najj, M.D., in 1999. Michael R. Rickels, M.D. '99, M.S. '07, is medical director of Penn's Pancreatic Islet Cell Transplantation Program. If you are interested in participating in the islet transplantation trial, call (215) 662-4449. To learn more about diabetes research and care at Penn Medicine, go to <http://www.med.upenn.edu/idom/>



VACCINES

in the Vanguard

By Jessica Stein Diamond

At Penn Medicine, physician-scientists are creating new DNA vaccines that hold great promise for fighting disease more effectively, with fewer side effects. But the new vaccines are expensive, and funding can be hard to find.

After living with chronic lymphocytic leukemia (CLL) for 14 years, James Smith (not his real name) faced a pivotal decision. Chemotherapy no longer kept his disease in remission; he had to choose between two next-stage treatments. One was a bone-marrow transplant. With such a treatment, there was a 10-to-20-percent chance Smith would face life-threatening complications as well as a 50-percent chance of long-term remission that would require him to take anti-rejection drugs for the rest of his life. The other treatment was to take part in the pilot phase of a clinical trial using autologous cellular immunotherapy, run by David L. Porter, M.D., professor of medicine and director of Penn Medicine's blood and marrow transplantation program.

Smith chose the second option. As a scientist, he says, "I understood the clini-

cal protocols, the risks and the side effects. It was one of those things that should work based on the science, which looked solid." Smith, a married father of four adult children, adds, "That's never a given when you're talking about a biological system."

Personalized Vaccines Show Promise

Drawing upon decades of research and new techniques for modifying DNA, Penn researchers are refining autologous cellular immunotherapy, a new form of personalized therapeutic vaccines. "What we're doing falls under the area of personalized medicine in the extreme sense — using a person's own white blood cells or tumor cells to develop a personalized vaccine," says Carl H. June, M.D., director of translational research at the Abramson Cancer Center, who is over-

seeing the development of these vaccines.

"This isn't a drug in a bottle or a vaccine in a vial," says June, a professor of pathology and laboratory medicine. "This is more like a next-generation blood transfusion. The principles of this have been known for decades and are finally beginning to yield therapeutic benefits, thanks to advances over the past 10 years in cell engineering and gene transfer."

Until recently, therapeutic immunization was used for only one medical necessity: after a patient was exposed to rabies. Newer vaccines, built upon the elusive promise of gene therapy, now have the potential to transform therapeutics for a wider range of conditions. The approach involves inserting genes to redirect and activate a host's immune system to attack cancer — while sparing healthy cells. Unlike traditional vaccines that protect



David L. Porter, M.D., makes use of autologous cellular immunotherapy.

against future exposures to a pathogen, personalized immunizations treat an existing disease or infection. Phase 1 and 2 clinical trials under way at Penn are using immunotherapy for blood cancers such as chronic lymphocytic leukemia, solid tumors such as ovarian and breast cancer, and viruses such as HIV.

As Smith reports, in his clinical trial protocol, “blood came out of one arm and went into a centrifuge. They separated out the white blood cells and returned the rest into my other arm.” Next, his T cells were genetically modified at Penn’s Clinical Cell and Vaccine Production Facility (CVPF) so they would kill mature B lymphocytes, including his cancer cells. The facility plays a crucial role in this research, providing both scientific support and regulatory support to clinicians. Bruce L. Levine, Ph.D., the facility’s director, worked with June to refine and advance the therapeutic vaccine used in the CLL protocol.

In September, over the course of three closely monitored days, Smith was infused with those modified cells and had no reaction to the infusion. Two weeks after

the infusion he woke up with what felt like the flu. “I said ‘Great, the war has started,’” he recalls. “That was the indicator we were all looking for – when my genetically modified T cells started killing off the CLL cells.” After more than a week of feeling lousy at home, he experienced so strong a reaction against his CLL that he needed to be hospitalized so that the side effects could be monitored and managed. He was released after four days. Since then, he says, he has felt “terrific.”

Smith’s hope was that the pilot phase of the clinical trial would help him defer bone-marrow transplantation as long as possible. To his surprise, however, the treatment appears to have completely cleared his body of CLL. At six weeks after his treatment, he reported, “Right now they can’t find any disease in my bone marrow and blood.”

Hope for the Future

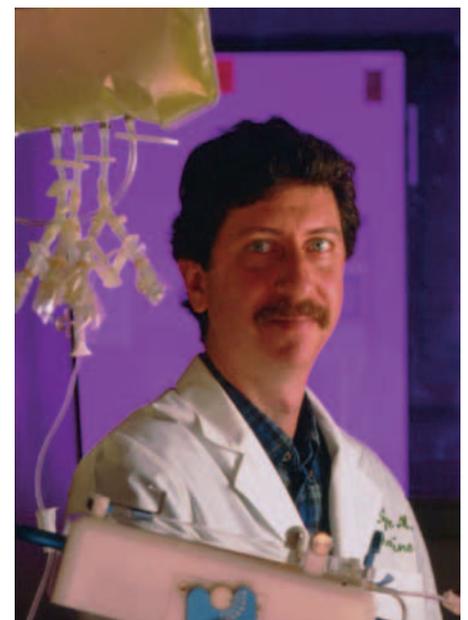
The field of personalized vaccines is at least a decade away from widespread clinical use, but early signs are promising. According to Porter, it is not clear whether Smith’s pilot treatment will lead to long-

term remission, a low level of the disease, or a cure. Still, two of the three CLL patients who have participated so far in this clinical trial – and were resistant to all other therapies – appear to be in complete remission after this cell therapy. The third patient has had an excellent, though partial, response.

If the responses of the CLL patients are durable and can be reproduced, Porter ventures, “this kind of treatment might be developed for patients with all different sorts of cancers. It is really the beginning of the very new field of immune therapy. It’s very early in the trial, but our initial experience has been very exciting. You don’t see completely new therapies work so effectively very often.”

June is pleased by the progress as well: “We went into this trial not expecting to see home runs. But we’re seeing home runs in our first couple of swings. If results continue as they are, I’m quite optimistic this will become an FDA-approved therapy.”

When Penn Medicine’s new Translational Research Center opens this spring, half of its eighth floor (comprising 20,000 square feet of laboratory space) will house a research team of more than 100 people, in-



Bruce L. Levine, Ph.D., director of the CVPF.



Photograph by Sabina Louise Pierce

Carl H. June, M.D., likens the new personalized therapeutic vaccines to next-generation blood transfusions.

cluding six senior faculty members of the School of Medicine. The goal: to advance autologous cellular immunotherapy.

“We have the largest group in the world dedicated to cancer immunotherapy,” says June. “More patients are treated with more novel trials here than at any other cancer center in the country. What sets us apart from any other center is our balance of basic research and translational therapy, the number and caliber of our clinical trials, and the teams behind them.” The Clinical Cell and Vaccine Production Facility, he continues, is an essential partner in the developmental science as well as in producing the treatments and safely testing new therapies for humans.

In October, a team of Penn physician-scientists received a \$3.2 million “Transformative Research” grant from the National Institutes of Health for innovative research that has the potential to make an extraordinary impact. The grant is supporting Phase 1 trials of a personalized immunotherapy aimed at attacking and destroying blood vessels of targeted ovarian cancer tumors. George Coukos, M.D., Ph.D., director of the Ovarian Cancer Research

Center and the Celso-Ramon Garcia Professor of Reproductive Biology, is the principal investigator, in collaboration with Chaitanya Divgi, M.D., chief of nuclear medicine, and June.

Their approach involves inserting a gene into a patient’s T lymphocytes that would attack the “stroma,” the vascular cells that support tumor growth with blood and oxygen. Although tumor cells mutate frequently, posing challenges for cancer treatment, stromal cells do not mutate and are consistent throughout the body. That means they present an easier therapeutic target. “If successful, this personalized targeted approach can become a truly powerful universal cancer therapy,” says Coukos. June underscores his point: “The principle of engineering the immune system to attack tumor vasculature could work in a lot of different cancers beyond ovarian cancer, such as lung cancer, colon cancer, breast cancer, and pancreatic cancer.”

Another form of autologous vaccine immunotherapy – for breast cancer treatment – is in Phase 1 trials led by Brian J. Czerniecki, M.D., Ph.D., the Rhoads-

A BETTER FLU VACCINE

How pressing is the need to develop a better vaccine against the flu? Approximately 30,000 Americans die of the illness each year. There is always the risk of an influenza pandemic. And despite these concerns, no manufacturer based in the United States currently produces a flu vaccine.

These facts underscore the importance of influenza prevention. David B. Weiner, Ph.D., professor of pathology and laboratory medicine, is developing a breakthrough DNA vaccine that holds the potential for preventing such a flu pandemic while improving the availability of the vaccine.

Weiner is known as one of the founders of the field of DNA vaccines. More than a decade ago, his laboratory was the first group to move such vaccines for AIDS into human clinical trials and to prove that DNA injections were safe. His group then went back to the bench to develop a new generation of DNA-based vaccines formulated to be more efficient in triggering an immune response. Working in collaboration with Inovio Pharmaceuticals, Inc., and the Public Health Service of Canada, Weiner is now using those insights to create a new method for producing flu vaccine and is refining the science for early-stage animal studies.

Unlike traditional vaccines that use attenuated or killed virus or recombinant proteins, Weiner and his collaborators are creating a flu vaccine that would work by delivering plasmids – synthetically built pieces of genetically modified DNA. When taken up by cells, the plasmids would drive expression of a foreign protein, which then trigger the body’s production of antibodies.

The DNA in the flu vaccine would not become part of the host. Instead, explains

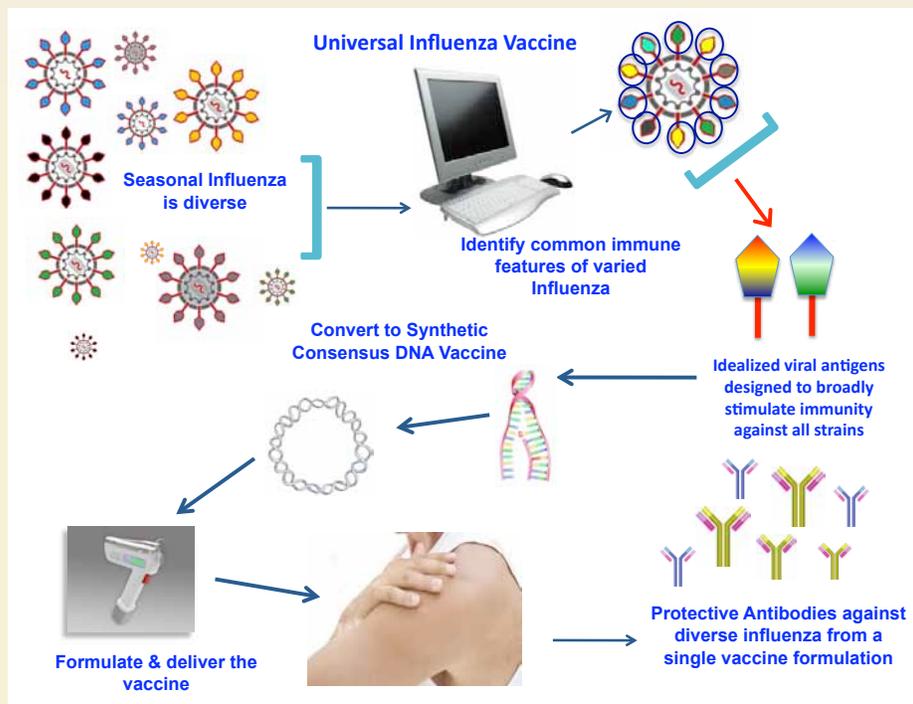


Illustration courtesy of David Weiner, Ph.D.

Weiner, “when that foreign protein appears in the body unexpectedly, the immune system says, ‘I hate foreign things in my body,’ and will destroy it. The vaccine, in effect, teaches the body to produce an immune response and to create antibodies against a viral target – in this case, traits of multiple strains of influenza. The next time there is an exposure, the body is trained to fight back.”

Current methodologies rely on selecting from among several flu virus strains six to nine months before flu season in the United States. That strategy is not always successful. The new approach Weiner and his collaborators are developing offers other advantages: the vaccine would be available before the new flu season; it doesn’t need to be produced in an egg; it is cheaper, more stable, and can be manufactured more rapidly and in greater quantities; and it uses non-replicating,

non-infectious genetic material to generate a customized immune response.

The N.I.H. took notice. In October, it made a \$3.2 million grant for “Transformative Research” to Weiner and his collaborators. The central goal is to stimulate immunity against diverse strains of influenza in a single vaccine formulation. N.I.H. funding of this kind is reserved for innovative approaches that have the potential for an extraordinary impact on public health.

Weiner’s work with the flu vaccine – and in particular the promotion of an antibody response against multiple changing viral strains – promises to inform his lab’s well-established efforts to develop HIV vaccines as well. “Flu gives us insights into strategies to develop vaccine immunity to other rapidly changing pathogens such as HIV.” As he points out, “HIV is a major challenge because it is several-fold more diverse than flu.”

Harrington Associate Professor in Surgery. In this case, a gene is inserted into dendritic cells. As a result, the immune system attacks HER2/neu proteins (which are highly correlated with cancer recurrence) as if the cancer cells were an infection. Preliminary results demonstrate that the treatment stimulates an immune response in early-stage breast cancer, Czerniecki says, but he also notes that more outcome research is needed. The proximity of the Clinical Cell and Vaccine Production Facility, he adds, has helped to refine the treatment: “Our dendritic cells were taken back to the lab and improved and are back in patients with better activity. The ability to circle back to the CVPF makes the difference clinically.”

Autologous vaccines also hold promise to transform the treatment of HIV. Pablo Tebas, M.D., associate professor of medicine and director of the Adult AIDS Clinical Trials Unit, is leading Phase 1 clinical trials at Penn in collaboration with Sangamo BioSciences Inc., of Richmond, Calif. The trial makes use of engineered “zinc finger” proteins that bind to DNA to genetically modify a patient’s white blood cells, turning them into molecular “scissors” that prevent the spread of HIV.

Earlier research has shown that one percent of Caucasians have a natural resistance to HIV because they lack a co-receptor for a protein called CCR5. That lack makes it impossible for the virus to enter a cell. The treatment developed by Tebas in collaboration with Sangamo edits out CCR5 at the genetic level and generates a protected population of immune cells that are specifically designed to fight both the virus and opportunistic infections.

At an AIDS conference in March, Carl June, who was involved in Sangamo’s trials, presented preliminary results for nine patients with HIV. They received the new treatment in Philadelphia, New York, and California. According to June, the engi-

neered cells in all patients remained free of HIV infection – and in eight of them, the engineered cells multiplied dramatically. In addition, none of the patients reported serious side effects.

In a press release from Sangamo, June stated that this new direction of therapy provided a “proof of concept” while showing “the most promise of any yet tested.” The Associated Press ran a photograph of Tebas with Jay Johnson, a patient who had received the treatment in September. “My results are excellent,” said Johnson, who works for Action AIDS in Philadelphia. “The overall goal is not to have to take medication” while hoping for an eventual cure.

There is still work to be done. As Tebas puts it, “Our holy grail is to develop an immune system that’s resistant to HIV infection, so people don’t have to take anti-retroviral therapy. We’re a decade away from that at least.”

Across the Valley of Death

The journey toward more widespread use of personalized therapeutics is arduous. It requires validating and advancing the science, obtaining approval from the Food and Drug Administration, and – not the least of it – raising up to \$50 million to bring each new therapeutic to market. For personalized therapeutic vaccines, those challenges are compounded by the

fact that personalized vaccines are radically different from factory-produced vaccines or pills.

All such therapeutics must cross what June and others call the “valley of death” – obtaining funding for Phase 2 clinical trials that typically cost \$10 million (far beyond typical N.I.H. funding levels). “A lot of promising therapies stop at Phase 1 because that’s the most you can support with N.I.H. funding,” says June. “Finding the bridge across the valley of death is the challenge we continually face. Unless you can get industry investment or find angel investors, philanthropic or foundation support, you’ll never get to Phase 2. When a treatment is novel like this, it

ENGINEERING WHITE BLOOD CELLS TO ATTACK TUMORS, CANCER CELLS, AND HIV

Personalized immunotherapy vaccines are now being generated for subjects who enroll in clinical trials in the Clinical Cell and Vaccine Production Facility (CVVPF) at the Hospital of the University of Pennsylvania.

Patients involved in cell-based clinical trials begin with a standard blood-collection process similar to that used for collecting blood stem cells used in transplants following high-dose chemotherapy. At HUP’s apheresis center (or at Children’s Hospital of Philadelphia), a two-to-three-hour collection yields an enriched population of billions of the patient’s own white blood cells in a volume of less than half a cup. Patients receive back their own red blood cells, platelets, and plasma.

Next door at the CVVPF, the staff further enriches the “killer” T cells or dendritic cells and subsequent transformation of the blood cells into a therapeutic vaccine. The facility is accessible only by key card and is certified at Biologic Safety Level 3.

Genes are transferred into the cells using a “Trojan horse” vector such as a lentivirus to reprogram T cells permanently with genes so that they have therapeutic anti-tumor or anti-viral properties. Although the production process is similar for all patients, the gene and vector vary depending on the patient’s ailment.

The genetically modified cells are incubated for a day. Next, they are grown in gas-permeable culture “bags” or perfused bioreactors for 10 days, during which time they are nurtured by media rich in nutrients and gently rocked. To obtain enough cells for therapeutic purposes, the facility’s staff uses plastic beads coated with antibodies that improve on the natural way the body makes T-cells grow. The process for using these beads, which contain an iron core, was invented by Bruce L. Levine, Ph.D., director of the facility, and Carl H. June, M.D., director of translational research at Penn’s Abramson Cancer Center.

Each culture bag eventually contains several billion enhanced cells. Next, the beads are removed using powerful magnets. Cells are washed, concentrated, put through extensive F.D.A. tests, and then placed in infusion media or cryo-preserved (potentially for years). When the patient is ready for treatment, the cells are shipped to an infusion room and thawed in a warm water bath just before being infused.

At present, the process of preparing a patient’s personalized therapeutic vaccine takes nine to ten days from apheresis to infusion. For gene-modified cells, several additional weeks are required for testing, which is why cells are cryo-preserved. The manufacturing process is highly controlled to ensure that each patient receives back his or her own modified white blood cells. There are other precautions: access to the culture bags is restricted to sterile tubing and connecting devices, and each culture room in the facility manufactures only one product at a time.

takes a lot longer until industry believes in it and is willing to invest in it.”

In November, the National Cancer Institute awarded \$2 million in funding for a Phase 2a multi-center trial for Porter's treatment for acute leukemia patients – according to June, just enough money to get started but not enough for the number of patients treated in a typical Phase 2 trial. The Special Translational Research Acceleration Project grant, designed for projects “ripe” for translation, was awarded to project director Renier J. Brentjens, M.D., Ph.D., of Memorial Sloan-Kettering Cancer Center, with subcontracts to Stephan A. Grupp, M.D., Ph.D. associate professor of pediatrics at Penn and a physician-scientist at the Children's Hospital of Philadelphia, and June. Porter is the clinical principal investigator. The team is pursuing additional funding for the Phase 2 trial.

Lack of sufficient funding threatens to stall other promising leads on personalized vaccines in the pipeline. As Czerniecki puts it, “The science for this field has outpaced the funding model. Because grants from N.I.H. are small, most people have to stick with animal models. Then, when people conduct clinical trials, they have to limit it to five or six patients because they can't get more funding.”

“National Cancer Institute funding for research has been cut more than five years in a row,” June notes. “That's a real strain on the system, compounded by the fact that the pharmaceutical industry has run out of gas. They've invested a lot of money but aren't coming up with new drugs. Once things start to work with personalized vaccines, then industry will jump in.”

Precedents are emerging for commercializing cellular therapies that are specific to patients. Last April, the first autologous cellular immunotherapy was approved by the F.D.A.: Provenge, for treating prostate cancer, by Dendreon, a publicly held bio-



The Clinical Cell and Vaccine Production Facility plays a crucial role in developing new therapeutic vaccines.

tech company. Provenge has already been approved for reimbursement by such health insurers as Aetna, Humana, and Kaiser.

If the funding and science of personalized vaccines both fall into place, physician training and practices will also need to

“MORE PATIENTS ARE TREATED WITH MORE NOVEL TRIALS HERE THAN AT ANY OTHER CANCER CENTER IN THE COUNTRY.”

— CARL H. JUNE, M.D.

change. June anticipates relatively swift acceptance among doctors trained in bone-marrow transplantation. Familiar with blood transfusion protocols, they are well aware of the limitations of bone-marrow transplants, which have high toxicity and are typically limited to relatively young patients who have sib-

ling donors. June expects a slower rate of acceptance among oncologists and cancer doctors who don't typically give transfusions – and who will need to learn about the immune system.

According to June, Dendreon's prostate-cancer treatment involves a very similar change of practice for physicians who perform it. “If that goes smoothly, it bodes well for the kind of technology we're developing at Penn.”

Tebas likens the quest to move promising new personalized vaccines through the research pipeline toward clinical use to “running two or three marathons one after another!” In his view, “There are so many steps along the way that can go wrong. Only a fraction, probably less than one percent of products in development, reach the end of the line in that marathon. We're working against the odds, but that's the nature of it.” ■

Information about eligibility and enrollment in all clinical trials at the Abramson Cancer Center is available at <http://www.penncancer.org/patients/centers-programs-services/phase-i-and-ii-clinical-trials-developmental-therapeutics/>



Development Matters

THANK YOU, DEAN

In the past decade, more alumni, friends, advocates, and volunteers than ever have joined Dean Rubenstein and Penn Medicine to create a record of development success that is unprecedented. With their support and Dean

Rubenstein's guidance, Penn Medicine has become a true leader in academic medicine, attracting the best students and faculty, building revolutionary new research and care facilities, and exerting a strong influence on American and global medicine.

The tangibles during the Rubenstein era are impressive: record-setting dollar totals, the spectacular new skyline, the doubling of financial aid, and, finally – Penn's largest gift ever, Raymond and Ruth Perelman's \$225 million naming gift to the School.

At Commencement, Dean Rubenstein spoke with pride about Penn Medicine's strengths. But he spent more time challenging the School's graduates to restore the "beauty of the physician-patient relationship."

This characteristic concern for the work remaining to be done is no surprise to alumni and friends who know Dean Rubenstein. As his tenure ends, we invited some of those who know him best to share their thoughts.



"We met Arthur shortly after he arrived 10 years ago and were impressed by his warmth and genuine interest in people. We have been encouraged by his strong support of the scholarship program."

– Walter Gamble, M.D. '57, and Anne Gamble, Penn Medicine's most loyal supporters of scholarships. More than 50 Gamble scholarships are awarded each year.



"Arthur Rubenstein was just the right prescription for the University of Pennsylvania Health System when he arrived more than a decade ago. His leadership had just the right mix of scholarly wisdom and implied expectations."

– Rosemary Mazanet, Ph.D. '81, M.D. '86, Chair of the Campaign for Penn Medicine and Co-Chair of Making History: The Campaign for Penn.



"Our family has always had the highest regard for Arthur. During his tenure, the Abramson Cancer Center has made meaningful progress – both in research and in developing truly exceptional, comprehensive, and respectful programs for cancer patients and their families."

We believe we have influenced thousands of lives for the better. Arthur has been an extraordinarily kind, intelligent, and forward-looking guide, and we are very glad to have had his expertise on an enterprise that is so important to our family."

– Leonard and Madlyn Abramson, whose generosity and guidance have made the Abramson Cancer Center a leader in cancer research and care.

RUBENSTEIN



“Over the years, we have been fortunate to have supported many causes and organizations that do good in our city and throughout the world. None has made a bigger impact on our lives than the creation of the Ruth and Raymond Perelman Center for Advanced Medicine and now the naming of the Perelman School of Medicine. Arthur’s foresight led the way in helping us take part in building this magnificent legacy of hope and achievement for countless students, patients and their families.”

– Raymond and Ruth Perelman
Perelman School of Medicine at the University of Pennsylvania
Perelman Center for Advanced Medicine

A Distinguished Decade: Statistics of Success

More than \$1.4 Billion: Total Support Raised

Research: Nearly \$760 Million Raised

Student Aid: \$82.6 Million Raised

Professorships: 38 new chairs endowed

Association of American Medical Colleges ranking for alumni giving: first among our peers

Number of Penn Medicine Leadership Volunteers: Nearly 350



“We have witnessed firsthand how innovation can change – and save – lives. Our entire family is proud to be associated with the brilliant minds at Penn, and we commend the many achievements of Dean Arthur H. Rubenstein. His compassionate and visionary leadership has set the standard for all of Penn Medicine.”

– Suzanne and Ralph and Aileen and Brian Roberts. Above, Ralph and Suzanne Roberts at the opening of the Roberts Proton Therapy Center, the largest in the world.



Barrie McNeil Jordan and family at the 2010 White Coat Ceremony.

“Dean Rubenstein and my late husband, Henry, worked closely together from Arthur’s earliest days at Penn Medicine. They shared a vision: to make Penn Medicine one of the premier medical institutions in the world while instilling a level of caring for patients and their families equal to the excellence in medical treatments.

Arthur is an extraordinary leader. He possesses a keen intelligence, builds consensus at many levels, shares his gentle sense of humor, and has a humbleness that is rare to find in someone so accomplished. I share Henry’s love for our friend, Arthur, and thank him for fulfilling this vision for Penn Medicine.”

– Barbara “Barrie” McNeil Jordan. The Jordans have been among the strongest supporters for medical students and generously endowed the Jordan Center for Gynecologic Cancer.



Development Matters



The new skyline includes the Perelman Center for Advanced Medicine, the Roberts Proton Therapy Center, and the Translational Research Center.

“I have spent my entire professional career as an academic and have witnessed the contributions of many deans to their respective institutions. None have been more extraordinary than those of Arthur Rubenstein. His vision, foresight, and good sense have been centrally important in transforming Penn from what was simply an excellent medical school and hospital into a truly world class institution. As an alumnus, I deeply feel the gratitude, joy, and pride of the rest of the University family in having witnessed the outcome of Arthur’s tenure as Dean.”

– Stanley Cohen, M.D. '60, Hon '95, former University of Pennsylvania Board member, is a pioneer of genetic engineering. He is the winner of both the Albert Lasker Award for Basic Medical Research and Penn Medicine’s Distinguished Graduate Award.



“Everyone associated with Penn Medicine has always felt the steady hand, outstanding leadership, quiet modesty, and superb perceptiveness of Dr. Rubenstein. All have loved working with and for him, which is the greatest regard anyone can achieve.”

– Raymond Welsh, W '53, and Joanne Welsh, CW '52. Raymond is an Emeritus Trustee of the University of Pennsylvania and a Penn Medicine Campaign Cabinet member. He sits on the Director’s Leadership Council of the Abramson Cancer Center. He was honored with the Alumni Award of Merit in 1986. Both Raymond and Joanne have dedicated decades of service to Penn through alumni participation and are devoted supporters of scholarship aid.

“Arthur Rubenstein’s integrative and collaborative approach to medical education, research, and care has led to his brilliant re-configuration of medical practice through the centers and institutes at Penn. His compelling vision of the future of medicine blends both humanistic understanding of medical practice and respect for the value of data and assessment. A kind and compassionate physician, Dr. Rubenstein has led the way in creating a patient-focused model of care throughout Penn Medicine.”

– Janet Haas, M.D., a physician and philanthropist, has served on many Penn Medicine boards over the past 20 years, including the Penn Medicine Campaign Cabinet, the University Board of Trustees, and the Bioethics External Advisory Board, which she has chaired since 2006.

“Arthur is that rare person who does a myriad of things exceedingly well. In addition, it is always a great pleasure to be in his company.”

– Adele K. Schaeffer, C '55, and Harold G. Schaeffer recently established the Adele and Harold Schaeffer Professorship in Medicine, held by Dr. Jack Ende. Adele is an emeritus trustee of the University of Pennsylvania, and the Schaeffers have been loyal donors for more than thirty years.



Dean Rubenstein at the beam signing for the Translational Research Center.

“I have known Arthur for many years, and he is very special to me. His kindness is genuine. He has done so much for me as a trustee and an individual. I want him to know that he will be truly missed.”

– Mary L. Smith, Trustee of the W. W. Smith Charitable Trust. The Trust has been a generous supporter of Penn Medicine initiatives for more than three decades, including the William Wikoff Smith Chair in Cardiovascular Research, currently held by Dr. Jonathan Epstein.



“I was privileged to be both a medical student at Penn and a house officer at HUP, and I am even more proud of being a Penn Medicine Board member. Quite simply, Arthur is an extraordinary leader. Because of him, Penn Medicine has provided a clear-cut blueprint for a changing health landscape. His historic innovations have redefined how American Medicine – both clinical and research initiatives – will be structured for decades to come.

He took a struggling institution and masterfully wove many disparate parts into an even greater institution that has assumed the pinnacle of medical and health institutions. He did this not with fanfare, but with honesty, integrity, and the ability to have all of us put our trust in him and his vision.

To me, Arthur has accomplished the best in collaboration. To use a sports analogy, he has changed a team of champions into a championship team.”

– Marc Garnick, M.D. '72, G.M.E. '73, is a member of the Penn Medicine Board, the Campaign Cabinet, and the Medical Alumni Advisory Council, and is a recipient of the Alumni Service Award. Dr. Garnick and his wife, Dr. Bobbi Garnick, are shown here with Dean Rubenstein and his wife, Denise, at a reception the Garnicks hosted in the dean's honor. The Garnicks are great proponents and generous supporters of scholarship aid.



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

'50s

Gerald M. Edelman, Ph.D., M.D. '54, Hon '73, San Diego, director of The Neurosciences Institute and president of Neurosciences Research Foundation, received the Navigator Award for 2010 from the Potomac Institute for Policy Studies. The awards are presented to members of Congress and to representatives of the executive branch, industry, and academia in recognition of distinguished contributions in science and technology. Edelman, who is also a professor at The Scripps Research Institute, won the Nobel Prize in Physiology or Medicine in 1972 for his work in antibodies.

Peter J. Jannetta, M.D. '57, G.M.E. '64, was honored with the Neurosurgical Society of America's Medal for Outstanding Service at the 2011 annual meeting. In 2009, he also received the Medal of Honor from The World Federation of Neurosurgical Societies. The Oxford University Press issued his book, *Trigeminal Neuralgia*, last year. Jannetta is professor and vice chairman of neurosurgery at Allegheny General Hospital.

'60s

Fredrick Keller, M.D. '68, professor and director of the Dotter Interventional Institute at the Oregon Health & Science University, was recently awarded the Gold Medal of the Cardiovascular and Interventional Society of Europe. He is the second American physician to be honored with this award. The medal is presented to individuals who demonstrate continuing distinguished and extraordinary service to the discipline of interventional radiology.

Robert W. Block, M.D. '69, G.M.E. '73, professor at the University of Oklahoma School of Community Medicine, has been elected president of the American Academy of Pediatrics. For the past 25 years, his priority has been the prevention and treatment of child abuse and neglect.

'70s

Michael D. Schneider, M.D. '76, was a recipient of the 2010 Distinguished Alumnus Award from the Duke Medical Alumni Association. He took his residency in internal medicine at Duke (1976-78) and later trained in research at the N.I.H. under Nobel Laureate Marshall Nirenberg. Schneider is an eminent researcher in the regeneration of heart muscle following heart attacks, having discovered the existence of latent heart stem cells in both mice and humans. Since 2007, he has been at Imperial College London, where he now serves as director of the British Heart Foundation Centre of Research Excellence and holds the British Heart Foundation Simon Marks Chair in Regenerative Cardiology.

Thomas A. Einhorn, M.D., G.M.E. '77, chairman of the Department of Orthopaedic Surgery at Boston University, was appointed to the Medical Advisory Board of NeoStem, an international biopharmaceutical company with operations in the United States and China.

Adrienne Bentman, M.D. '78, received the 2010 Robert Cancro Academic Leadership Award of the American Academy of Child Adolescent Psychiatry. She is director of the Adult Psychiatry Residency Program at the Institute of Living/Hartford Hospital.

'80s

C. Martin Harris, M.D. '82, chief information officer and chairman of the Information Technology Division of Cleveland Clinic Foundation, joined the board of directors at HealthStream, Inc., which works with health-care organizations to im-

prove training and to reach business objectives.

Ronald L. Kotler, M.D. '82, G.M.E. '87, clinical associate professor of medicine at Penn, received the Edward D. Viner Teaching Award for the second time. The award, given annually by the medical house staff of Pennsylvania Hospital, goes to a member of the hospital's medical staff who has contributed most effectively to the professional development of the house staff. The award is named for Edward Viner, M.D. '60, G.M.E. '64, longtime chair of medicine at Cooper University Hospital.

Guy Fredrick Glass, M.D. '87, a psychiatrist who practices in Manhattan and New Jersey, had his first staged full-length play last year: *The Last Castrato*, at the Connelly Theater in New York City. He has had performances and readings of his plays in New York City, New Jersey, Pennsylvania, Nebraska, Washington, D.C., England, and Japan. *Healing* and *The Therapeutic Hour* were published by Smith and Kraus in the *Best Ten Minute Plays of 2007*. Glass is on the faculty of the Albert Einstein College of Medicine.

'90s

David J. Brailer, M.D., G.M.E. '91, Ph.D. '92, chairman of Health Evolution Partners, an investment company, was elected to the board of directors at Walgreen Co. He was the first national coordinator of health-care information.

Charles L. Nelson, M.D. '92, G.M.E. '97, was appointed director of orthopaedic reconstructive surgery at Geisinger Medical Center in Danville, Pa.

James B. Jones, M.D. '94, has joined Strativa Pharmaceuticals, a wholly owned subsidiary of Par Pharmaceutical Companies, as chief medical officer.

Evan P. Nadler, M.D. '95, recently joined the Department of General and Thoracic Surgery at Children's National Medical Center in Washington, D.C. He

serves as co-director of the Obesity Institute and a principal investigator in the Sheikh Zayed Institute for Pediatric Surgical Innovation, launched in 2009 through a gift from the Government of Abu Dhabi. Nadler performs bariatric surgery on adolescents who meet certain criteria. His basic research has focused on the liver fibrosis associated with biliary atresia. With Monica Hubal, Ph.D., he is working to unravel the origins of metabolic disease so that eventually these conditions can be treated or prevented before they reach a state where surgery is a desired option. Their aim is to develop a blood test to identify which patients are most likely to succeed with certain interventions. Formerly at New York University, Nadler was a visiting professor at the Royal College of Physicians and Surgeons of Canada in 2008.

Bernard J. Costello, D.M.D., M.D. '97, G.M.E. '00, was recently promoted to professor at the University of Pittsburgh. He is chief of pediatric oral and maxillofacial surgery at the Children's Hospital of Pittsburgh. He has received a \$4 million grant from the Department of Defense to study a new regenerative bone putty to treat craniofacial deformities from trauma or other causes.

'00s

Matthew F. McManus, M.D. '05, Ph.D. '03, has been appointed president and chief executive officer at PrimeraDx. The company, based in Mansfield, Mass., is dedicated to the emerging field of molecular diagnostics. He had been head of Cleveland Clinic Laboratories and chief operating office of the Pathology and Laboratory Medicine Institute.

OBITUARIES

'30s

Paul Mecray Jr., M.D. '34, G.M.E. '41, Medford, N.J., former chief of surgery at Cooper University Hospital; September 1,

2010. He was 102 years old. As a member of the Penn Reserve Surgical Unit during World War II, he and other Penn doctors formed the 20th General Hospital in Assam, India, which served combat casualties and Japanese prisoners in India and Burma for three years. While working as attending surgeon at Cooper University Hospital in the 1950s, Mecray was also on the visiting staff of Jeanes Hospital and Fox Chase Cancer Center. He served on the executive committee of the American Cancer Society and started the first New Jersey chapter of the American College of Surgeons. In the 1960s, he founded the Surgical Group of South Jersey, now Virtua Surgical Group.

Morton I. Silverman, M.D. '38, G.M. '50, Allentown, Pa., a retired physician and cardiologist; July 18, 2010. During World War II he was a captain in the US Army Medical Branch in Europe.

'40s

Eleanor M. Anthony, M.D. '41, Raritan, N.J., a physician who retired from the U.S. Public Health Service; May 11, 2010. She had been a staff physician at the National Jewish Hospital.

Lee Rogers, Jr., M.D. '42, Cocoa, Fla.; September 1, 2010. He interned at the Touro Infirmary in New Orleans, then did his surgical training at the Lahey Clinic and later at New York University Post-Graduate Hospital. The first surgeon in Brevard County, Fla., to be certified by the American Board of Surgery, he later served on the Wuesthoff Hospital Board as representative of the medical staff.

Arlington A. Nagle Sr., M.D. '43, Robeson, Pa.; April 12, 2010. From 1945 through 1947, he was a captain in the U.S. Army Medical Corps, having served in World War II. In 1947, he started a private medical practice, and eventually he became part of the Conrad Weiser Medical Group. Nagle was former president of the Berks County Medical Society and was regularly appointed a delegate to the Pennsylvania Medical Society.

He was certified by the American Board of Family Practice.

S. Fulton Tompkins, M.D., G.M.E. '43, Oklahoma City; October 22, 2010. In July 1945 he joined the Navy, in which he served for 11 months. He returned to the Mayo Clinic as an orthopaedic resident. After finishing his training, he joined an orthopaedic surgery practice in Oklahoma City. Tompkins developed a subspecialty interest in treating curvature of the spine. In 1987 he was joined in practice by his son John, and they practiced together until 1998 when the senior Tompkins retired.

Robert Day, M.D. '44, G.M.E. '53, Vero Beach, Fla.; October 29, 2009. He was a veteran of World War II, serving in the U.S. Army Medical Corps. An ophthalmologist, he was a longtime professor and staff member at The Columbia Presbyterian Medical Center.

Michael C. Luciano, M.D. '44, Bridgeport, Conn.; October 11, 2010. In 1944, he served an internship at St. Vincent's Hospital in Bridgeport. He was inducted into the U.S. Army and served in Europe until 1948, when he opened a family medicine practice in Bridgeport. From 1972 to 1973, he served as president of the medical staff at St. Vincent's Hospital. He retired from his practice in 1991.

John J. Laskas Sr., M.D. '45, G.M. '49, Upper Darby, Pa.; July 6, 2010. Laskas enlisted in the Navy and completed his internship at the former U.S. Naval Hospital in Philadelphia. He served as chief medical officer on the troop transport ship U.S.S. *Henrico* before completing his residency in dermatology at HUP. Laskas opened his first office in Chester, staying in the city until his retirement in 1992. He was a clinical professor of dermatology at HUP for more than 30 years and served as chief of the medical staff at the former Sacred Heart Medical Center in Chester and at Crozer-Chester Medical Center in Upland. He volunteered for many years at the free clinic at the old Philadelphia General Hospital and at Crozer-Chester Medical Center.

George W. Thoma Jr., M.D. '45, Galveston, Texas; August 8, 2009. A retired pathologist, he joined the staff at the University of Texas Dental Branch in Houston in 1961. He went full-time there in 1967, when the school adopted a self-paced curriculum that allowed him to test his ideas about reforming education. He is credited with enlarging and expanding the diagnostic biopsy service, expanding the clinical diagnostic service, and establishing the first approved residency training program in oral pathology in Texas. He was the first pathologist to chair the combined departments of general and oral pathology. The author of two dozen scientific papers, Thoma was thesis chairman of pathology for many graduate dentists working on master's degrees in dental specialties. After his retirement in 1983, he moved to Galveston and taught weekly seminars in pathology at the University of Texas Medical Branch for residents in oral and maxillofacial surgery.

Herbert A. Ecker Sr., D.D.S., M.D. '46, G.M.E. '53, Williamsport, Pa., a retired plastic surgeon; December 18, 2009. He earned his D.D.S. degree from Penn's dental school. His military service started while he attended medical school as a 1st lieutenant in the Army. During the Korean War, he was an officer of the U.S. Navy, stationed at a hospital in Long Island, N.Y., where he was the chief of plastic surgery. A diplomat of the American Board of Plastic Surgery, Ecker was also a fellow of the American College of Surgeons and a former president of the American Society of Maxillofacial Surgeons, of the American Society of Plastic and Reconstructive Surgeons, and of the American Association of Hand Surgeons. He instituted and ran the Williamsport Cleft Palate Clinic. At the Williamsport Hospital, he was chief of maxillofacial surgery, plastic surgery, and oral surgery, and had also served on the hospital's board. He also was a consultant for the United States Public Health Service at the U.S. Penitentiary in Lewisburg, Pa. He was a former president of the Lycoming County Medical Society.

Harlan F. Fulmer, M.D. '46, Fresno, Calif.; September 2, 2010. In 1948-49, he was a U.S. Air Force Flight Surgeon in Nagoya, Japan. He had been secretary-treasurer of the Fresno County Medical Society. After a long career as a pathologist at St. Agnes Medical Center in Fresno, he became interested in the stock market and became an accomplished investor.

Robert D. Pearson, M.D. '46, Scarsdale, N.Y.; June 22, 2007. A retired internist, he was president of the Westchester Academy of Medicine and a fellow of the American College of Physicians.

James M. Tanner, M.D. '46, Wellington, U.K.; August 11, 2010. For much of his career he was associated with two London hospitals specializing in the care of children, the Institute for Child Health and Great Ormond Street Hospital for Children. Though his early research was focused on the children of 20th-century Britain, his data and his theories have been applied across the world. In 1948, he took over a study of the childhood growth of residents of an orphanage in Harpenden, north of London. It was initially intended to observe the effects of malnutrition on growth, but it evolved into a longitudinal study. The Harpenden study gave rise to what came to be known as the Tanner stages, or the Tanner scale, a series of steps that defines physical maturation as a boy or girl passes through puberty. Beginning in the late 1950s, Tanner was among the first scientists to study how and when to use human growth hormone to treat children with growth retardation and other deficiencies. He was one of a handful of scientists who first suggested that growth data could be applied in fields like sociology and economics. Tanner's books include *A History of the Study of Human Growth* (Cambridge University Press, 1981); *Fetus into Man: Physical Growth From Conception to Maturity* (Harvard University Press, 1990); and, with Phyllis B. Eveleth, *Worldwide Variation in Human Growth* (Cambridge University Press, 1976, 1991).



Leonard Casser, M.D. '47, Lafayette, N.J.; June 14, 2008. He retired as a general practitioner in 1986.

Sidney O. Hughes, M.D. '47, Winona, Minn.; February 21, 2009. A retired internist, he served as medical director of St. Anne's Hospice and of the student health service of Winona State University.

Harvey C. May, M.D., G.M. '47, Charlotte, N.C.; August 8, 2010. During World War II, he was a major in the U.S. Army Medical Corps, serving in the South Pacific. He completed his residency and fellowship in obstetrics and gynecology at Tulane University. He practiced medicine in Charlotte for more than 40 years and retired in 1992. He was an active member of numerous national and state medical societies and was president of the Charlotte Obstetrics and Gynecologic Society, the North Carolina Obstetrics and Gynecologic Society, and the Southern Obstetrics and Gynecologic Society.

Franklin C. Reyner, M.D. '47, Sunny Isles Beach, Fla.; August 1, 2010. He was former president of the National Cancer Center in New York and was a Life Member of the Nassau (N.Y.) Obstetrical and Gynecologic Society.

Robert M. Ruch, M.D. '47, Memphis; February 26, 2008. A retired obstetrician-gynecologist, he had been a member of the executive committee and director of the Tennessee Division of the American Cancer Society. He was the author of *The Two Clubs of Menasha: A History* (1994).

William L. Shelley, M.D. '47, G.M.E. '54, Carlisle, Pa.; September 29, 2010. He interned at the Reading Hospital and took his fellowship in surgical pathology at HUP, where he was an assistant instructor. From 1953 to 1955, he served as a captain with the U.S. Army at Ft. Campbell, Ky., during the Korean War. A specialist in plastic surgery, he had a fellowship in the American College of Surgeons in 1949. He opened a practice in Carlisle, where he was also a full-time staff member of the Carlisle Hos-

pital and Dunham Army Medical Hospital until he retired in 1983. He was instrumental in creating the EMT training program for the Carlisle Hospital. He was also the first doctor in the area to perform gastroscopy and colonoscopy procedures.

John H. Updegrave, M.D. '47, Easton, Pa.; August 21, 2010. He was a captain in the Army during the Korean War and served as a surgeon. In 1968, he went to Vietnam as a volunteer civilian physician. He started his medical career with his father and continued in private practice as a surgeon in the Easton community until retiring in 1988. Updegrave was a president of the board of directors of ProJeCt (The Center for Family Assistance and Literacy) of Easton, of the Lehigh Valley Health Foundation, and of the Northampton County Medical Society. A governor in the American College of Surgeons, he chaired several campaigns for Easton Hospital.

Howard P. Wood, M.D. '47, Haverford, Pa.; June 20, 2010. When the Korean War broke out, he was in his second year of psychiatric residency at the Colorado Psychopathic Hospital in Denver. After being discharged in 1953, he worked at Lankenau Hospital. He retired in 1989 as its chief of adult psychiatry. He also held sessions during those years at his home office. Wood was coauthor of "Psychological Factors in Alcoholic Women" and "Perception in Residency Training: Methods and Problems," both published in the *American Journal of Psychiatry*.

Rocko M. Fasanella, M.D., G.M. '48, Scituate, Mass., chief of ophthalmology at Yale University from 1951 to 1961; February 10, 2009. He established the ophthalmology residency program at Yale and headed the section there when it was still within the Department of Surgery. He is known for a surgical technique that bears his name and is still widely performed, the Fasanella-Servat procedure for drooping eyelid, which was developed with Javier Servat, M.D. He was editor of *Management of Complications in Eye Surgery* (W. B. Saunders).

Harold H. Gist, M.D., G.M. '48, Smithsburg, Md.; June 24, 2007. He practiced obstetrics and gynecology in Hagerstown for 26 years. A Fellow of the American College of Obstetricians and Gynecologists and a Diplomat of the American Board of Obstetrics and Gynecology, he had been president of the Washington County Hospital medical staff and of the Washington County Medical Society. During World War II, he served with the U.S. Army Medical Corps in China, Burma, and India.

Whitney J. Haight, M.D., G.M. '48, Salt Lake City, a retired otorhinolaryngologist; June 10, 2010. He served in the U.S. Army during World War II and was stationed in Japan during the occupation.

Oscar M. Powell Jr., M.D. '48, G.M.E. '52, San Diego; July 9, 2010. He joined the U.S. Navy while at the University and served during World War II as a member of the V-12 Training units in school and as a corpsman at the U.S. Naval Hospital in Bainbridge, Md. During the Korean War, he served at Naval Hospitals in Chelsea, Mass., and Oakland, Calif., and then saw combat with the First Marine Division as a field doctor on the front lines. He entered the U.S. Naval Reserve as a commander, serving until retirement from the military in 1983. As a physician, he initially practiced internal medicine but became interested in the early development and practice of nuclear medicine. A research radiologist and clinical professor at the University of California at San Francisco, he had been director of Nuclear Medicine Laboratories at Samuel Merritt Hospital, Providence Hospital, Oakland Hospital, and Allegheny General Hospital. He was founding president of the American College of Nuclear Physicians and served as vice president of the Society of Nuclear Medicine.

Gerald J. Gruman, M.D. '49, Somerville, Mass.; September 13, 2007. During the Korean War, he served in the Public Health Service/Coast Guard with the rank of captain and senior assis-

tant surgeon. In 1960, he earned a Ph.D. degree in history at Harvard University, and went on to have a career as an educator and scholar. He published several groundbreaking articles on medical ethics, death and dying, and aging and the elderly. His book, *The History of Ideas on the Prolongation of Life*, was first published in 1966 and republished in 2003.

William A. Pettit Jr., M.D. '49, G.M. '54, a San Diego ophthalmologist; September 6, 2008.

Charles H. P. Westfall, M.D. '49, Lombard, Ill.; June 20, 2010. He interned at Walter Reed Army Hospital and completed his residency at Brook Army Medical Center. Westfall served in the Army and retired from the Reserves in 1990 at the rank of colonel. He was a partner in the Elmhurst Clinic, where he practiced obstetrics and gynecology for more than 30 years. At Elmhurst Memorial Hospital, he served as chairman of the Department of Obstetrics and Gynecology. He was a former president of the Illinois American Cancer Society and the Illinois Interagency Council for a Tobacco-Free Society. He received the American Cancer Society National/Division award for outstanding service.

'50s

William K. Brendle, M.D., G.M. '50, Havre de Grace, Md., a retired surgeon; February 4, 2010. During World War II, he served as a flight surgeon in the Army Air Forces; he eventually retired from the Maryland Air National Guard with the rank of lieutenant colonel. For 34 years, Brendle operated surgical clinics in Havre de Grace and Fallston. He also served as chief of staff and chief of surgery at Harford Memorial Hospital.

Alvin J. Cummins, M.D., G.M.E. '50, Carmel, Ind.; September 27, 2010. After completing his medical training in gastroenterology at Cornell Medical Center in New York City, Cummins moved to Memphis to become assistant professor of medicine at the Uni-

versity of Tennessee. He eventually rose to chairman of the Department of Gastroenterology. He then went into private practice and retired in 1985. He published more than 50 articles in professional journals. A member of Alpha Omega Alpha Honor Medical Society, he was also a Fellow in the American College of Physicians and a Fellow in the American Gastroenterological Association. From 1964 until his retirement, Cummins served on the editorial review board of the *Southern Medical Journal*.

Stanley Edeiken, M.D. '50, G.M. '57, Philadelphia; September 5, 2010. He served in the U.S. Army, 1954-56, then entered private practice in Long Branch and Asbury Park, N.J. He was on the staffs of Monmouth Medical Center and Jersey Shore Medical Center (then known as Fitkin Hospital). After a sailing sabbatical in 1974, he changed his practice and became a specialist in diseases of the breast. Edeiken retired in 1997.

David T. Tayloe Sr., M.D. '50, Washington, N.C.; June 25, 2010. After taking his internship at the Medical College of Virginia, he entered military service at Portsmouth Naval Hospital. He then took his pediatrics residency at Duke, interrupted in part by another year of military service at Camp Lejeune. In 1955, he began his pediatric practice in Washington. A Fellow of the American Academy of Pediatrics, he served as a district chairperson for the academy. The N.C. Pediatric Society/N.C. Chapter of the American Academy of Pediatrics presents the annual David T. Tayloe Senior Award for Community Pediatrics to its outstanding community pediatrician. In 1985, Tayloe received the Distinguished Service Award of the University of North Carolina School of Medicine.

Joseph Winsten, M.D., G.M. '50, Lexington, Mass., a retired plastic and reconstructive surgeon; April 14, 2010. His practice began in Boston and Cambridge. For more than 25 years he practiced in Concord at Emerson Hospital.

Mary McNeal Wood, M.D. '50, G.M.E. '53, Montclair, N.J.; July 10, 2010. As an intern at HUP, she met her future husband, Dr. Francis Wood. Following her residency in anesthesiology at HUP, she joined the anesthesia staff. In 1959, Wood settled in Montclair. She was successively on the anesthesia staffs of the New Jersey Orthopedic Hospital in Orange; of Orange Memorial Hospital, where for a time she headed the anesthesia department; and eventually at the Mountain-side Hospital in Glen Ridge/Montclair, from which she retired in 1989. She served as a trustee of Bloomfield College.

John M. Keller, M.D., G.M. '51, Naples, Fla.; August 18, 2010. He was associate professor of obstetrics and gynecology at the University of Illinois and then professor of ob-gyn at the University of Health Sciences/Chicago Medical School. Keller pioneered research in placental perfusion and diagnostic ultrasound in obstetrics. From 1986 to his retirement in 1994, he practiced high-risk ob-gyn in Lincoln, Neb.

Harry H. Kretzler Jr., M.D. '51, G.M.E. '55, Seattle, a retired orthopaedic surgeon; July 5, 2010. He practiced primarily at Northwest Hospital and Stevens Hospital. He taught orthopaedics at the University of Washington School of Medicine and served as orthopaedic consultant to the Rainier State School for more than twenty years. Kretzler had also been the team physician for a number of sports clubs, including the United States World Cup Ski Team and the United States Olympic Team, and served on physician panels for the National Football League as well. He was a founding member of the American Academy of Sports Medicine.

Carl M. Shetzley, M.D. '51, Doylestown, Pa.; July 1, 2010. He retired from family medicine practice in 1991, having served as president of Doylestown Hospital's medical staff and as president of the Bucks County Medical Society. He was a delegate to the Pennsylvania Medical Society for 20 years.

Robert J. Stubblefield, M.D., G.M.E. '51, Memphis, Tenn.; June 2, 2010.

Arthur Brody, M.D. '52, Santa Barbara, Calif., a retired orthopaedic surgeon; January 19, 2010. He took his internship at Bellevue Hospital in New York City and later completed his training at Columbia Presbyterian Hospital. Brody was one of 14 doctors who started the Hawthorne Community Medical Group, which at one point grew to include 120 doctors and 700 employees, with branches throughout the Los Angeles area. The group formed an early health-management organization, Maxicare Health Plans, Inc., which served more than 200,000 patients. Brody was also one of the first orthopaedists in the region to incorporate arthroscopic surgery into his practice.

Herbert W. Copelan, M.D. '52, Boca Raton, Fla.; September 29, 2010. He was a specialist in internal medicine and cardiovascular disease until his retirement in 1989. He had been director of the Department of Medicine at Albert Einstein Southern Division and was an attending physician at Pennsylvania Hospital.

Wayne B. Lockwood, M.D. '54, Nichols Hills, Okla.; December 14, 2008. He had been a clinical professor of orthopaedics and chief of orthopaedic clinical faculty at Oklahoma University School of Medicine.

William P. Rumsey, M.D., G.M. '54, Wallingford, Pa., retired chief of surgery at Sacred Heart Hospital in Chester; July 9, 2010.

George T. Varga, M.D. '54, Bridgeton, N.J.; June 11, 2010. An obstetrician, he was a former chief of staff at Bridgeton Hospital. He then taught at Holy Cross Hospital in Salt Lake City. In 1979 he joined the medical staff at Medical Center of Arlington, where he also served as a board member and chief of staff.

Samuel Craighead Alexander Jr., M.D. '55, G.M.E. '62, Haverford, Pa.; June 23, 2010. He completed an internship at Philadelphia General Hospital and both a residency in anesthesiology and a

fellowship in pharmacology at Penn. He was then a professor of anesthesiology at Penn for eight years. He spent two years as director of the Navajo Indian Hospital in Winslow, Ariz. After a period as chairman of the Department of Anesthesiology at the University of Connecticut, he served as chair of anesthesiology at the University of Wisconsin for 20 years. From 1991 until he retired in 1996, Alexander was dean of affiliate affairs at Hahnemann Medical College, now Drexel University College of Medicine. Active with the American Society of Anesthesiologists and the Association of University Anesthesiologists, he helped establish the Foundation for Anesthesia Education and Research.

William Bernard Haeussler, M.D. '55, Chandler, Ariz.; October 12, 2010. He served a term as president of the Arizona Psychiatric Society.

Thomas C. Lloyd Jr., M.D. '55, former Professor of Medicine and Physiology at Indiana University Medical Center, Indianapolis; July 8, 2010.

Albert E. Marland Jr., M.D., G.M. '55, Bethesda, Md.; July 26, 2010. He practiced medicine in Washington, D.C., with his father, Albert Sr., and his brother, Jackson T. Marland. He served as a medical officer in the Navy during World War II and was a doctor at Bethesda Naval Hospital during his 14 years of Naval service. Later, he was appointed to the White House Staff by President Harry S. Truman and President Dwight D. Eisenhower.

Neville G. Achong, M.D., G.M.E. '56, Tampa, Fla.; February 24, 2004.

Sushil C. Chakravarty, M.D., G.M. '56, New Delhi; January 1, 2010. He was on the staff of the V. P. Chest Institute at the University of Delhi. Earlier, he had been in the Department of Chronic Diseases of the Chest at Philadelphia General Hospital.

Richard O. Rogers Jr., M.D., G.M. '56, Franklin, Va.; November 18, 2008.



Charles T. Fitts, M.D. '57, G.M.E. '64, Awendaw, S.C.; November 4, 2008. During his tenure at the Medical University of South Carolina (MUSC), he held several appointments, including professor of surgery, medical director of the South Carolina Organ Procurement Agency, and attending surgeon at Medical University Hospital and at the Veterans Administration Hospital. He is credited with pioneering the organ transplant program at MUSC, where he performed the first kidney transplant on December 3, 1968. Fitts also served as a trauma surgeon in Vietnam as well as chief of the Trauma Study Branch, at the Brooke Army Medical Center in Texas. Author of more than 100 medical articles, he was also a sought-after specialist in snake and alligator bites in the Southeast. After retiring from MUSC, Fitts entered private practice with his son, Dr. Casey Fitts, at Coastal Surgical Associates in Charleston.

Guenther H. Heidorn, M.D., G.M. '57, Minot, S.D., a retired cardiologist; February 2, 2009.

Charles E. Schlager, M.D. '57, York, Pa.; September 20, 2007. After completing his residency at York Hospital, he founded Lyon/Schlager Medical Practice, where he practiced for 49 years. (It is known today as Family Health Associates). Schlager was the program director for the Family Practice Residency Program at York Hospital for nine years. A charter member of the American Board of Family Practice and of the American Association of Family Practice, he had been president of the York County Medical Society and secretary of the Pennsylvania Medical Association.

Robert R. Lawrence, M.D. '58, Lancaster, Calif.; September 1, 2010. An orthopaedic surgeon, he was associated with the Antelope Valley Hospital and Lancaster Community Hospital.

Robert C. MacDuffee, M.D., G.M.E. '58, Elizabethtown, N.C., a retired physician; December 7, 2009. After earning his medical degree from the University of

Chicago, he served in the U.S. Army at Walter Reed Hospital and with the 1st Cavalry Division in combat duty in Korea. Board-certified in family practice and pathology, he practiced in Maine, Pennsylvania, and Florida. He retired from the Naples Medical Center, in Fla., where he founded the Walk-In Clinic to provide affordable medical care to all people. He was a former president of the MacDuffee Clan Society of America.

James E. Brackbill Jr., M.D. '59, West Newbury, Mass.; July 28, 2010. He served as a captain in the U.S. Army in Korea. He practiced family medicine with his brother in Georgetown for 10 years before taking a surgical residency at the Maine Medical Center in Portland. He was the physician for the Georgetown High School football team and conducted yearly physicals for the Boy Scouts during his medical career. He returned to practice surgery at the Hale Hospital (now Merrimack Valley Medical Center) in Haverhill and the Anna Jaques Hospital in Newburyport from 1973 until the late 1990s.

A. James Fessler, M.D., G.M. '59, Trenton; November 6, 2010. He entered his father's practice and practiced there until his death at the age of 83. He had been associated with McKinley Hospital and Helene Fuld Hospital. He was a fellow of the International College of Surgeons.

'60s

Adolfo Fernandez-Carol, M.D., G.M. '60, Miami; July 4, 2010. A Diplomat of the American Board of Internal Medicine and a Fellow of the American College of Gastroenterology, he practiced medicine for more than 40 years. Much of his career was spent at Mercy Hospital, where he served as chief of staff of the gastroenterology department and president of the medical staff.

Randall Fraser Hipple, M.D. '60, Williamsport, Pa.; August 22, 2010. From 1964 to 1966, he served in Vietnam as a cap-

tain in the U.S. Army Medical Corps. He joined Lycoming Obstetrics and Gynecology in 1966 and retired from there in 1997. A Diplomat of American Board of Obstetrics and Gynecology, he served in numerous capacities with the Lycoming County Medical Society and the American College of Obstetricians and Gynecologists. At the Williamsport Hospital, he had been chief of staff, chairman of the Department of Obstetrics and Gynecology, and president of the medical staff. He had also served as chief of staff at Divine Providence Hospital. For more than 30 years, he was on the Williamsport City Council and had been its president. Hipple was honored for his strong commitment to historic preservation in 2005 when the "Dr. Randall F. Hipple Historic District" was designated in recognition of his efforts. He received the Lycoming County Medical Society Community Service Award in 1999.

John Clark May, M.D. '60, Lancaster, Pa.; June 22, 2010. Following his service with the Army, May completed his medical training at the Mayo Clinic. In 1966, he began his career in obstetrics and gynecology in Lancaster. With his partner, Alistair Grant, he established one of the largest ob/gyn practices in Pennsylvania. He was on the staff at both the Lancaster General Hospital and St. Joseph's Regional Hospital; from 1990 to 1994, he served on the faculty of the Lancaster General Hospital Family Practice Residency Program and received its award for outstanding teacher. In 1999, the hospital awarded him the Henry S. Wentz Award for outstanding contributions to the hospital, to graduate medical education, and to the Lancaster community. He retired from medical practice in 2005.

William F. Wieland, M.D. '60, G.M.E. '65, Atlanta; October 4, 2010. In 1972, he was appointed by Governor Jimmy Carter to direct the Department of Drugs and Alcohol for the State of Georgia. He went on to serve in leadership positions at Ridgeway Institute and CPC Parkwood Hospital. He continued to

treat patients in private practice until he suffered a stroke in 1995.

William W. Duke, M.D. '61, Lancaster, S.C.; August 14, 2010. After completing his medical training at the University of North Carolina and the University of Alabama, he practiced medicine for almost 40 years. He was a Fellow of the American College of Physicians and a Fellow of the American College of Gastroenterology.

Gilbert A. Friday Jr., M.D., G.M.E. '62, Upper St. Clair, Pa., a retired pediatrician who had specialized in allergy and immunology. He had taught pediatrics at the Children's Hospital of Pittsburgh and was a president of the Allegheny County Medical Society.

Mary Luz Coady Baldwin, M.D., G.M.E. '63, former director of pediatrics at Bryn Mawr Hospital; April 4, 2010. She earned her M.D. degree from Women's Medical College of Pennsylvania. Senior attending physician at Bryn Mawr Hospital from 1984 to 1991, she was named Distinguished Emeritus Pediatrician by the hospital in 1999. She was a Fellow of the American Academy of Pediatrics and had served as president of The Philadelphia Club of Medical Women.

Yung-Ching Chu, M.D., G.M. '63, Marlboro, N.J., a retired physician of internal medicine; October 15, 2010.

Peter J. Cohen, M.D., G.M.E. '64, Washington, D.C., a former associate professor of anesthesia at Penn; August 14, 2010. During the 1970s and 1980s, he chaired the anesthesiology departments at the University of Colorado and University of Michigan medical schools and became an outspoken supporter of the legalization of medical marijuana. He parlayed his medical career into advocating for the research and testing of medical marijuana when he earned a law degree from Georgetown University in 1995. During the mid-1990s, he worked as a policy

expert for the National Institute on Drug Abuse. Since 1998, he had been an adjunct law professor at Georgetown University, teaching public health law and a course that explored the legal, medical, and ethical issues surrounding alternative medicine. From 1964 to 1966, he served in the Army Medical Corps, conducting medical research at Walter Reed Army Institute of Research in Silver Spring and setting up a hospital near Tokyo to treat wounded soldiers from Vietnam. He chaired the Society of Academic Anesthesiology Chairs. From 2000 until June 2010, he was chairman of the Physician Health Program of the Medical Society of the District of Columbia. He wrote *Drugs, Addiction, and the Law: Policy, Politics, and Public Health* (2004), as well as books and articles about the effects of anesthesia on the brain.

Harry C. Press, M.D., G.M.E. '65, Washington, D.C.; July 4, 2010. After taking a residency in radiology at Freedmen's Hospital (now Howard University Hospital), he trained at what is now Walter Reed Army Medical Center and the National Naval Medical Center. In the mid-1960s, he joined Howard University's faculty and led its radiology department for several years. During his tenure, the department's residency program became nationally accredited.

Wendell M. Kury, M.D. '66, Laramie, Wyo., a psychiatrist; November 12, 2010.

'70s

Michael B. Bongiovanni, M.D. '76, G.M.E. '80, Harrisburg, Pa.; August 21, 2010. He served two years as director of the hematology laboratory and associate director of the blood bank at HUP before joining the faculty at the Penn State Hershey Medical Center in 1982 as medical director of its blood bank and apheresis. In 1990, he became chief of its Division of Clinical Pathology and director of Clinical Laboratories. He played an active role in supporting the Central Pennsylvania Blood Bank. He pub-

lished twenty original papers and many abstracts, editorial reviews, and chapters.

Joseph K. Eshleman, D.O., G.M.E. '76, Pottsville, Pa.; July 21, 2010. He was board-certified in physical medicine and rehabilitation in 1978 and later became the director of physical medicine at the VA Hospital in Philadelphia. He had taught in Penn's medical school and was a member of the clinical teaching faculty of the Philadelphia College of Osteopathic Medicine. He relocated to Pittsburgh in 1990, where he was director of physical medicine and rehabilitation at St. Francis Hospital.

Harold E. Wells, M.D. '78, Wallingford, Pa.; February 19, 2010. He was a board-certified internist and pulmonologist at the Coatesville VAMC. He took his residency in internal medicine at the University of Cincinnati Medical Center and his fellowship in pulmonary medicine at Temple University.

Eric E. Holt, M.D. '79, Jesup, Ga.; May 19, 2010. He completed his residency at Tulane University. A nephrologist, he was associated with Wayne Memorial Hospital.

'80s

Saw Batunkeyi, M.D., G.M.E. '87, Lafayette Hill, Pa.; May 6, 2009. Board-certified in physical medicine and rehabilitation, he was a member of the Burmese Medical Association of North America.

FACULTY DEATHS

Samuel Craighead Alexander. See class of 1955.

Michael B. Bongiovanni. See Class of 1976.

Peter J. Cohen. See Class of 1964.

Joseph K. Eshleman. See Class of 1976.

Alfred P. Fishman, M.D., the William Maul Measey Emeritus Professor of Medicine; October 6, 2010. Born to Lithuanian immigrants in Depression-era Brooklyn, he received an M.D. degree from the University of Louisville in 1943. He worked in several laboratories, including the Cournand, Richards, and Werner Forssmann Laboratory, which won the Nobel Prize in Physiology or Medicine a year after he left. Fishman came to Penn in 1969 as an associate professor of medicine and director of the Cardiovascular-Pulmonary Division, a position he held until 1989. During his tenure as chief of the Division of Cardio-Pulmonary Medicine, his group made many contributions in the field, including discovering why patients with severe deformations of the spine (kyphoscoliosis) suffer lung disease and how to improve their care. For seven years he was also associate dean of the School of Medicine and later associate dean for research. A former chair of the Department of Physical Medicine and Rehabilitation and chair of the Health Promotion and Disease Prevention Council, he served most recently as senior associate dean for program development and director of the Office of Complementary and Alternative Therapies.

Among his many honors, Fishman was elected a member of the Institute of Medicine of the National Academy of Arts and Sciences and was an honorary fellow of the American College of Cardiology and of the American College of Chest Physician. He also received the Distinguished Achievement Award of the American Heart Association AHA, and the Distinguished Alumnus Award from the University of Louisville. In 2001, Fishman was the recipient of the prestigious Edward Livingston Trudeau Medal, the highest award offered by the American Thoracic Society. In 2003, he was designated a Fellow of the American Heart Association. Over the years, he had been a consultant to NASA for the Mercury space program; a consultant to the executive office of the President of the United States; a member of the National Heart,

Lung, and Blood Institute; and chairman of the Health Sciences Policy Board of the Institute of Medicine. A former president of the College of Physicians of Philadelphia, he edited nine books and published more than 250 scientific articles.

Alan Gewirtz, M.D., the C. Willard Robinson Professor of Hematology-Oncology; November 17, 2010. He earned his M.D. and M.A. degrees in microbiology from State University of New York at Buffalo in 1976. After six years at Temple University, he came to Penn in 1990. He advanced to full professor in 1998. Gewirtz's research focused on the cell biology of normal and malignant human hematopoiesis, and his goal was to advance the development of more effective and less toxic therapies for human leukemia. He was the recipient of the Doris Duke Distinguished Clinical Scientist Award and *Philadelphia Magazine* included him in its 2010 listing of "Top Docs." Gewirtz served on a number of editorial boards, including *Cancer Gene Therapy*, and reviewed manuscripts for numerous scientific journals. A holder of nine patents, he was a member of the Medical/Scientific Advisory Committee of the Leukemia Society of America and was a national trustee of the organization. He was elected to the American Society of Clinical Investigation in 1990.

Thomas R. Kadesch, Ph.D., professor of genetics and interim chair of the department; January 12, 2011, after pancreatic surgery. He was 58. Kadesch earned a doctorate in biochemistry at the University of California at Berkeley, then completed a fellowship in biochemistry at Stanford University. He joined Penn in 1984 as an assistant professor of human genetics and an assistant investigator for the Howard Hughes Medical Institute. In 1996, he became a full professor in 1996. Kadesch's research concentrated on ways in which cells control the expression of their genes, with a focus on a particular molecular process called the



Notch signaling pathway that is critical to cell differentiation. Editor of the journal *Molecular and Cellular Biology* from 1992 to 1996 and a member of its editorial board from 1991 to 1993, he was also a member of the American Society for Microbiology and the American Association for the Advancement of Science.

Winifred A. Koelle, M.D., Bryn Mawr, Pa., a retired internist and professor of pharmacology; July 30, 2010. Raised in the Dutch East Indies, now Indonesia, by her father, a Dutch colonial official and her American mother, Koelle and her family were interned by the Japanese during World War II. She learned science and chemistry from educated women in the labor camps. When the war ended, she attended Wellesley College and then obtained a medical degree from Columbia University. Early in her career, she was a fellow in research medicine at Penn before going on to become the chief of the intensive care unit at Taylor Hospital. From 1970 to 1975, Koelle was chief of outpatient medicine at Philadelphia General Hospital. She taught at Penn in the pharmacology department until her retirement in 1982.

John J. Laskas. See Class of 1945.

Igor Laufer, M.D., Bala Cynwyd, Pa., professor of radiology; September 14, 2010. Born in what is now Slovakia, he earned his M.D. degree from the University of Toronto in 1967. He was a clinical fellow at Harvard Medical School from 1969 to 1972, then chief resident at Beth Israel Hospital in Boston. He also served as an assistant professor of radiology at McMaster University in Toronto. In 1976, he joined Penn's medical faculty and quickly rose to full professor after only four years with the department. He was the chief of gastrointestinal radiology at HUP from 1976 to 1997 and residency selection director for the department from 1999-2004. Laufer was known for pioneering the techniques for performing double-contrast G.I. radiology and for

developing and refining double-contrast studies for both the upper and lower gastrointestinal tracts. His work generated a resurgence of barium studies and a new era of double G.I. radiology. Author of *Double Contrast Radiology of the Gastrointestinal Tract*, he had been president of the Society of the Gastrointestinal Radiologists and received its Walter B. Cannon Medal, for outstanding lifetime achievements in G.I. radiology. In 2005, he won the Outstanding Educator Award from the Philadelphia Roentgen Ray Society.

William Harker Rhodes, V.M.D. '55, Douglassville, Pa., emeritus professor of radiology at Penn's School of Veterinary Medicine and its School of Medicine; September 29, 2010. From 1955 until his retirement in 1985, he was a faculty member in the veterinary school with a joint appointment in the medical school. He received a Lindback Award for Distinguished Teaching in 1965. Rhodes played a major role in the development of veterinary radiology; he was a founding member and president of the Educators in Veterinary Radiologic Science and president of the American Veterinary Radiologic Society. In addition, he was a charter member and chair of what is now the American College of Veterinary Radiology, which honored him with its award for distinguished service. From 1963 to 1979, he was the first editor of *Veterinary Radiology*. He had served as a radiology technician in the U.S. Navy, 1943-46.

J. Edwin Wood III, M.D., Bryn Mawr, Pa., emeritus professor of medicine at Penn and chair of medicine at Pennsylvania Hospital from 1969 to 1990; August 15, 2010. He had also been president of the professional staff at the hospital. Until retiring in 1996, he worked for Correctional Healthcare Solutions in Chalfont. He was the author of *The Veins: Normal and Abnormal Function* (Little Brown, 1965).



Helping Others Beat the Odds Patient Triumphs with Legacy Gift to the Transplant House



In 2003, Maureen Hillary donned a pair of boxing gloves and ran up the steps of the Philadelphia Art Museum. The iconic fists-raised-in-triumph stance she took was more than just a pose.

She completed her "Rocky Run" on the last day of rehab four months after receiving a double lung transplant.

"After my surgery, I was reborn, and I had a new outlook on life. I knew it was now time for me to help other transplant patients," she said.

Mrs. Hillary decided to include a bequest in her will to support the Clyde F. Barker Transplant House, which is due to open in mid-June. By adding this specific bequest, Ms. Hillary has created a legacy gift, planned for the future of the Transplant House, and helped preserve excellence in care for future transplant patients.

The purpose of the transplant house is to provide affordable housing to transplant patients and their families. For many, traveling to and from the hospital is mentally and physically draining; and housing during their hospital stay takes a great financial toll.

Mrs. Hillary recalls that during treatment, she had to visit the hospital three times a week for three months. Fortunately she and her husband, Geoff, could afford accommodations. Mrs. Hillary thought of others who might not be as fortunate.

"I am passionate about helping others who are going through the same type of adversity," she said. "Illness affects everyone whether you are rich or poor. I needed to ensure other patients would be taken care of during a time of crisis."

Mrs. Hillary is on her third "bucket list," travels every chance she gets, and makes a point to never turn down an invitation to a party.

"When you are living on borrowed time, you enjoy every moment. Penn gave me my life back, and I am just thrilled to share my gratitude!"

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

Forward Thinking

After my 10 years as dean of the Perelman School of Medicine and executive vice president of the University of Pennsylvania for the Health System, I would like to thank everyone who helped me and worked with me during this often challenging but always enjoyable time. It has been a privilege to serve you as leader of Penn Medicine, and I am profoundly grateful to have had this opportunity.

In May, I addressed the Class of 2011 during our graduation ceremonies. As we send our new physicians out into the world, I wanted to explain why, despite some dissatisfaction being voiced about our profession, I believe our graduates have made the right choice. My last words to our new physicians underscored my reasons for continued optimism. Here, I will use my last “Last Word” to suggest why the future for our profession is not bleak but exciting and challenging.

In a recent issue of *Penn Medicine*, physicians who practiced solo or in small groups cited battles with insurers and bureaucracies, lower reimbursements, higher office expenses and malpractice insurance costs, and longer work hours. They also felt a significant loss of autonomy. Many cannot or will not embrace electronic medical records and other forms of technology. For these and other reasons, many older physicians feel a widening gulf between themselves and their patients.

Yet despite these concerns, enthusiastic young people continue to enter the profession of medicine! At the top-ranking schools, the median grade-point average most recently was an incredible 3.8 to 3.9. Sixty-eight percent of Penn Medicine students entering in 2010 took at least one year off between college and medical school. In that time, some were Fulbright Scholars, Gates Foundation Scholars, and Howard Hughes Fellows. Some did not-for-profit work in such places as Botswana and Haiti. Others performed research in academic medical centers.

Thus we have a paradox: while many older members of the profession are dis-

illusioned, the best and brightest students are competing to become physicians.

The major challenge, I feel, is mainly a generational issue. What is difficult and stressful for older generations may be much less so to today’s young physicians. They may value autonomy less than those of us who went into practice in the 20th century. At Penn, recent classes have been organized into teams, which we believe will position our students well to work in the changing health-care system. Our recent graduates often place a higher value on a balanced lifestyle, with more time for their families. They are able to deal with the profusion of new knowledge because they are adept at evaluating it with the help of new information technologies. They are certainly more proficient at using newer electronic devices. To think that playing video games could help prepare a doctor to perform delicate robotic surgery!

A Range of Opportunities

In spite of the uneasiness expressed by many older physicians, there are wonderful opportunities for our new graduates. Because of our interdisciplinary programs, a majority of Penn Medicine students earn more than one degree or certificate or take a year out to do research or to work in global health. Our new M.D.s, many with broader training, are well suited to contribute to public policy, public health, health-care delivery, and scientific research. Some may work as a hospital administrator, an epidemiologist, a developer of policy at the FDA, or biotech entrepreneur.

But it is the other chief role of a physician that gives concern to the profession – the physician as healer.

Recently, the *Journal of the American Medical Association* ran a commentary called “Patient-Physician Communication” (May 4, 2011). The authors acknowledge the incredible progress made over the last decades in discovering the scientific underpinnings of medicine. Their concern, however, is that technological advances “have taken precedence over one of the most important skills of the compassionate

physician – the art of listening to the patient. Patients often experience physicians as being too busy to listen and too distant to care.”

The first solution I offer is to emphasize the quality of humility. Over the years, many writers have suggested the attributes necessary for a successful patient-physician relationship, among them honesty, warmth, and patience. But more and more, I am convinced that humility is essential. Physicians must not hide behind their superior knowledge and their brand-new instrumentation. We should not patronize. We must realize that we are not superior to our patients but just more fortunate. I am particularly concerned for poor patients, who often get lost in the system – but whose needs are often greater than anyone else’s.

As for my second solution? That one I leave to my new colleagues. We older physicians have not solved the problem, but I am confident that the solution lies among our newest graduates or those still in medical school.

There are many precedents to support my confidence, among them, Bill Gates and Paul Allen, barely in their twenties when they created Microsoft; or Larry Page and Sergey Brin, both Ph.D. candidates at Stanford University when they founded Google. Penn’s faculty has given our graduates the tools to transform our clinical care system as the next decade unfolds. They will be able to perform translational research; work ethically with industry to discover new drugs; and become great clinicians. They will be the ones to shape more workable health-care policies. And if they embrace humility, they will also find innovative ways to restore the beauty of the physician-patient relationship.

Even in this challenging world, I believe our students have made the right decision in pursuing a medical profession. I am optimistic that, like me, they will look back some day on a full and satisfying career. ♥

Arthur H. Rubenstein, M.B.,B.Ch.

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t Penn Medicine, physician-

scientists are creating new DNA

vaccines that hold great promise for

fighting disease more effectively,

with fewer side effects. Less like a

drug in a bottle or a vaccine in a

vial, they are “more like a next-

generation blood transfusion.” But

the new vaccines are expensive, and

funding can be hard to find.

