



PENN Medicine

WINTER 2007



A CRITICAL PERIOD

Adolescence and Mental Health

Ben Franklin, Mover and Shaker
A Banner Year for Beck
Paul Offit, The Vaccine Man
It's Sports in the Family

The Topic Was Professionalism

As the Summer 2006 issue of *Penn Medicine* suggested in two interrelated articles, humanism and professionalism are hot topics these days in Penn's School of Medicine and in peer institutions. Since the school introduced Curriculum 2000, humanism and professionalism have been prominent throughout the four years of study. The latest addition to that part of the curriculum was LEAPP (Longitudinal Experience to Appreciate Patient Perspectives), in which students are paired with chronically ill patients over the first three years of their medical school careers. As Paul Lanken, M.D., the professor of medicine and medical ethics who runs the program, puts it: "Now, first-year students can get right into the trenches, hit the ground running, and see professionalism and humanism in action."

But no single initiative will suffice to make students professional. And that was why the school sponsored a presentation in November called "Changing the Culture: Promoting Professionalism."

The speaker was David T. Stern, M.D., Ph.D., associate professor of internal medicine and medical education at the University of Michigan. Stern is a leading authority on professionalism and an advisor to the Arnold F. Gold Foundation. "I don't think you can actually teach professionalism," he said – but, he added, you *can* promote it.

Stern began by defining professionalism, explaining that it included clinical competence, communication skills, and ethics. These were necessary but not sufficient to define the professional. Stern added another set of principles: excellence, which is not simply being smart; humanism, "the warm and fuzzy stuff"; accountability, to the organizations in which physicians

work and to their patients; and altruism. Stern noted that physicians who entered practice in different eras have rather different notions of the place of altruism. The impression he gave, in tune with a public discussion on professionalism last spring at Penn, is that many younger doctors feel that impulse less strongly. Still, Stern believes doctors must have a life outside the hospital and must not ignore family. Referring to his four principles, he added, "You don't get to be all those four things all the time." Sometimes, the professional has to choose among them – wisely.

How, then, to promote professionalism in our schools? According to Stern, through expectations, experiences, and evaluation. The schools must tell students clearly what they expect, and white coat ceremonies provide an excellent forum. Regarding experiences, Stern distinguished between the formal and the informal curriculum. The former, he said, is not necessarily the most powerful influence. Stern commends lectures on ethics, courses on the doctor-patient relationship, the use of standardized patients. Reflective exercises are increasingly popular, he said, but not yet at Penn. On the other hand, Penn is doing very well with another of his items, international experiences – "getting out of the context of your own world." Many of his Michigan students, he said, return from abroad with a profound change of attitude.

The informal curriculum is one schools have little control over. It is something that "happens alongside the formal curriculum." Stern showed a clip from the television show *ER*, in

which a new student on the hospital floor gets a glimpse of hierarchies and preconceptions as he's escorted about. Most teaching of values, Stern suggested, is done informally, in places like staff rooms, while walking with senior doctors, at the coffee machine. Often the most effective way to teach values is through parables. But not overtly. Instead, a story is introduced with "Oh, I've got this great case . . ." or "when I was an intern . . ." Always they convey something about what it means to be a doctor.

As for evaluation, Stern recommends having awards for professional behavior to create expectations and having student evaluations from faculty, peers, and patients. Peers, he said, know more than anybody. Often, they can readily say "who you wouldn't want anywhere near your family."

What predicts professional behavior in the clinical years? Stern referred to a cohort study of an entering medical class at Michigan. He and colleagues found a correlation between professional behavior and completing class evaluations and being compliant with immunizations. As he pointed out, getting immunized helps protect *patients* as well; it shows responsibility.

That outlook ties in with a study Stern helped produce (*The New England Journal of Medicine*, December 22, 2005). As the authors put it, "we found that physicians who were disciplined by state medical-licensing boards were three times as likely to have displayed unprofessional behavior in medical school than were control students." That lack of professionalism was most often irresponsibility and diminished capacity for self-improvement.

Stern's message: promoting professionalism and sanctioning unprofessional behavior *can* make a difference in a student's career. ♥

John Shea

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A CRITICAL PERIOD *By Martha Ledger*

With major contributions from Penn's School of Medicine, School of Arts & Sciences, and Annenberg School for Communication, a multidisciplinary group of national experts has produced a series of books to help in the diagnosis and treatment of adolescents with mental disorders.

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TURNING HIV AGAINST ITSELF *By Karen Kreeger*

A Penn research team has had promising results in an innovative test: they used a disabled HIV virus to deliver genetic material that blocks HIV reproduction in patients for whom standard treatments were not effective.

DR. FRANKLIN'S MEDICINE *By Stanley Finger, Ph.D.*

A recent book provides a fuller look at Benjamin Franklin's many accomplishments in medicine and health, as well as his role in the founding of Pennsylvania Hospital and in the creation of the first medical school in the colonies.

A BANNER YEAR FOR BECK *By John Shea*

For Aaron T. Beck, M.D., known as "the father of cognitive therapy," 2006 was a very busy year for accepting honors. He capped off the year by winning a Lasker Award.

FINDING THE CONNECTION *By Karen Kreeger*

Having discovered that amyotrophic lateral sclerosis and frontotemporal dementia share a disease protein, Penn researchers hope the finding will open up new avenues of research into how the crumpling of specific brain proteins leads to strange behavior and paralysis.

GLIMPSES OF BOTSWANA *Photos by Rick Cushman*

When he accompanied a delegation of Penn administrators and doctors to Botswana last year, Rick Cushman brought along a camera and captured some of the visitors and the people they met.

THE VACCINE MAN *By Nicole Gaddis*

Paul A. Offit, M.D., professor of pediatrics, recently shared an award for developing a vaccine for the rotavirus. He's also published a gripping book about one of the worst incidents in the history of vaccines.

IT'S SPORTS IN THE FAMILY *By Jon Caroulis*

Despite busy schedules, Robert Tokarek, M.D. '92, a dermatologist in private practice, and Karen Bowles, M.D., an internist in Penn's health system, make time for athletic pursuits.

Please Take the Penn Medicine survey. Use the enclosed postage-paid postcard or access the survey on line at www.uphs.upenn.edu/survey/PennMedicine

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Celebrating the gift and its promise, from left to right, are: Brian L. Roberts and his wife, Aileen; Amy Gutmann; Ralph Roberts and his wife, Suzanne; Arthur H. Rubenstein; and Ralph Muller, CEO of Penn's Health System.

PROTON THERAPY CENTER GAINS A NAME

It was, in the words of Amy Gutmann, Ph.D., president of the University of Pennsylvania, “a glorious occasion.” With a pledge of \$15 million from Ralph J. Roberts (Wharton ’41) and his son, Brian L. Roberts (Wharton ’81), PENN Medicine will be able “to change the face of cancer treatment and research throughout the world.”

Gutmann was speaking at a December reception to announce the gift and honor the Roberts family for its generosity. The gift will support what will now be called The Roberts Proton Therapy Center. The new center will be unique in its ability to fully integrate conventional radiation treatment with proton therapy, which more accurately targets tumors. In addition, when it opens in 2009, the center will also be the first to be located on the campus of a world-class academic medical center, which will foster scientific research to measure and improve this innovative therapy. The gift will help finance the center’s construction and equipment.

Proton therapy is the most precise form of advanced radiation therapy available to treat certain cancers and other diseases. It works by targeting a focused beam of high-

dose radiation to a specific tumor site, dramatically decreasing damage to surrounding normal tissue. According to Arthur H. Rubenstein, M.B., B.Ch., executive vice president of the University of Pennsylvania for the Health System and dean of the School of Medicine, “With x-rays, as many as 20 percent of cancers return because treatment was too low to be effective or the side effects were too great.” On the other hand, proton therapy results in fewer and milder side effects and clinical complications for patients. It also enhances the physician’s ability to treat tumors close to critical organs and the spinal cord.

Because it is less harmful to normal tissue, proton beam therapy is used to treat pediatric cancers as well as those in adults. As Rubenstein mentioned at the event, The Children’s Hospital of Philadelphia is a partner in the venture.

As the largest such facility in the world, the Roberts Proton Therapy Center will provide life-saving treatment to an estimated 3,000 patients a year. At the reception, Ralph Roberts noted that many people in his family have had lives cut short by disease, including cancer. For him,

it was not a difficult decision to provide support for the new center. “It’s an obvious life-saver for children and adults, something about which we were very sensitive.”

Ralph Roberts is former chairman of the board of Comcast Corporation, which he founded in 1963 with the purchase of a small cable television system in Mississippi. Today, it is the nation’s largest cable television company. A member of the board of PENN Medicine, Roberts has received awards from the National Cable & Telecommunications Association, the National Conference of Christians and Jews, and the Urban League of Philadelphia. He has an honorary degree from the University of Pennsylvania.

Brian Roberts started his career at Comcast selling cable door-to-door and rose to the presidency in 1990; he is now the company’s chairman and CEO. He is serving his second consecutive term as chairman of the board of directors for the National Cable & Telecommunications Association. Honored by *Institutional Investor* magazine as one of America’s top CEOs, Roberts received the Simon Wiesenthal Center’s Humanitarian Award in 2004.

Penn Receives Large Award to Support Translational Medicine

The National Institutes of Health (N.I.H.) recently launched a national consortium, funded through its Clinical and Translational Science Awards (C.T.S.A.) program, that aims to transform how translational biomedical research is conducted and ultimately to enable researchers to provide new treatments more efficiently and quickly to patients.

In October, the N.I.H. made a five-year award of \$68 million to the University of Pennsylvania School of Medicine, which will be a partner with The Children's Hospital of Philadelphia. Institutional commitments of \$30 million bring the Philadelphia consortium's total funding to nearly \$100 million. To apply for the C.T.S.A. award, the School of Medicine worked with Children's Hospital, the Wistar Institute, and the University of the Sciences of Philadelphia, along with eight other schools at Penn. The result is an interdisciplinary alliance to facilitate clinical and translational research.

"The Philadelphia collaboration will act as a vital catalyst for us to undertake a programmatic transformation heralded two years ago by the foundation of the

Institute for Translational Medicine and Therapeutics," said Garret FitzGerald, M.D., director of the Institute and principal investigator of the C.T.S.A. "Our major



educational investment will support the emergence of a new breed of investigators who will realize the fruits of basic research and deliver them to the community in the years to come."

In addition to educational goals, the goals of the Philadelphia translational medicine alliance are to develop better designs for clinical trials; to design new and improved clinical research informatics tools; to expand outreach to minority and medically underserved communities; and to forge new partnerships with private and public health-care organizations.

According to FitzGerald, who is chair

of the Department of Pharmacology, Penn's institute anticipated many aspects of this new initiative, among them the inclusion of the N.I.H.-funded General Clinical Research Centers at Penn and Children's Hospital; dedicated "dry" and "wet" bench space for translational research; and a robust educational program, based on an M.S. degree in translational research, all within the Institute.

An example of how the grant will streamline research is the plan to develop a sophisticated approach to improving the use of medications for pediatric patients. Computerized programs can combine data from laboratory studies, results, and findings from related drugs; using this data, highly sophisticated mathematical modeling, and simulation techniques, researchers will be able to predict the most effective dosages and delivery methods for particular drugs.

In addition to the Philadelphia collaboration, 11 other academic health centers throughout the nation are receiving these awards. An additional 52 institutions are receiving planning grants to help them prepare applications to join the consortium. "The development of this consortium represents the first systematic change in our approach to clinical research in 50 years," says N.I.H. Director Elias A. Zerhouni, M.D.

A NEW PARTNERSHIP FOR REHAB

As *Penn Medicine* neared press time, the University of Pennsylvania Health System and Good Shepherd Rehabilitation Network announced the creation of Good Shepherd Penn Partners, a joint venture and strategic alliance that creates one of the largest and most comprehensive continuums of post-acute medical care in eastern Pennsylvania.

Good Shepherd Penn Partners will provide specialized inpatient long-term acute care and medical and physical rehabilitation for patients transferred from medical, surgical, and intensive care units at the Health System's three hospitals. The joint

venture will also operate the UPHS outpatient centers, as well as rehabilitation therapy services for the three UPHS hospitals and three skilled nursing facilities. Good Shepherd will be the controlling interest in the joint venture through majority ownership and a majority board membership.

The new facilities created by the joint venture will be located in a six-story building at 1800 Lombard Street, on the current Graduate Hospital campus, which Penn's Health System is scheduled to purchase this spring.

Positive Outlook

In recent months, the University of Pennsylvania Health System has received good news about its bond ratings. Moody's Investors Service upgraded its rating from A2 to A1. At the same time, the other heavyweight in the industry, Standard & Poor's, recognized the Health System's excellent track record by placing a positive outlook on its A+ rating. According to a message from Ralph W. Muller, CEO of the Health System, and Andrew DeVoe, senior vice president and chief financial officer, this is the third straight year of "notable operating improvement."

“The rating upgrades by the financial analysts at Moody’s and Standard & Poor’s cite our prominent clinical reputation, which has continued to contribute to patient volume and market growth despite a particularly competitive marketplace. Also mentioned as factors of improved growth were an increase in inpatient admissions from the successful recruitment of physicians, partnerships with community hospitals, and, most importantly, continued growth in UPHS core clinical strengths.”

Honors & Awards

John S. J. Brooks, M.D., chair of pathology at Pennsylvania Hospital, was elected president of the American Society for Clinical Pathology. The nation’s largest medical laboratory organization with more than 140,000 members, the society represents the entire medical laboratory team – pathologists, medical technologists, and all other medical laboratory professionals.

Brooks, formerly on the faculty and attending staff of HUP, became chair of

pathology at Pennsylvania Hospital in 2004. His field of concentration is in soft tissue and bone pathology and the use of immunohistochemical markers for diagnosis and prognosis of disease.

Dell R. Burkey, M.D., clinical associate professor of anesthesiology and critical care, was elected president of the Philadelphia County Medical Society. The society, which unites with similar societies to form and maintain the Pennsylvania Medical Society, strives to elevate and maintain the standards of medical education; to uphold the ethics and dignity of the medical profession; and to protect the rights and interests of physicians.

Jo Buyske, M.D., associate professor of surgery and chief of surgery at Penn Presbyterian Medical Center, received the 2006 FOCUS Award for the Advancement of Women in Medicine. She was described as “a highly skilled and talented surgeon and as a dedicated administrator, educator, and mentor at Penn Med.” Director

of Minimally Invasive Surgery at Presbyterian, Buyske has an active practice in laparoscopic surgery for reflux and swallowing disorders. According to the FOCUS program, “Her resounding dedication to both professional and family responsibilities has significantly enhanced the environment at Penn for all faculty by demonstrating one highly successful model of how to navigate the often conflicting demands of work and personal commitments.”

Britton Chance, Ph.D., Sc.D., the Eldridge Reeves Johnson Emeritus University Professor of Biophysics, Physical Chemistry, and Radiologic Physics, received the 2006 Distinguished Achievement Medal of the American Aging Association. The medal recognizes “his outstanding and generous contributions to society through his investigations of the biomedical sciences.”

Helen C. Davies, Ph.D., professor of microbiology, received an Alpha Omega Alpha Robert J. Glaser Distinguished Teacher

A CHANGE IN ADMINISTRATION

Glen N. Gaulton, Ph.D., who has been serving as vice dean for research and research training in the School of Medicine, was appointed the school’s executive vice dean and chief scientific officer. In his new role, Gaulton, a professor of pathology and laboratory medicine, will lead the school’s research and research training enterprise and be responsible both for stimulating new research endeavors and providing the best intellectual and administrative support for continuing research programs. Gaulton has also been associate dean and director of Biomedical Graduate Studies and director of the Combined Degree and Physician Scholar program. According to Arthur H. Rubenstein, MB., B.Ch., executive vice president of the University of Pennsylvania for the

Health System and dean of the School of Medicine, “In each of these positions, Glen strengthened and distinguished our



Daniel Burke

School enormously, balancing vision with practicality in advancing the research mission and supporting the needs of faculty and trainees alike.”

While noting that he and Gaulton would continue to work together on Penn’s research vision, Rubenstein added that Gaulton “will take the lead on implementing key initiatives that advance our strategic research goals along with full responsibility for our daily research and research training operations.” Gaulton will work directly with department chairs and directors of institutes and centers to set and track expectations and performance for research. Rubenstein said that he intends to devote more time to philanthropy, to retention of faculty, and to the recruitment of new senior faculty.



Award from the Association of American Medical Colleges. She is known for putting lyrics about infectious diseases to the tunes of popular songs to help students learn and remember. In her hands, the Beatles' "Yesterday" becomes "Leprosy."

Judd E. Hollander, M.D., professor and clinical research director in the Department of Emergency Medicine, was elected president of the Society for Academic Emergency Medicine. Serving as the nation's largest academic emergency group, the society focuses on improving patient care and fostering emergency medicine's academic environment through research, education, and health policy.

John H. Holmes, Ph.D., assistant professor of medical informatics in the Department of Biostatistics and Epidemiology, was named a fellow of the American College of Medical Informatics. Holmes's contributions to the field have been in new interdisciplinary approaches to informatics, including applying evolutionary computation to epidemiologic data mining.

Marc S. Levine, M.D., G.M.E. '81, professor of radiology, received an Eminent Scientist of the Year 2006 award from the International Research Promotion Council in India. The award is based on his clinical expertise and research excellence in the field of gastrointestinal radiology. The council presents the World Scientists Forum awards annually by selecting recipients whose work has had a positive impact on medical care throughout the world, especially in developing countries.

THREE MORE ELECTED TO INSTITUTE OF MEDICINE

Three members of the medical faculty were elected to the Institute of Medicine: **Lance Becker, M.D.**, professor of emergency medicine; **Francisco González-Scarano, M.D., G.M.E. '81**, professor of neurology and microbiology and chair of the Department of Neurology; and **Mitchell A. Lazar, M.D., Ph.D.**, the Sylvan H. Eisman Professor of Medicine and director of the Institute for Diabetes, Obesity, and Metabolism.

A recent recruit to Penn, Becker is establishing a new interdisciplinary research

Levine, who has served as the chief of the gastrointestinal section at HUP since 1998, has written or co-edited several of the major texts in his field, including the 1st, 2nd, and 3rd editions of *Textbook of Gastrointestinal Radiology*.

Domenico Praticò, M.D., research associate professor of pharmacology, was named the Dorothy Dillon Eweson Lecturer for 2006. Sponsored by the American Federation for Aging Research, the award is giv-

program in resuscitation science to treat sudden death from cardiac arrest and trauma. González-Scarano's basic research and clinical practice focus on inflammatory conditions, including multiple sclerosis, encephalitis, and AIDS. He serves as co-director of the Center for AIDS Research. Lazar has pioneered studies on the role of fat-cell nuclear receptors in obesity and diabetes and discovered a hormone called resistin, which plays a critical role in glucose metabolism.

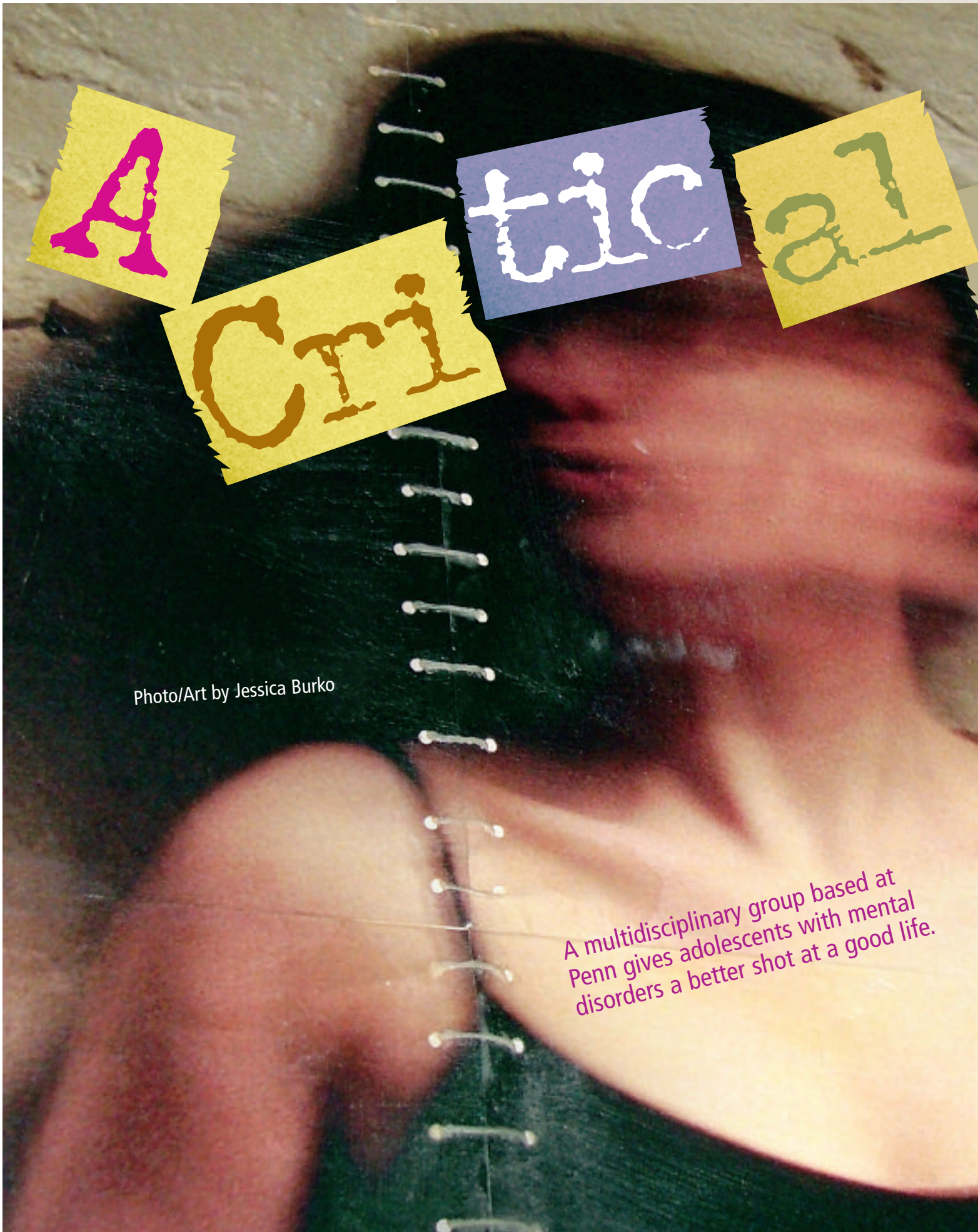
en each year to a scientist who has made a substantial contribution to the advances in aging research. Praticò was recognized for his lecture "Aging, Oxidative Stress, and Atherosclerosis."

Brian L. Strom, M.D., M.P.H., the George S. Pepper Professor of Public Health and Preventive Medicine and chair of the Department of Biostatistics and Epidemiology, received the Sustained Scientific Excellence Award from the International Society for Pharmaceutical Engineering. The society is the world's largest not-for-profit association dedicated to educating and advancing pharmaceutical manufacturing professionals and their industry. Strom serves as associate vice dean of the School of Medicine and associate vice president for strategic integration for the Health System.

Albert Stunkard, M.D., professor of psychiatry and founder and emeritus director of the Weight and Eating Disorders Program, received an honorary doctor of science degree from Louisiana State University. An integral member of Penn's School of Medicine and the Department of Psychiatry since joining the faculty in 1959, Stunkard has been a mentor for thousands of clinicians and researchers and is internationally recognized for his work in weight and eating disorders.

AAAS FELLOWS

Andrew I. Schafer, M.D. '73, the Frank Wister Thomas Professor and chair of the Department of Medicine, and **Martha J. Farah, Ph.D.**, professor of psychology in the School of Arts & Sciences, were elected fellows of the American Association for the Advancement of Science. Schafer, elected to the Section on Medical Sciences, was recognized for "distinguished original research contributions to the field of hemostasis, thrombosis, platelet and vascular cell biology, and for leadership in academic medicine." Farah, who has secondary appointments in psychiatry and neurology, serves as director of Penn's Center for Cognitive Neuroscience. She was elected to the Section on Psychology, recognized for "her many contributions to our understanding of the functioning of the human mind and its neural substrate."



Photo/Art by Jessica Burko

A multidisciplinary group based at Penn gives adolescents with mental disorders a better shot at a good life.

By Martha Ledger



At 33, Patrick Jamieson, Ph.D., is living a successful life. He's married to a woman he feels lucky to have met, and in 2004 he became a father. With a doctorate from the University of Pennsylvania's Graduate School of Education, he serves as associate director of the Adolescent Risk Communication Institute at Penn's Annenberg Public Policy Center (APPC). On paper, he looks a lot like his academic peers, but, in fact, he has faced a formidable obstacle to arrive where he is today. Since the dawn of his adolescence, Jamieson has battled bipolar disorder — what used to be called manic depression.

Jamieson describes what an episode was like: “My thoughts were very fast. My energy was brimming. I couldn't sleep. I would get this sense of confidence that I didn't normally have. People would start to be attracted to me, because suddenly I had all this energy and charisma. I'd wind up taking risks that a person wouldn't ordinarily take, and I'd get into confrontations. And just when I had created a problem for myself, I'd crash and be low on energy and depressed. Then I'd be left to pick up the pieces of a relationship I'd damaged with a girlfriend or friend or parent when I was in the worst possible position to heal things.”

Jamieson's academic work and personal history combine to give him a special expertise he is putting to direct use. For the last few years, he has been one among nearly 150 experts taking part in a project administered by the Annenberg Public Policy Center. Its focus: mental disorders that occur in adolescence.

Mental illness among teenagers is a major U.S. public health problem. One-half of all lifetime cases occur by age 14 and fully three-quarters by age 24. It's estimated that at least 1 in 5 youths has a current developmental, emotional, or behavioral problem, yet only 1 in 5 with such problems actually receives treatment. Considerably less research has been done on adolescents with disorders than on adults; and while much is known about adults, it's uncertain that these findings are fully transferable. Cardiovascular disease, diabetes, or hypertension may cut short already productive lives in middle age, but mental illnesses can block adolescents from ever starting on a meaningful life path.

In 2003, the Adolescent Mental Health Initiative of the Annenberg Foundation Trust at Sunnylands and the APPC joined forces to give teens a better shot at a good life. The centerpiece of their project was *Treating and Preventing Adolescent Mental Health Disorders* (Oxford University Press, 2005), a comprehensive text for mental health providers and researchers that involved the participation of national and international specialists in psychiatry, psychology, neuroscience, epidemiology, health-care delivery systems, public policy, and communication. Organized into seven scholarly commissions, the experts meticulously evaluated all the existing literature on teenage mental disorders.

The text contains major sections on depression/bipolar, anxiety, eating, and substance-use disorders, as well as schizophrenia and suicide. Another section presents the emerging field of positive youth development, which focuses on preventing disorders in at-risk teens and launching all adolescents on a fulfilling course. The 818-page volume was named the best book in clinical medicine published in 2005 by the Association of American Publishers.

Following this massive volume for specialists came four slender books for parents (also from Oxford University Press). While Jamieson served as editor of the series, each book for parents was written by a specialist with an experienced sci-

ence writer. The books deliver a vast amount of information in a non-condescending tone. They also incorporate parents' descriptions of how the illnesses play out in real life. For example: "I've been in Wal-Mart when my daughter went off and lost it. The entire store kind of came to a halt as they watched this screaming kid." From another book: "My son was hit by a car once, just wandering in the road at night. It was a young girl that hit him, and I guess it scared the heck out of her. But he was fine, and he thought it was the coolest thing ever." From the book on schizophrenia: "Words cannot describe what it's like. [These kids] die but they never get buried. Then they come back for a while, but you lose them again. And you think, 'I can't go through this again.'" With their first-hand knowledge of what ultimately helped their children and what didn't, parents can be experts, too.

Still another series of books is in progress. Directed to teens with mental illnesses, each will be written (or co-written with a science writer) by an expert who had the illness during adolescence and was successfully treated. The first volume, published in July 2006, is called *Mind Race* and deals with bipolar disorder. Written by Jamieson, it both tells his story and offers self-help tips to teens.

Jamieson's story begins with a long-delayed diagnosis. At first, he was thought to have a behavior problem at school and punished with frequent detentions. When he was around 13 and totally lacked energy, he was thought to be suffering from a virus. It wasn't until he was 15 and had moved to Philadelphia that a school principal suggested he get a psychological evaluation.

His doctor at Penn was a specialist in adolescent medicine and recognized his constellation of symptoms — sleepless-

ness, rapid-fire speech, scattered attention — as a disorder. She referred him to a child psychiatrist, who, Jamieson remembers, "had me diagnosed pretty quickly."

A diagnosis, however, wasn't the end of his difficulties. Instead of a single, wholly effective medication, he faced a choice among several potentially useful medications, all with side effects. He took them in a trial-and-error manner and tried to ease his discomfort by drinking — experts have found that very many teens with disorders self-medicate with alcohol or drugs — but alcohol only reduced the efficacy of his medications. "I think when you drink a lot," Jamieson says, "it flushes the medications out of your system. It also messes up your sleep." In the 10 years after being diagnosed and treated, Jamieson was hospitalized six times.

Doctors eventually found medications that worked well for him. At 22, he stopped drinking entirely, which he thinks had a lot to do with his getting better. So did being treated, taking medications, regularizing his sleep cycle, and learning to manage stress.

The story of Jamieson's illness might have remained just that — his story — had it not been for his mother, Kathleen Hall Jamieson, Ph.D., professor of communication and, at the time, dean of Penn's Annenberg School for Communication. She is currently the director of both the APPC and the Annenberg Foundation Trust at Sunnylands.

In late 2002, Jamieson proposed to the Trust that it marshal experts in adolescent mental illnesses in order to collect the best possible information on the subject.

"Ultimately, it's all about communication, getting people to learn and understand," she says. The comprehensive text brings practitioners up to date and sug-

gests a wide range of areas requiring further study. The series for parents and the series for teens explain the illnesses, treatment options, help available through schools and social services, and how to be an activist for adolescent mental health. Through such an ambitious communication effort, Jamieson hoped to increase the likelihood that teens would receive better diagnoses and treatments.

She knew, however, that the information gathered could depend on which disciplines were represented at the table. "Psychology and psychiatry traditionally don't have much to do with one another," she says. "Their assumptions are different, one being more biased toward talk therapy, the other more toward medication. To be comprehensive, I had to bring everything to bear on the issue."

To brainstorm and then initiate the project, she enlisted two prominent experts at Penn: Dwight L. Evans, M.D., the Ruth Meltzer Professor and Chair of the Department of Psychiatry, and professor of psychiatry, medicine, and neuroscience; and Martin E. P. Seligman, Ph.D., professor of psychology, director of the Positive Psychology Network, and scientific director of a Mayerson Foundation project that seeks to classify character strengths and virtues.





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WHY FOCUS ON ADOLESCENCE?

Adolescence, which we define here broadly as ages 10 to 22, is a unique and distinct period in the development of human beings. Adolescence is a critical period of development characterized by significant changes in brain development, endocrinology, emotions, cognition, behavior, and interpersonal relationships. This period of life is a transitional period of development that is foundational but also noticeably malleable and plastic from a neurobiological, behavioral, and psychosocial perspective.

From a mental health perspective, adolescence is important because most of the major mental disorders begin not in childhood but during adolescence. After onset in adolescence, many chronic mental disorders carry over into adulthood, leading to ongoing significant mental health impairment during the adult years. . . .

The past two decades of research have revealed that many mental disorders are

relatively common in adolescence. . . .

What is especially alarming is that the prevalence of some of these disorders has been on the rise over each successive generation. Certain changes over time in the nature of adolescence, and the environments that adolescents find themselves in, may be responsible for these observed increases in the prevalence of psychopathology in adolescence. . . .

There are many unanswered questions about the ways in which the interplay between biology and environment lead to the alarming numbers of adolescents we now see afflicted with mental illness and why this seems to have worsened in recent years. However, what is clear is the need to make adolescent mental health a major public health priority.

— Dwight L. Evans & Martin E. P. Seligman, Introduction to *Treating and Preventing Adolescent Mental Health Disorders* (Oxford University Press, 2005)

“Each was used to multidisciplinary approaches in his own work,” Jamieson says. That trait, she adds, is true of Penn in general, “which doesn’t have the antagonism between different approaches that is often seen elsewhere.” Jamieson left it to Evans and Seligman to select the other chairs, and each resulting commission was composed of psychiatrists, psychologists, and a host of other specialists.

The seamless presence of both fields impressed Dennis A. Ausiello, M.D. ’71, a member of the Association of American Publishers committee that chose the specialist text for its prestigious award. Ausiello, the Jackson Professor of Clinical Medicine at Harvard Medical School and physician-in-chief at Massachusetts General Hospital, explains: “In other books, there might be a chapter by a psychiatrist and another chapter by a psychologist. In contrast, this book explores their ideas in common chapters. It comes together as an expert story, where a number of points of view have been coalesced, prioritized, and, presumably, there was some consensus on them.”

Relatively little disagreement arose within the commissions. The chairs agreed at the start that all statements included in the text had to be based on evidence.

“There was very healthy discussion on what do we mean by the concept of anxiety,” says Edna B. Foa, Ph.D., chair of the commission on anxiety disorders. “Is it physiological? Is it what the person thinks? Is it emotion?” But, says Foa, director of Penn’s Center for the Treatment and Study of Anxiety, “there were no arguments about the state of the science.”

Specifying what they don’t know was an important part of the commissions’ charge. The text is subtitled *What We Know and What We Don’t Know*. Ausiello believes

that it is extraordinarily unusual for a medical text to acknowledge that significant questions remain unanswered. “What this book did was really review the data and assess the quality of information and then ask thoughtful questions about priorities [for studying] what is not known.”

In the realm of what is known, the data clearly indicate that biological and chemical irregularities are associated with all of the various mental disorders. A number of studies suggest that adolescents with depression, for example, tend to have significantly smaller-than-average frontal lobes and less white matter in those lobes. In addition, they may have lower-than-normal levels of endorphins and less of the neurotransmitters serotonin, dopamine, and gamma-aminobutyric acid. Their hypothalamus may produce an excess of corticotropin-releasing factor, and their blood, urine, and spinal fluid may contain elevated levels of cortisol. Few studies have been done in bipolar disorder, but in adults some studies have found abnormal areas in the brain’s white matter, a decreased number of nerve cells in part of the hippocampus, and a decreased number of support cells in the pre-frontal cortex.

According to Evans, who chaired the commission on depression/bipolar disorder, much more research is needed, but the presence of these abnormalities will be news even to some practitioners. “It’s still not generally embraced everywhere,” he says, “because many people were trained in an era when we didn’t understand depression, for example, that way. Growing evidence now suggests that depression is bad for the brain and bad for the body.”

Whether these biological and chemical glitches are causes or effects of mental disease is still unknown. Nor are they aligned with specific treatments.

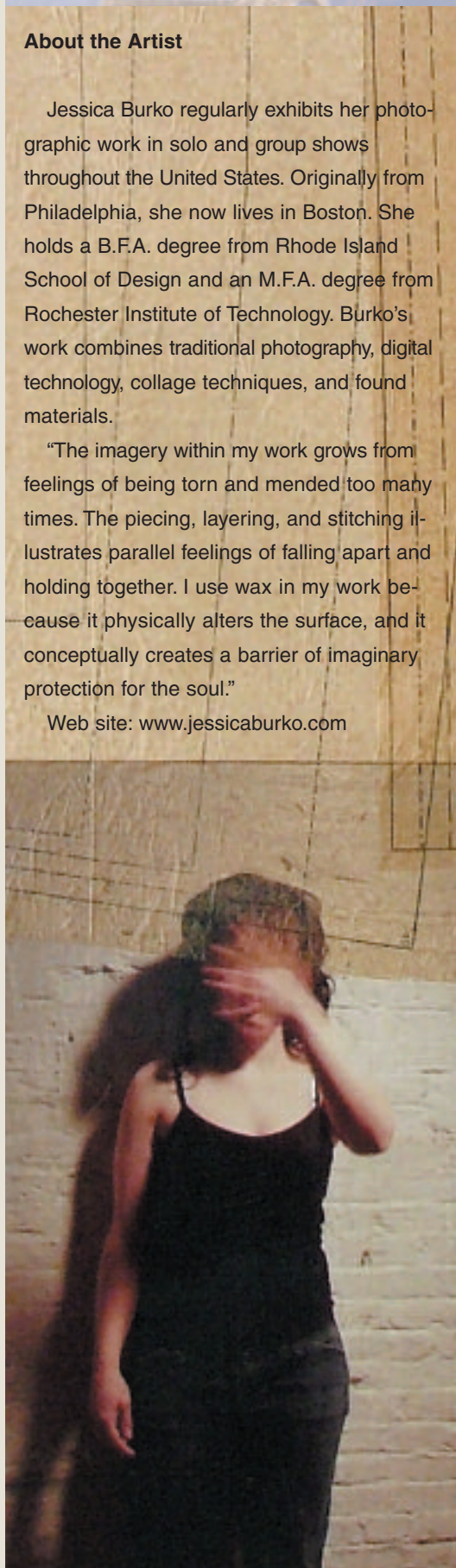
At present, diagnoses are based primarily

About the Artist

Jessica Burko regularly exhibits her photographic work in solo and group shows throughout the United States. Originally from Philadelphia, she now lives in Boston. She holds a B.F.A. degree from Rhode Island School of Design and an M.F.A. degree from Rochester Institute of Technology. Burko’s work combines traditional photography, digital technology, collage techniques, and found materials.

“The imagery within my work grows from feelings of being torn and mended too many times. The piecing, layering, and stitching illustrates parallel feelings of falling apart and holding together. I use wax in my work because it physically alters the surface, and it conceptually creates a barrier of imaginary protection for the soul.”

Web site: www.jessicaburko.com



on clinical signs and symptoms that are codified in the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition*. Researchers are trying to develop more objective determinants. Says Evans, “Even though we can point to reproducible, biological alterations in these different conditions, we have no clinically useful biological tests for them.” And that makes the field of mental illness unlike many other areas of medicine. As Evans goes on to explain, “If a patient has anemia, for example, you can identify if it’s a B12, folate, or iron-deficiency anemia and then give a treatment that supplies what is missing. But we don’t have that kind of specificity associated with these neurobiological findings.

“Ultimately, we’ll be able to subtype these various disorders into biological entities that will indicate specific treatments and identify people that are more likely than not to respond to them. But we’re not by any means there yet.”

While the research proceeds, the text points to scores of studies showing that many adolescents with mental illnesses are being successfully diagnosed and treated. Teens with anxiety or mood disorders improve more than 70 percent of the time. For those who don’t respond to more conservative treatments, alternative techniques — like electroconvulsive therapy and vagus nerve stimulation — are used. Therapy for eating disorders can also lead to recovery. And early intervention in schizophrenia can reduce the severity of the disease.

Psychotherapy — which has been shown to change the brain — works. Medication also works. In some studies, the combination of cognitive-behavioral therapy and medication was shown to produce better results than either treatment independently. “As in the rest of medicine,” says Evans, “there’s inquiry into what works best in combination with

something else. In many disorders, people are treated with one medication, and then they may be treated with a second in combination.”

As treatments are perceived as more and more effective, it is also becoming clear that not receiving treatment can be disastrous. A recent study supported by the National Institute of Mental Health showed that untreated episodes led to increasingly severe attacks. It found that symptomatic people typically remained undiagnosed and untreated for long periods of time, sometimes decades. By the time they sought help — as 80 percent did — their symptoms had intensified and co-occurring disorders had developed.

If treatment works and a lack of treatment is potentially so dangerous, why are so many teens not being treated? The text covers a host of factors, of which access and attitude are among the most significant.

Access. Many families just can’t afford treatment. Twelve percent of children younger than 18, and 30 percent of those between 18 and 24, have no insurance at all. The number of publicly insured children is increasing, but 75 percent of those with a diagnosed mental disorder are without coverage. The largest federal government-financed program for emotionally disturbed youth, the Comprehensive Community Mental Health Services for Children and Families, provides nearly \$100 million a year at the local level, but it reaches relatively few communities and is therefore unavailable to the majority of families who need assistance.

Those with medical coverage often face an unrealistic maximum limit on the number of office visits and lifetime dollar ceilings — treatment deterrents that don’t exist for other chronic illnesses. Although 36 states have passed some form of parity

legislation to equalize treatment of mental disorders and other diseases, no federal parity law exists, and the Medicaid program itself contains provisions that discriminate against the mentally ill.

Even if they can afford it, teens might not receive appropriate care because trained specialists are in short supply. Only around 7,000 child psychiatrists are currently practicing in the United States. Child psychologists are also few in number and unevenly distributed. According to a tally done last year, the Philadelphia region has 100 practitioners, while Wyoming has only two.

Nor do primary-care doctors always spot a teen’s need for specialized treatment. A 2004 APPC study found room for improvement in doctors’ ability to identify adolescent mental disorders. On average, the doctors characterized themselves as “somewhat, but not very confident” in their diagnostic skills.

Attitude. Negative feelings about psychiatry and psychology discourage people from seeking care. According to Patrick Jamieson, “there is information out there that is very hostile to both talk therapy and medication. And there may be the most resistance to prescribing pills.”

The fear of being stigmatized is also a factor. While the stigma associated with certain behavioral disorders is reportedly lessening, “it’s stronger today than ever before in the case of schizophrenia,” according to Raquel Gur, M.D. ’80, Ph.D., G.M.E. ’84, professor of psychiatry, neurology, and radiology at Penn and director of the neuropsychiatry section in psychiatry. She headed the commission on adolescent schizophrenia for the specialist book and was co-author of the book in the series for parents.

Fear of discrimination not only discourages treatment, says Patrick Jamieson,

who also contributed to the chapter on stigma in the specialists' text, but it persists even when treatment has been successful. In *Mind Race*, he advises teens not to bring up their illness in a job interview. "You're legally protected," he says, "so you don't have to tell." He takes for granted that an employer will prefer someone who is not mentally ill and therefore presumably easier to work with. Once you get the job, and if you have a good relationship with your boss, he thinks you should be open about your illness because you may have to take sick time.

Jamieson's most important advice to teens is to "think of your situation as a challenge, not as a curse. If you're young, and what happened to me happens to you, it's very easy to think, 'this illness is too much for me to deal with.' The truth is, every young person has the opportunity to control the way they think about things. Thinking about illness as a challenge can empower a teen: 'I'm going to deal with this. I'm going to make it hap-

pen. I'm going to get treated. I'm going to read these books, get on this web site.'

"These disorders are very treatable," asserts Jamieson. "And I don't think most people know that."

But they will know, if the project continues on course. Thirty-two thousand copies of each of the parent-series books are already being distributed free through child and adolescent psychiatrists and pediatricians, as well as school-based psychologists, social workers, and counselors. The books are available in stores at \$9.95. The Annenberg Public Policy Center is also studying the feasibility of a marketing campaign for the series.

In addition, two web sites related to the project are disseminating information. The Annenberg Trust and the APPC launched MindZone (www.CopeCareDeal.org) specifically for teens, where they can get straightforward facts in a voice like their own. On the companion site for the experts ([health\), Patrick Jamieson posts new research to keep the specialist text up to date. According to Kathleen Hall Jamieson, the Annenberg Trust has expressed its intention to publish a revised hardback edition in 2010.](http://www.oup.com/us/teenmental-</p></div><div data-bbox=)

Dwight Evans believes that the information being communicated through all these channels will produce results: more funding, more research, improvement in the system that delivers mental health care, a change in public attitudes, and greater numbers of adolescents who receive treatment. Every day, he finds reason for optimism. For him, Patrick Jamieson is just one of many individuals to overcome challenging obstacles and establish a productive, fulfilling life. "Right there," Evans says, gesturing toward campus from his Blockley Hall office, "are a significant number of very talented people who without treatment would never have made it here at all.

"That," he says, "already represents an incredible triumph." ■



A SERIES FOR PARENTS

While *Treating and Preventing Adolescent Mental Health Disorders* may be just what the specialists want, the Adolescent Mental Health Initiative was eager to convey much of the same information to a different group of people: parents of adolescents with mental disorders. Four of the experts who led the commissions brought together by the Initiative then teamed with writers to produce shorter books with less of the professional trappings. Evans, Foa, and Gur are members of Penn's medical faculty; Walsh is chair of psychiatry at Columbia University College of Physicians and Surgeons. All the books are published by Oxford University Press.

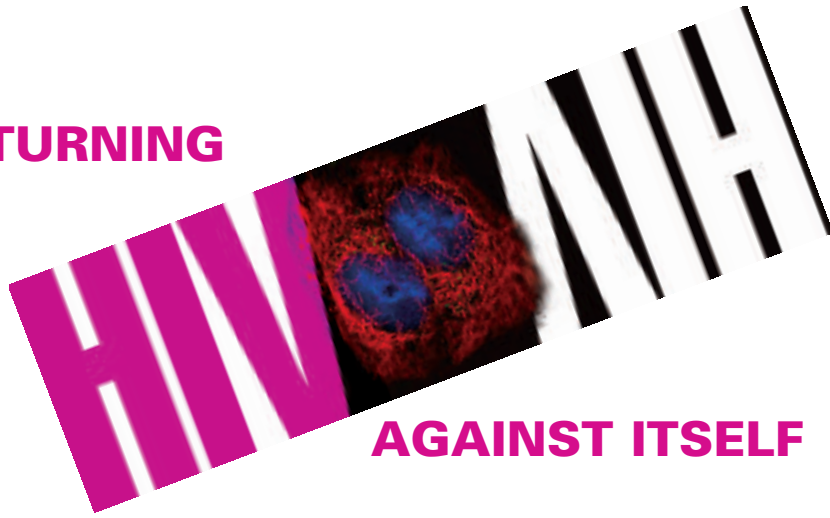
If Your Adolescent Has Depression or Bipolar Disorder: An Essential Resource for Parents by Dwight L. Evans, M.D., and Linda Wasmer Andrews

If Your Adolescent Has an Anxiety Disorder: An Essential Resource for Parents by Edna B. Foa, Ph.D., and Linda Wasmer Andrews

If Your Adolescent Has Schizophrenia: An Essential Resource for Parents by Raquel E. Gur, M.D., and Ann Braden Johnson, Ph.D.

If Your Adolescent Has an Eating Disorder: An Essential Resource for Parents by B. Timothy Walsh, M.D., and V. L. Cameron

TURNING



AGAINST ITSELF

A NEW GENE-THERAPY VECTOR SHOWS PROMISE IN PENN HIV STUDY.

By Karen Kreeger

The subjects: five patients with chronic HIV infection, for whom the standard treatment of antiretroviral drugs was not working.

The clinical test: using a disabled HIV virus to deliver genetic material that blocks HIV reproduction.

The results so far: very promising.

The Penn research team that conducted this innovative gene-therapy study was led by Carl H. June, M.D., professor of pathology and laboratory medicine and director of translational research at the Abramson Family Cancer Research Institute; Bruce L. Levine, Ph.D., associate professor of pathology and laboratory medicine and director of the Institute's Clinical Cell and Vaccine Production Facility; and Rob Roy MacGregor, M.D., an emeritus professor of medicine whose specialty is infectious diseases. They reported their findings in the online edition of the *Proceedings of the National Academy of Sciences* (November 7, 2006).

Each patient was given a single infusion of his own immune cells that had been genetically modified for HIV resistance. During the study, viral loads of the patients remained stable or decreased, and one subject showed a sustained decrease in viral load. Four of the patients showed steady or increased T cell counts during the nine-month trial. In addition, immune function specific to HIV improved in four patients.

"The goal of this phase I trial was safety and feasibility, and the results established that," said June. "But the results also hint at something much more."

The study and the safety profile so far of the new vector, called VRX496, have now opened up the field of lentiviral vectors. These vectors infect T cells more effectively than adenoviruses, which have commonly been used as viral vectors. Lentiviruses also infect non-dividing or slowly dividing cells, which improves delivery to cells such as neurons or stem cells, thus enabling the evaluation of gene therapy in an even wider array of diseases than before. Furthermore, lentiviral vectors insert into cellular DNA differently from other retroviruses that have caused side effects in other trials involving stem-cell therapy, and that means they may be safer than other gene-therapy vectors.

A Trojan Horse

"The new lentiviral vector is a lab-modified HIV that has been disabled to allow it to function as a Trojan horse, carrying a gene that prevents new infectious HIV from being produced," explained Levine. "Essentially, the vector puts a wrench in the HIV replication process."

The new approach enables patients' own T cells, which are targets for HIV, to inhibit HIV replication – via the HIV vector and its anti-viral cargo. The HIV vector delivers an antisense RNA molecule to the T cells. Then the modified T cells are given back to the patient with the antisense gene permanently integrated into the cellular DNA. When the virus starts to replicate inside the host cell, the antisense gene keeps it from making essential building blocks for progeny virus.

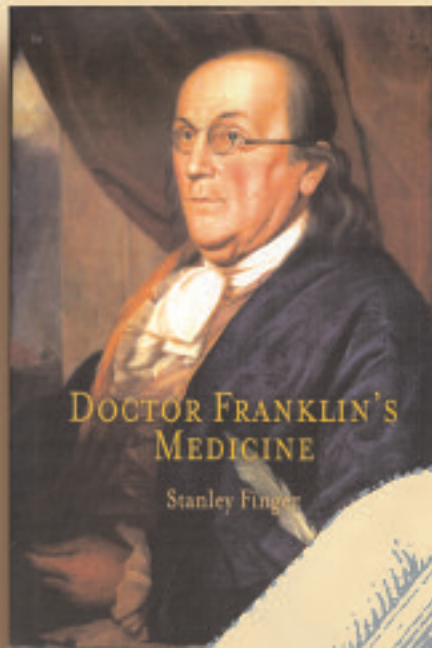
"We were able to detect the gene-modified cells for months, and in one or two patients, a year or more later," said Levine. "That's significant," he explained, because it showed that the gene-modified cells do not just die inside the patient. "The really interesting part of the study came when we saw a significant decrease in viral load in two patients – and, in one patient, a very dramatic decrease."

Still, Levine was cautious. "Just because this has produced encouraging results in one or two patients doesn't mean it will work for everyone. We have much more work to do." In the original study, each patient will be followed for 15 years.

Penn researchers are also now recruiting for a second trial using the VRX496 vector with HIV patients whose virus is well controlled by existing antiretroviral drugs. The trial is designed to evaluate the safety of multiple infusions and to test the effect of infusions on the patients' ability to control HIV after they have stopped receiving antiretroviral drugs. The researchers hope that this treatment may ultimately allow patients to stay off antiretroviral drugs for an extensive period. The drugs are known to have significant toxicity, especially after long-term use.

The research was supported by the National Institute of Allergy and Infectious Disease; the Abramson Family Cancer Research Institute; and VIRxSYS Corporation of Gaithersburg, Md., which designed and produced VRX496. ■

In a book published the year the world celebrated Benjamin Franklin's 300th birthday, a professor of psychology and medical historian provides a fuller look at Franklin's many accomplishments in medicine and health. At times he was a proto-epidemiologist; he frequently was an exemplar of the benefits of exercise through swimming; he dabbled in the medical uses of electrical shocks. But he also played a highly visible role in the founding of Pennsylvania Hospital and a more subtle role in the creation of the first medical school in the colonies.



Excerpted from *Doctor Franklin's Medicine* by Stanley Finger (2006)
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By Stanley Finger, Ph.D.

Dr. Franklin



W

hat distinguished Franklin from the myriad other colonials who practiced or dabbled in medicine was that he approached clinical medicine with the mindset of an experimental natural philosopher. He skillfully designed experiments, collected data, kept careful records, and compiled tables to determine trends and outcomes. He also read voraciously, contacted authorities to solicit their opinions, and searched for historical antecedents. Franklin ran his printing business for 18 years, and he conducted his famous “Philadelphia” electrical experiments, which included “capturing lightning” with a kite, for only six years. But he maintained his scientific approach to medicine from early on until his dying day.

Like most of his countrymen, Franklin was more interested in whether something worked than why, and he applied his pragmatism to his medicine. Throughout his medical life he avoided the metaphysics of the ancients and tended to shun the unanchored speculations of the academics that were circulating in his own time. He instead favored hard evidence based on repeated observations and experiments.

Franklin the Epidemiologist

Francis Folger Franklin passed away in 1736, when he was four years old, and his death broke the hearts of his parents. Franky was a victim of smallpox, a disease with a predilection for young children and one all too common during the colonial period.

Franky died from smallpox while Franklin was compiling statistics show-

ing that inoculation was effective. In 1742, six years after this tragic event in his life, Debby gave birth to a healthy daughter. Four years later, Sarah, better known as Sally, was successfully inoculated, to the relief of her parents.

William Vassall, who had just moved to Boston from Philadelphia, was one of the people who asked Franklin for some of his statistics the year Sally was inoculated. “By the best Informations I have been able to procure, and which I believe are pretty near the Truth,” Franklin responded, “between 150 and 160 Persons (mostly Children, the Small Pox having gone thro’ this place twice within these 15 years) have been inoculated since the 10th of April last, when the Distemper began to spread here; of which Number one only died. . . . Of the Rest who recovered or are on the Recovery, none have had so much as one dangerous Symptom.”

Franklin informed Vassall that the one child who died did not succumb from the inoculation.

Soon after settling in London, Franklin met William Heberden, a distinguished member of the Royal College of Physicians. The two men discussed smallpox inoculations among the masses, both in England and America. England had gone through its most extensive and deadly outbreak of smallpox in 1752, and it followed the previous epidemic by just six years. The odds of still another deadly “visitation” were already high and increasing daily.

Franklin wanted to be proactive, espe-

his Medicine

cially with the poor, and he pushed Heberden to write a brief pamphlet. The result, *Some Account of the Success of Inoculation for the Small-Pox in England and America Together with Plain Instructions, by Which Any Person May Be Enabled to Perform the Operation and Conduct the Patient through the Distemper*, was published in 1759. In his four-page introduction to this 12-page pamphlet, Franklin had a few facts wrong, such as the date of one epidemic. But these errors did not detract from what Heberden and he had set out to accomplish.

Franklin began by describing how most Bostonians opposed inoculation until statistics repeatedly showed it could save lives. To drive the point home, he provided a table of statistics from North America. Of those Americans who were not inoculated and came down with the disease, more than 10 percent died. In contrast, only 1 percent of those that had been inoculated died from smallpox. He also presented statistics gathered from the London Smallpox and Inoculation Hospital, the charitable institution that was founded in 1746 to treat and prevent the disease. There were six deaths among the 1,601 persons inoculated at the hospital, but 1,002 deaths among the 3,856 smallpox patients not inoculated. “By this account it appears, that in the way of Inoculation there has died but one patient in 267, whereas in the common way there has died more than one in four,” explained Franklin. The message in simple words that everybody could understand was unmistakable.

True to the ideals of the Enlightenment, the two contributors then absorbed the expenses involved with the pamphlet’s publication. Franklin personally sent 1,500 copies to David Hall, who was running his printing operations in Philadelphia, with instructions to distribute it free to the needy. He also sent copies to Jonathan Williams Sr., for dis-



Pennsylvania Hospital in the 18th century.

tribution in Boston, and to relatives, friends, and acquaintances elsewhere, in the hope that they would share it with others.

Franklin Helps Found Pennsylvania Hospital

Benjamin Franklin did not come up with the idea for the new hospital. That honor belongs to Philadelphia physician Thomas Bond. At the time, a major movement was under way in Europe to build hospitals for the sick-poor. Philanthropic citizens in England and Scotland were deeply involved in the movement, and they provided shining examples of what could be done for suffering humanity. Franklin, like Bond, was aware of what was happening abroad. To his credit, he recognized the importance of Bond’s floundering proposal and played the leading role in securing funding for the charitable project, thereby making it a reality.

Pennsylvania Hospital, founded on January 23, 1751, is usually regarded as the first permanent, public hospital established for the care of needy sick civilians in the English colonies. Prior to this date, almshouses and workhouses took in sick paupers, but their primary concerns

were to provide shelter and sustenance, not medical care, for men and women who could not take care of themselves.

In addition, there were pest houses and lazarettos, which were located away from the cities on such places as Spectacle Island (Boston), Bedloe’s Island (New York), and Fisher’s Island (Philadelphia). These structures for the “distempered,” however, were erected only to isolate infected individuals from the larger, vulnerable community that demanded protection. They were not set up to heal.

In retrospect, it was a facility in Scotland, more than any other British voluntary hospital, that Thomas Bond, Franklin, and other enlightened Philadelphians looked up to and hoped to emulate on American soil. Founded in 1729, the Edinburgh Infirmary treated worthy charity patients with physical or mental illnesses and reduced the welfare rolls by allowing many of these people to become productive again. It was also a leading institution for practical training and bedside medical education. Unlike the voluntary hospitals in London, it served a city comparable in size to Philadelphia.

With his background, clinical practice,

and philanthropy, Thomas Bond was ideally positioned to recognize the need for a public hospital in Philadelphia – one that would do more than the small Philadelphia Almshouse that was established two decades earlier. But when the idea for a charity hospital entered his mind in 1750, he lacked the skills to attract needed financial backers.

It was under these circumstances that Bond approached Franklin for help with his proposed project, which, he admitted, was “not well understood.”

Franklin’s means for “procuring subscriptions” were so ingenious that they still elicit smiles from professional

fundraisers. He effectively used his *Pennsylvania Gazette* to convince the citizens how much the poor really needed a hospital and how important it was for the people in the region to be recognized as good Samaritans. In his words: “I endeavoured to prepare the minds of the people by writing on the subject in newspapers, which was my usual custom in such cases, but which he [Bond] had omitted.” Second, he drafted a petition to the Pennsylvania Assembly that 33 upstanding citizens signed. Third, he wrote and distributed a pamphlet to present the hospital plan in more detail to interested backers, whose financial support was critical. Finally, he called for matching funds from the government, a fundraising tool that did not appear to have been used before, at least not in America.

For Franklin, matching funds meant going to the Pennsylvania Assembly and convincing its representatives to promise £2,000 for the project, contingent on an equal amount being raised from the citizenry. Thinking such an enormous sum would never be raised, the rural members of the Assembly, who were not particularly enthusiastic about the project, voted for the proposal, many wanting just to look charitable. The representatives from Philadelphia, in contrast, were more strongly in favor of the project, knowing it would be located in their city, where it was most needed.

As it turned out, the doubting Thomases from rural Pennsylvania grossly underestimated how positively the citizens in and around Philadelphia would respond to the project. Following the lead of some significant donors, men and women from all social classes opened their purses and gave what they could. Contributors believed they were giving twice as much, “since every man’s donation would be doubled,” as Franklin put it. In brief, once Franklin threw his full support and creative fundraising meth-

ods into the Pennsylvania Hospital project, what had once been just a kindly physician’s lofty dream became brick-and-mortar reality.

Franklin did everything he could to make sure the hospital had sufficient revenues for day-to-day services. Never at a loss for ideas, he promoted the use of charity boxes, like those found at places of worship. A coin box was put at the entry to the hospital, and each of the 12 hospital managers was handed his own tin with “Charity for the Hospital” printed in gold letters on it. Although the individual contributions varied in size, they were considerable when combined, much like the funds pooled to buy books for Franklin’s Library Company.

Three established physicians volunteered to help at the new hospital. Two, as might be expected, were the Bond brothers, and the third was Lloyd Zachary. None accepted fees and all even purchased drugs with their own funds, until “the charitable Widows, and other good Women of Philadelphia” stepped forth to help with the costs of medicines. The widows also donated linens, surgical dressings, and other items, setting an example for other citizens to follow.

The Art of Recommendation

Franklin first set foot in Edinburgh on September 6, 1759. Sir George Drummond, Lord Provost and the father of modern Edinburgh, warmly welcomed him. Knowing Franklin’s interest in medicine, and eager to show off some of the crown jewels of the city, Sir Alexander Dick and Drummond took Franklin to see the medical school. They also showed him the hundred-bed infirmary that had served as a model for Franklin’s Pennsylvania Hospital. At the time of Franklin’s visit, it had a special ward with about 30 beds for clinical instruction.

Franklin was not in the least bashful about asking several members of Edin-



18th-century Europeans and Americans typically were inoculated on the hand, as shown here.

burgh's medical community to help with a good cause. He wanted deserving medical students from the colonies to get the best training possible, and the British North American colonies still did not have a medical school in 1759.

The records show that, within a year after visiting Scotland and making many friends there, Franklin began to recommend training in Edinburgh to Philadelphia's brightest medical students and to write personal letters of recommendation on their behalf.

Consider a letter dated September 17, 1760, to Sir Alexander Dick on behalf of William ("Billy") Shippen Jr. "Mr. Shippen," Franklin began, is "an ingenious worthy young Man, and the Son of my Friend. He goes to Edinburgh to improve himself in Physic and Surgery, and hopes to obtain there the Sanction of a Degree, if found to merit it. Your friendly Advice with regard to his Studies, and kind Influence and Interest in facilitating his Affair, will, I am persuaded, be a Favour conferr'd not improperly."

A second letter of recommendation on behalf of Shippen was sent the same day to William Cullen, the professor who oversaw bedside instruction at the Edinburgh Infirmary and managed the twenty-bed teaching ward.

A year later, Cullen received a letter from Franklin on behalf of John Morgan. Morgan, the son of Franklin's friend Evan Morgan, had been undecided about whether to go to Edinburgh or Leyden. Franklin persuaded Morgan to head to Scotland. His letter of recommendation reads: "Mr. Morgan, who purposes to reside some time in Edinburgh for the completion of his studies in Physic, is a young gentleman of Philadelphia whom I have long known and greatly esteem. And as I interest myself in what relates to him, I cannot but wish him the advantage of your conversation and instructions. I wish it also for the sake of my country,

where he is to reside, and where I am persuaded he will be not a little useful." As was the case for Shippen, Franklin sent more than one letter on the behalf of Morgan.

Franklin also sent a number of letters on behalf of Benjamin Rush, who would return to join the new medical school faculty and become the most influential American physician of the post-Revolutionary War era.

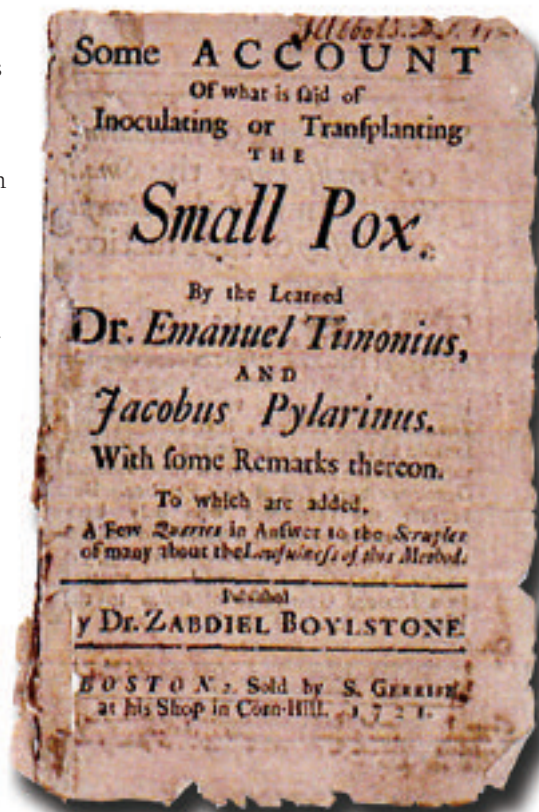
Franklin actually advised colonial medical students to do three things while abroad. One was to go to Edinburgh to study principles, systems, theories, and philosophy of medicine – and to obtain their medical degrees there. Second, he encouraged them to get a broad education and especially to learn natural philosophy, in order to enhance perspective and develop a solid, scientific approach to medicine. And third, he advised them to spend ample time in London, where they could watch attending physicians treat patients in a large city hospital and receive training in pathological anatomy and surgery from the Hunters and from William Hewson, at their private school.

The significance of separate training in pathological or morbid anatomy in London lay in the fact that the voluntary hospitals, such as the Edinburgh Infirmary, depended on charitable donations. Fearing the bad publicity that would result from doing autopsies, the managers of these institutions passed regulations that made postmortems very difficult to perform. In addition, the voluntary hospitals were largely concerned with curable patients, not those with life-threatening diseases. In contrast, the private school of anatomy run by the Hunters was tuition driven, not pinned down by frightened, cash-strapped managers. In addition, they were located where unwanted corpses of executed felons could be obtained almost at will.

Founders of the School

When Shippen headed up to Edinburgh in 1760, he was knowledgeable about surgery, pathology, and midwifery. He also had letters of recommendation from Franklin and the idea of an American medical school firmly planted in his head. He received his medical degree with honors after just one year at Edinburgh, and he gave a presentation copy of his thesis to Franklin. It dealt with the separate blood supplies of the fetus and the mother. With the hopes of learning even more, Shippen then packed his bags and left to visit some of the major hospitals in France.

Upon returning to Philadelphia in 1762, Shippen opened a school of surgical anatomy modeled on the Hunters' school. In his introductory lecture, he presented his vision of how American physicians and surgeons should be trained in the future. He then turned to anatomy.



A typical period pamphlet of the kind Franklin issued.

John Morgan returned to Philadelphia in 1765, while Shippen was giving his fourth private course in anatomy and beginning a new one on midwifery. Morgan had stronger credentials than Shippen, even before leaving Philadelphia for Europe. He had completed a six-year medical apprenticeship with Dr. John Redman, served a year as resident apothecary of Pennsylvania Hospital, and was in the first graduating class of the College of Philadelphia, as the University of Pennsylvania was originally called. Additionally, he had served as a regimental surgeon and line officer in the French and Indian War.

Morgan sailed to Europe in 1760, carrying letters for Franklin and Shippen. With Franklin's help, Morgan was introduced to John Fothergill, who also graciously helped him plan his course of studies. Shippen had not yet left for Edinburgh when Morgan arrived in London. This overlap allowed Shippen, Morgan, Fothergill, and Franklin to exchange ideas about the future of American medical education. These four individuals were also able to get together during the summer of 1761, just after Shippen had completed his courses at Edinburgh and had come back to London.

Morgan worked out a detailed plan for the first American medical school before he even returned to Philadelphia. He felt it wise to follow the Edinburgh example of placing the medical school under the auspices of an institution of higher learning, in this case the College of Philadelphia, rather than using the London model of a hospital-based school without a university affiliation. He also wanted to base the new curriculum on Edinburgh's, which was, in his estimation, the best in Europe.

Morgan wasted little time after his return before approaching the Trustees of the College of Philadelphia with his elaborate plan. Those present responded favorably to most of what Morgan was proposing, and he was invited to present his proposals



Portrait bust of Benjamin Franklin, by Jean-Antoine Houdon, Philadelphia Museum of Art.

at the college's commencement in 1765.

Franklin was aware of what Morgan was proposing. He sent Morgan a letter in July that began, "It rejoices me to hear that you got well home, and that you are like[ly] to succeed in your Scheme of establishing a Medical School in Philadelphia." To Morgan's delight, the trustees voted to go along with his proposal on everything but his contention that the gentlemanly practice of physick, the manual craft of surgery, and the dispensing of medicines should be taught as distinct and separate professions. Although this tripartite division was in effect in Britain, the trustees felt that the colonies, having few large cities and endless frontiers, would be better served by generalists.

The trustees appointed Morgan "Professor of the Theory and Practice of Physic" – the first medical professorship in colonial America. Soon after receiving the honor, Morgan wrote to Franklin: "I am under so many Obligations to You that I fear I shall never have it in my power to make you any due acknowledgement."

Shippen, who did not mind getting his hands bloodied and apron stained, was appointed professor of anatomy and sur-

gery. But he was very upset. In his acceptance letter, he explained: "I should long since have sought the patronage of the Trustees of the College, but waited to be joined by Dr. Morgan, to whom I first communicated my plan in England, and who promised to unite with me in every scheme we might think necessary for the execution of so important a point." He did not indicate where the idea that led him to his plan emerged, but he spoke about it being on his mind for seven years.

Morgan's preemptive actions also enraged Shippen's father and the family's close medical friends. Even John Fothergill, who had expected Morgan and Shippen to approach the trustees together, was disturbed. He had written to James Pemberton of Philadelphia to tell him that he had advised Shippen to give a course of anatomical lectures, while waiting for Morgan to return.

But just how good was the teaching by Morgan, Shippen, Rush, and the others at the new medical school? Medical historian John Duffy assessed the overall quality of the lecturing as "probably not too high" and not comparable to Edinburgh. Still, the new professors were innovative in some areas. They did their best to emphasize New World diseases, America's unique environmental conditions, and the local botanicals. Hence, some historians disagree with Duffy, and Carl and Jessica Bridenbaugh go so far as to write: "Philadelphia on the eve of the Revolution enjoyed the services of a medical faculty perhaps unequaled outside London and Edinburgh."

Franklin's own assessment is noteworthy, because it falls midway between the extremes. In 1772, he wrote that he was "pleas'd to see our College begin to make some Figure as a School of Physic, and have no doubt but in a few Years, with good Management, it may acquire a Reputation similar and equal to that in Edinburgh." ■



Aaron T. Beck, M.D., emeritus professor of psychiatry, has won his share of honors, especially since the therapy he invented began to gain wide acceptance. Last year, the honors kept on coming, highlighted by an award often called “America’s Nobel.”

A Banner Year for Beck

By John Shea

Subject is surprisingly modest despite fame in certain circles. Appears level-headed and friendly, eager to help others. Just what can he be hiding? What dark secrets motivate him? Can the demeanor – and reputation – be true?

For the man frequently identified as “the father of cognitive therapy,” 2006 was a very busy year for accepting honors. Aaron T. Beck, M.D., Emeritus University Professor of Psychiatry, received the Distinguished Investigator Award from NARSAD (National Alliance for Research on Schizophrenia and Depression), as well as the 2006 Edward A. Strecker Award, presented

by Pennsylvania Hospital and the University of Pennsylvania Health System for outstanding contributions to the field of clinical psychiatry. Beck was also honored with the Lifetime Achievement Award from the American Foundation for Suicide Prevention and the 2006 Adolf Meyer Award, the most prestigious award presented by the American Psychiatric Association. And then came the Lasker.

Since 1946, the Albert & Mary Lasker Foundation has presented the Albert Lasker Medical Research Awards every two years. Widely considered the nation’s most distinguished honor for basic and clinical medical research, the Lasker Awards have

been given to 71 scientists who went on to receive the Nobel Prize as well.

Which puts Beck in some very fine company. After completing his psychiatric training in the early 1950s, he came to Penn as an instructor in 1954. He was all set to follow the accepted theories of the day for treating illnesses like as depression. But he came to sidestep those theories, most of which relied heavily on Freudian analysis, and instead developed a pragmatic and highly productive technique for helping patients deal with emotional disorders. As he put it in one of his early books, *Cognitive Therapy and the Emotional Disorders* (1976), “Psychological

problems are not necessarily the product of mysterious, impenetrable forces” – a statement that runs counter to the “deep” probing customary in Freudian analysis. Instead, Beck came to believe, those problems may arise from what he called “faulty learning, making incorrect inferences, . . . and not distinguishing adequately between imagination and reality.” The way to help patients, he concluded, was to help them learn to examine their “automatic thoughts” for distortion and exaggeration.

Decades after he had his first insights, Beck “has made a huge impact on untold numbers of people, relieving immeasurable amounts of suffering,” according to the Lasker Foundation’s release. “Countless individuals owe their sense of well-being – and their lives – to Beck’s work.”

Joseph L. Goldstein, M.D., chairman of the jury that selected Beck for the award, put it just as forcefully: “The development of cognitive therapy by this year’s Lasker Clinical Awardee is one of the most important advances – if not *the* most important advance – in the treatment of these diseases in the last 50 years.”

In addition to such recognition, each Lasker Award recipient receives an honorarium of \$100,000.

Subject appears in denial – has stated over and over that Freudian analysis “has got some things wrong with it,” that psychoanalysis does not do as good a job in helping patients as the “therapy” he has “created.” Obviously he is a man with problems. But how to break through the pose?

When asked recently how it feels to be introduced as the father of cognitive therapy, Beck replied, “This still makes me feel a bit uneasy. I prefer to be thought of as an investigator who has developed a new therapy rather than as the guru of a new field.” At the same time, he does not back away from his claim that the older forms

“The main source of pleasure in receiving the Lasker Award,” says Aaron T. Beck, M.D., “is that it represents a recognition by the scientific community that cognitive approaches to psychopathology and therapy meet the same demanding scientific standards as biological research.”

of psychotherapy were based on faulty premises. “The biggest surprise came very early in the studies when I found that my attempt to verify psychoanalytic hypotheses did not work,” said Beck. “I discovered at that time a new lead to understanding depression – namely, the cognitive distortions that are central to this. The main source of pleasure in receiving the Lasker Award is that it represents a recognition by the scientific community that cognitive approaches to psychopathology and therapy meet the same demanding scientific standards as biological research.”

The recognition Beck spoke of did not come automatically. As late as 1981, one of his colleagues at Penn’s Center for Cognitive Therapy, which Beck founded, told *The New York Times* that Beck was seen as a “pariah” in the field. In treating patients with depression, Beck found he could not agree with the standard psychoanalytic view that it was the result of unconscious anger directed toward another person. The theory was that the patient could not accept his anger – and turned it toward himself. What Beck found over and over, however, was that his depressed patients considered *themselves* losers, that they saw *themselves* in a negative light.

Subject seems to indulge in fantasy, a belief that the “therapy” he developed has been “proven” to help patients in a remarkably short time – in a matter of weeks rather than decades! (Imagine the arrogance hiding behind that bland assertion – as if Freud and all his heirs were wrong!)

In describing Beck’s achievements, the Lasker Foundation placed a particular emphasis on the testing and large-scale scientific evaluations done by him and his team over the years. According to the Lasker Foundation, “Beck tested the new approach in clinical studies with a degree of rigor never before applied to any ‘talk therapy’ and thus established a new standard for assessing the effectiveness of any type of psychotherapy.”

One important early study compared the effectiveness of cognitive therapy and imipramine, considered the best antidepressant drug at the time. Beck found that cognitive therapy outperformed the drug and was better at preventing relapse. And at a lower cost!

After testing cognitive therapy for depression, Beck and his colleagues have gone on to adapt it for anxiety disorders, panic disorders, drug abuse, and other severe problems. In one of his books for the general reader, *Prisoners of Hate: The Cognitive Basis of Anger, Hostility, and Violence* (2000), Beck even applied the insights of cognitive therapy to the matter of troubled groups – people who commit sexual abuse, murder, genocide, and nationalistic violence. In recent years, Beck’s focus has been on preventing suicide.

Subject appears to believe that giving psychiatric patients “homework” – as if they were enrolled in a class instead of engaged in therapy! – will help them. What’s next? Encouraging them to take a cold shower?!

One of the chief differences between cognitive therapy and the more traditional forms of psychotherapy is that the patient is encouraged, in some ways, to become his or her own therapist. The trained cognitive therapist is an advocate for the patient, and the therapy itself, when successful, becomes a collaboration. In effect, patients are trained to review their own negative, “automatic” thoughts in a



Photo by Stuart Watson

At the Penn reception in his honor, Aaron Beck is congratulated by his daughter Judith S. Beck, Ph.D., director of the Beck Institute for Cognitive Therapy and Research.

systematic fashion – and be able to convince themselves that they are distortions and exaggerations of reality.

As Beck put it in an article in *The Pennsylvania Gazette* 17 years ago, the meanings in cognitive therapy “are very much in the surface. They’re reducible almost by anybody who is trained to look for common themes, the kind that are common, ordinary, common-sense-type meanings, not the esoteric meanings that psychoanalysis would attach to it.” The symbolism in psychoanalysis, he continued, “is really quite different, then, from what we would call everyday symbolism. To me, a fire is a fire: it means danger. To a classical analyst, fire might represent passion, or it might represent destruction.”

The meaning, then, can be accessible to the patient, too, with some help from the cognitive therapist. On the web site of Penn’s Center for Cognitive Therapy, the topic of “homework assignments” is specifically discussed: “The most important, positive changes that you will make in your life will occur in your everyday experiences outside of your therapist’s office. In order to help you to make these ‘real life’ changes, your therapist will help you to design homework assignments. These assignments will show you how to take the ideas and skills you’ve learned in session and to apply them constructively and actively between sessions. This process will help you to learn valuable

skills and will enable you to become your own therapist once your work with your cognitive therapist is complete.”

The site goes on to assert that research has shown that the patients who take part the most in these homework assignments “tend to make quicker and more long-lasting therapeutic progress than those patients who – for whatever reason – choose not to involved themselves with the homework.”

Subject seems to keep busy incessantly. It is as if he feels a compulsion to fill an inner void. What is he trying to escape?

At a reception at Penn celebrating his Lasker Awards, Beck seemed characteristically modest. “I was fortunate to have trained a brilliant group of researchers who then expanded the application of cognitive therapy both in terms of disorders and also geographically across the globe.” But he also insisted that, as he put it, “There is much more to be done. Whatever value we have added to the treatment of psychiatric disorders is diminished by the fact that it has not been extended to most of the people who want and could benefit from this treatment.”

And Beck is one of those who will be doing more. Today, Beck reports, he continues to do demonstration interviews with patients at the Beck Institute for Cognitive Therapy and Research in Bala Cynwyd, Pa., and remains in touch with

other cognitive therapists from all over the globe. He and colleagues are involved in revising two of his books for the University of Pennsylvania Press as well as working on books that apply cognitive therapy to schizophrenia and to anxiety disorders. Among the other projects is a suicide-prevention study in which therapists at community mental-health centers are being trained to treat patients who have recently attempted suicide. As Beck explains, the project is an attempt to replicate his earlier study that showed that it is possible to reduce suicide attempts by about 50 percent within a year after the patients receive therapy.

Beck was senior author of the original study (George K. Brown, Ph.D., a research assistant professor of psychiatry at Penn, was lead author), which was reported in *The Journal of the American Medical Association* (August 3, 2005). The patients who were in the cognitive therapy group also exhibited significantly less hopelessness than those who did not receive the same therapy. The results were promising enough that *The New York Times* reported cognitive therapy “may offer the best chance to save those at the highest risk of taking their own lives” (August 9, 2005).

And let the record show that the Lasker Clinical Award was not the last major honor Beck received in 2006. A month later, he received word that the Institute of Medicine had selected him for the Gustav O. Lienhard Award for the advancement of personal health services. The award comes with a \$25,000 prize. In announcing the Lienhard Award, Harvey V. Fineberg, M.D., president of the Institute, spoke in terms that have become increasingly familiar. “Dr. Beck has earned his rightful place among the most innovative clinician-scientists of our time. His work has given hope to the millions of people who suffer from serious mental diseases, empowering patients to take active steps to improve their health.” ▀

Researchers find
that two neuro-
degenerative disorders
have a misfolded
protein in common.

By Karen Kreeger



The research team included investigators from Penn as well as from universities in San Francisco, San Diego, British Columbia, and Germany. Here are some of the Penn researchers. Top, left to right: Murray Grossman, M.D.; Virginia Lee, Ph.D.; John Trojanowski, M.D., Ph.D.; Jennifer Bruce; and Manuela Neumann, M.D. Bottom, left to right: Theresa Schuck; Adam Truax; and Linda K. Kwong, Ph.D.

Discovering the Connection

For the general public, amyotrophic lateral sclerosis (ALS) is widely known because it affected Lou Gehrig, the baseball great – and his name has become associated with the disease. Much less familiar is frontotemporal dementia (FTD). Yet researchers investigating neurodegenerative disorders have been interested in both.

According to Virginia M.-Y. Lee, Ph.D., director of Penn's Center for Neurodegenerative Disease Research, "Clinically there's overlap in these two disorders, so it was very tantalizing to see if there was anything to link them biochemically." Indeed, this overlap of symptoms suggested different manifestations of the same disorder, and researchers have long sought a connection between the two.

Now, with the publication of a study in *Science* (October 6, 2006), Lee and a team of Penn investigators have discovered the connection – a protein called TDP-43. The protein was found to have accumulated abnormally in post-mortem brain tissue from individuals diagnosed with either disease. The misfolded disease protein was recovered only from affected regions of the central nervous system, which include the hippocampus, neocortex, and spinal cord.

These findings open up new avenues of research into how the crumpling, or misfolding, of specific brain proteins (TDP-43) leads

to strange and sometimes even criminal behavior (in persons with FTD), as well as paralysis (in persons with ALS). The effects depend upon whether these toxic waste products in the brain are dumped in the frontal and temporal lobes (the part of brain controlling judgment and comportment) or the spinal-cord motor neurons (the control centers regulating the ability to walk, run, and perform other types of movement).

FTD is a complex group of disorders – clinically, genetically, and pathologically. After Alzheimer's disease, it is the most common cause of dementia in people under the age of 65. Patients with FTD go through progressive changes in social, behavioral, and language skills; some also develop motor neuron disease. In some patients diagnosed with ALS – a progressive neurological disorder that destroys motor neurons – dementia can also be a later complication.

"Another reason for FTD's relative obscurity," explains John Q. Trojanowski, M.D., G.M.E. '80, Ph.D., another author of the *Science* study, "is also undoubtedly the shame family members experience with the strange and, at times, bizarre behavior of patients, including disturbing obsessions, larceny, or even sexual deviancy, that may bring the patient to the attention of the legal system rather than to the health-care system."

Trojanowski is director of Penn's Institute on Aging.

To identify the protein they found in the post-mortem brain tissue, the investigators first made antibodies to the tagged, misfolded protein common to tissue samples from both disorders. "We then took brain extract containing the mystery protein and injected it into mice to develop the monoclonal antibodies that recognize TDP-43," says Lee. The researchers next used antibodies against TDP-43 in post-mortem brain tissue samples and found that all 72 cases of FTD or ALS they examined contained misfolded TDP-43.

Misfolded proteins are a common mechanism in neurodegenerative diseases. The misfolded proteins are tagged for recycling by the cell with another protein called ubiquitin. What happens in neurodegenerative diseases, however, is that these tagged proteins aggregate in the neurons of the brain and spinal cord and act like waste dumps that become progressively more widespread and toxic. Many misfolded disease proteins have been identified and targeted for drug development in other neurodegenerative disorders.

Now, with the discovery of the role of TDP-43 in the most common form of FTD and ALS, the Penn team hopes that there will be renewed efforts to discover more effective treatments for these otherwise lethal diseases. ■



Glimpses of Botswana

On opposite page:

Top left: An orphaned Botswana child.

Top right: Francisco Gonzalez-Scarano, M.D., chair of Penn's Department of Neurology, holds a child during a visit to an orphanage.

Bottom: Stephen J. Gluckman, M.D., G.M.E. '76, left, professor of medicine and clinical director of the Penn-Botswana partnership, leads morning rounds with Penn students at the Princess Marina Hospital.

This page:

Above: Marah Gotcsik, a Penn medical student, tends to a patient.

Below: Some of the thousands of Botswana children who were left orphans because of HIV.



In August, a delegation of Penn administrators and doctors, including Ralph W. Muller, CEO of the Health System, and Ronald Daniels, provost of the University, visited Botswana, where Penn has had an official presence since 2001. Back then, the Government of Botswana, with support from the Bill and Melinda Gates Foundation and the Merck Foundation, began a program to make antiretroviral therapies available to citizens with HIV/AIDS. Penn provided faculty from the Department of Medicine's infectious diseases division to instruct and train local providers on the management of HIV-infected patients and on the proper use of the antiretroviral drugs.

Since then, the Penn-Botswana Program has expanded with funding from the President's Emergency Plan for AIDS Relief and support from the University of Pennsylvania School of Medicine. Penn physicians are now responsible for two inpatient medical wards at Princess Marina Hospital in Gaborone as well as a site in Francistown. During the last academic year, more than 40 Penn residents and medical students, under the supervision of Penn faculty, took part in clinical programs at both hospitals.

Led by Harvey Friedman, M.D., chief of infectious diseases and director of the Penn-Botswana Program, the Penn visitors came to Botswana in August to explore ways that the University could strengthen its relationship with the nation. Among the people who visited the Penn-Botswana clinical sites was Rick Cushman, a news officer for the Department of Communications of PENN Medicine. Here is a sampling of the photographs he took during his stay. ▀



The University's delegation to Botswana included JoAnn McCarthy, Ph.D., assistant provost for international affairs.



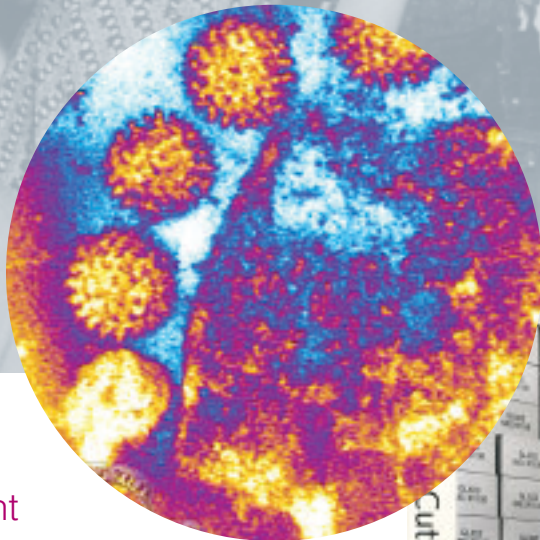
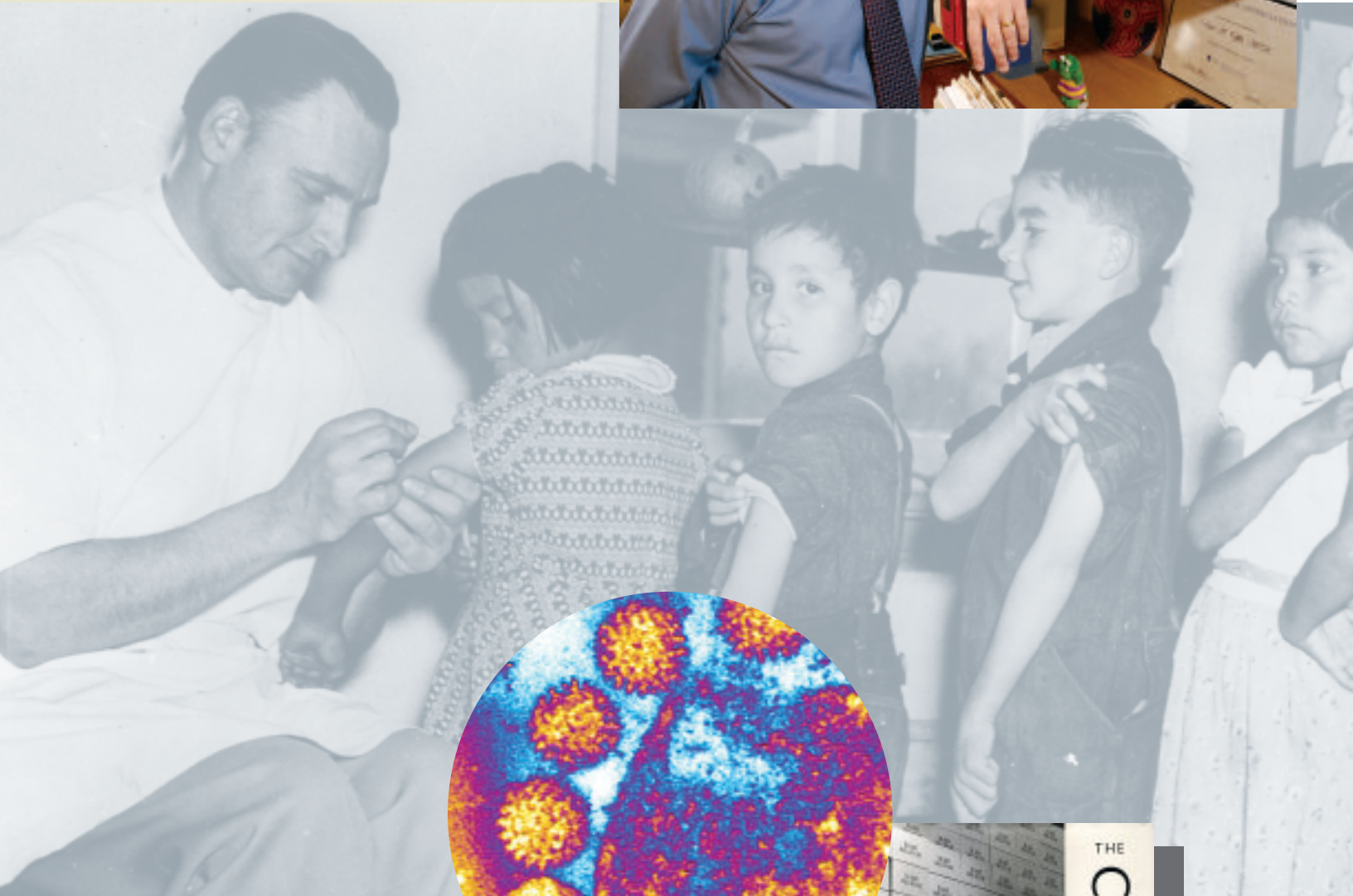
The VACCINE MAN

By Nicole Gaddis

Paul Offit takes a break in his office filled with books, awards, and memorabilia.

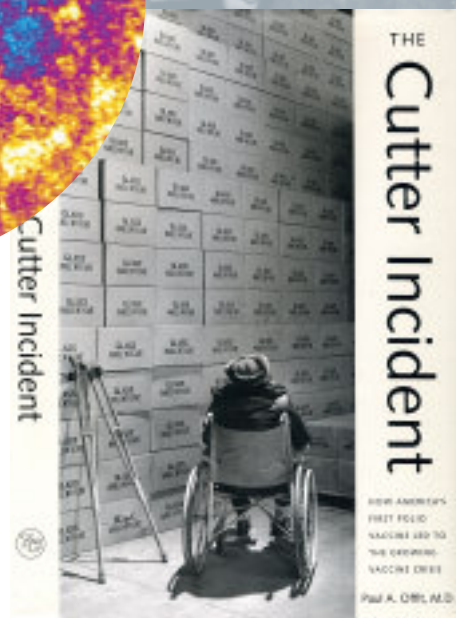


Photo: Daniel Burke



In the early 1950s, a doctor vaccinates Native American children in Wyoming.

Paul A. Offit, M.D., has spent many years working to develop a vaccine for the rotavirus, has vaccinated many children, and heads a center for vaccine information. Most recently, he's published a gripping book about one of the worst incidents in the history of vaccines.



Last May, eight members of a family in Sumatra, Indonesia, became ill from bird flu. All but one may have caught the virus from the same family member. Seven died. Although the World Health Organization believes that H5N1 has not yet



Evans/Three Lions/Getty Images

in Namibia that was, surprisingly, targeting adults rather than children. In early June of last year, there were more than 50 suspected cases under investigation, and wild poliovirus type one had been confirmed in four of them. There were at least seven deaths. As the authorities scrambled to vaccinate some 2 million people, the Government of Namibia said it was unable to handle the outbreak on its own. UNICEF provided some 2.5 million doses of the polio vaccine.

Despite the pressing need for vaccines, shortages like these are common. Pharmaceutical companies still fear litigation and the concept of “liability without fault,” which was introduced in the wake of what became known as the Cutter Incident. Paul A. Offit, M.D., professor of pediatrics and the Maurice R. Hilleman Professor of Vaccinology at Penn and chief of the Division of Infectious Diseases at The Children’s Hospital of Philadelphia, appears uniquely qualified to write about this important event in the history of vaccines.

In February 2006, a vaccine against the rotavirus that Offit and two other researchers connected to Penn developed was approved by the Food and Drug Administration. Offit has also been a passionate advocate for vaccines, so much so that he has been vilified on occasion by anti-vaccine groups. In addition to spending 25 years studying and developing vaccines, Offit also heads the Vaccine Education Center at Children’s Hospital and has written two earlier books for a popular audience. His most recent, published in 2005 by Yale University Press, is *The Cutter Incident: How America’s First Polio Vaccine Led to the Growing Vaccine Crisis*. According to a review in *The Journal of the American Medical Association*, the book demonstrates that “the poliovirus vaccine disaster of the 1950s . . . illustrates the legacy of public mistrust and rampant litigation that endures to this day.”

evolved the ability to spread easily among people, scientists believe that it’s only a matter of time and the calls for a vaccine are growing louder.

During the same period, polio experts were puzzled by a new outbreak

Offit summarizes the tragedy in his introduction:

“After receiving [Jonas] Salk’s vaccine, forty thousand children developed headaches, neck stiffness, muscle weakness, and fever; about two hundred were permanently and severely paralyzed; and ten died. Most of these children lived in California and Idaho, and most were paralyzed in their arms, even though polio typically paralyzed the legs. Children were getting polio even though polio season was still a few months away. And children given Salk’s vaccine were spreading polio to others.

“The strange outbreak of polio in the spring of 1955 caused the first national response to a medical emergency, led to the firing of several high-ranking public health officials, pushed federal oversight of vaccines out of its infancy, and resulted in a court case whose verdict eventually threatened the viability of all vaccines.”

With much care, clarity, and compassion for those affected by this “man-made epidemic,” Offit outlines the history of the Salk vaccine, the elements and failings of the early vaccine-production process, and, most chillingly, explores the many ramifications of the trial that followed.

Cutter Laboratories of Berkeley, California, was one of five companies called upon in early 1954 by the National Foundation for Infantile Paralysis to manufacture Salk’s vaccine for a field trial. Although the company primarily developed veterinary vaccines, it also manufactured human vaccines for smallpox and rabies, the famous insect repellent that bears its name, and antitoxins for tetanus, diphtheria, and streptococcus.

Cutter was also one of the first companies to have a medical product recalled. In April 1948, more than 2,900 bottles of a solution containing glucose, in saline, were shipped to hospitals. The solution appeared cloudy (likely contaminated

with bacteria or fungi), and several people died after they used the product. The F.D.A. charged Cutter with “misbranding and adulteration.” The company pleaded no contest. It paid a fine of \$600.

Although it was Cutter that was famously brought to court for its polio vaccine, it wasn't the only pharmaceutical company to make a vaccine, in Offit's words, “that paralyzed and killed children.” As he notes in his book: “Between April 15 and May 7, five different companies distributed 4,844,000 doses of polio vaccine throughout the United States.” Neal Nathanson, M.D., now head of Penn's Global Health Programs and a long-time faculty member of the School of Medicine, served as head of the Poliomyelitis Surveillance Unit at the time. In his study of the situation, he concluded that the number of reported cases of polio that involved doses from Eli Lilly, Parke-Davis, and Pitman-Moore were “within the range expected by chance occurrence.” The situation with Wyeth, however, was different. Offit reports that Wyeth distributed 776,000 doses.

Eleven cases of paralysis followed administration of Wyeth's vaccine – but only two were expected. Eventually, Nathanson identified the vaccine lot that was most responsible, No. 236, and concluded that “It is difficult to account for these findings by any other hypothesis than that infective amounts of live virus were present in the vaccine.”

“Quietly and with little attention from the public or the media, Wyeth recalled one lot of its vaccine. . . . Nathanson surmised that the government never publicly disclosed the Wyeth problem because it wanted to maintain the public's trust in the polio vaccine program.”

The incidence of paralysis from Cutter's vaccine, however, was 10 times that of Wyeth's. Sixty separate lawsuits were filed against Cutter Laboratories. The most famous of these cases was filed by Josephine and Robert Gottsdanker, whose

daughter, Anne, was permanently paralyzed by Cutter's vaccine. In April 1955, Josephine had watched an episode of the CBS television program *See It Now*, in which Jonas Salk spoke about the vaccine he had developed to prevent polio.

“On April 22, four days after her children were vaccinated, Josephine Gottsdanker loaded her children into the back seat of the car and drove from Santa Barbara, California, to Calexico – a town on the border between California and Mexico – to visit her parents and relatives. The visit was uneventful. But on the afternoon of April 26, during the drive back from Calexico, Josephine noticed that something was wrong with her daughter. “We stopped at a little mountain village for coffee and ice cream, and she said that her head hurt. I thought her ponytail was pulled too tight. It seemed to me like a casual child's complaint at

Photo: Daniel Burke



The Vaccine Education Center provides materials free of charge

What Can be Done to Strengthen the Vaccine Industry?

As Paul A. Offit, M.D., details in *The Cutter Incident*, the case has several legacies. The death and paralysis of the children who were given the vaccine is, of course, one of them, described in his book. At the same time, the incident led swiftly to safer ways to make vaccines and more effective ways to regulate them.

Another legacy is the gradual but dramatic shrinking of vaccine production. In 1957, there were 26 companies making five vaccines. Today, there are four companies that make 12 vaccines – and one result is that the population has faced severe shortages of the influenza vaccine in recent years. In “Why Are Pharmaceutical Companies Gradually Abandoning Vaccines?” (*Health Affairs*, May/June 2005), Offit begins by noting that “Pharmaceutical companies are businesses, not public health agencies; they are not obligated to make vaccines.”

What, then, to do?

In 1986, Congress passed the National Childhood Vaccine Injury Act, which included an injury-compensation program. In many ways, according to Offit, it is “a model system to prevent abuses by personal-injury lawyers.” But he also identifies weaknesses that must be corrected.

- * At present, people can opt out of the compensation program and take their case to a jury – and juries sometimes make large awards that Offit believes are not supported by the science.
- * Currently, the program covers only vaccines recommended for children. Offit believes it should cover others that have smaller niches and can greatly help certain populations.
- * The program does not cover an unborn child when the mother is immunized. Offit would like to broaden the program, because doing so would help



to parents and physicians – in English and Spanish.

against group B streptococcus (GBS), which kills about 100 babies in the United States a year.

Other avenues would be to increase payments for vaccines. Today, the Federal Government's Vaccines for Children is the largest single buyer of vaccines, which can tend to create a cap. The government could also raise the fixed price of certain vaccines.

As for decreasing the cost of making vaccines, Offit believes that correcting the weaknesses in the National Vaccine Injury Compensation Program would go a long way in that regard. He would also like to see public-private partnerships for vaccine research and development, such as happened with between the National Foundation for Infantile Paralysis (now March of Dimes) and the manufacturers of the polio vaccine in the 1950s.

the time. Then she vomited in the car. We took her to County Hospital. By then she had lost motion in the upper part of her leg – then it moved to the lower part.' . . . Despite receiving Salk's vaccine, Anne Gottsdanker had contracted polio. Jerry, vaccinated from the same vial at the same time as his sister, was fine."

In his opening statement at the trial, the Gottsdankers' lawyer, the flamboyant and influential Melvin Belli, said, "Number one, we claim Cutter was negligent and careless. We don't claim that Cutter intended this to happen. We don't claim any criminality. We will show you that they knew the safety tests were breaking down [and that] they picked up live virus in that vaccine just as it was ready to go out of their doors." This argument would have an impact: when the case went to the jury, Belli asked that the judge make Cutter liable for a process that was not, at the time of manufacture, adequate to ensure absolute safety; even if Cutter had complied with the minimum requirements of the United States Department of Health, Education, and Welfare for the production of the polio vaccine, Cutter still wouldn't be "relieved . . . of liability." And so, as Offit sees it, the judge's final words to the jury "sealed Cutter's fate" and "opened the door for a revolution in product liability law." Said the judge: "If you find that the vaccine of the defendant Cutter Laboratories did in fact contain infectious amounts of live polio virus, and that the injection of vaccine into the minor plaintiffs [caused] polio, [then] I instruct you that the defendant Cutter Laboratories breached an implied warranty."

On the charge of implied warranty, the jury's vote was against Cutter. Cutter wasn't found negligent in the production of polio vaccine – it had complied with the existing government safety tests – but was still financially responsible for harm caused by its product. In the decades to follow, according to Offit, the fear of law-

suits changed not only vaccine and drug development but also the drug trials themselves. For example, when Merck tested its new rotavirus vaccine (the one Offit helped develop), it went first to countries with high standards of medical care, namely the United States and Finland, rather than poorer countries, since its possible side effects were well-known. Indeed, the trials for the two rotavirus vaccines in development in the last decade enrolled and monitored more than 60,000 infants each, making them the largest pre-licensure trials to evaluate vaccine safety. The fear of side effects may also be an underlying reason for the apparently slow development and manufacture of flu vaccines, including those for avian flu. In 1976, for example, the United States vaccinated millions amid worries of a swine flu epidemic. An estimated 3,000 people who developed complications from the vaccine sued the federal government.

But while the shadow of litigation may have slowed vaccine development and manufacture, it hasn't stopped the process; vaccines are still considered the best option for many diseases. The vaccine industry suffered a major setback in 1999, when RotaShield®, a rotavirus vaccine developed by Wyeth, was pulled after the Centers for Disease Control and Prevention found a rare association between the vaccine and a potentially fatal bowel obstruction (intussusception). In a lengthy interview last August in *Medical Progress Today*, a publication of the Manhattan Institute for Policy Research, Offit discussed the risks of medical research and vaccine development in particular. He noted that RotaShield, with which he was not involved, caused one death. "Of the million children who received RotaShield, probably ten would have died from the disease. . . . You could have argued that the benefits of the vaccine clearly outweighed its risks." At the same

time, Offit has the reverence for individual lives that is essential for a pediatrician. More than once he has recounted his time as a senior resident at the Children's Hospital of Pittsburgh, when a mother brought in her nine-month-old son. The child, who had been healthy only days earlier, had a fever, was vomiting, and was severely dehydrated – all because of the rotavirus. Despite the efforts of Offit and his team, the baby died. "It's something you never forget," Offit told *FOCUS*, the publication of the Wistar Institute, where he is an adjunct professor.

That kind of experience served as motivation. In 1981, Offit joined a Children's Hospital-Wistar research team that was developing a rotavirus vaccine. Stanley A. Plotkin, M.D., now an emeritus professor of pediatrics at Penn, and H. Fred Clark, D.V.M., Ph.D., a research professor of pediatrics and adjunct associate professor at Penn's School of Veterinary Medicine, had begun the research. Last February, the vaccine, Merck's RotaTeq[®], was approved by the F.D.A. and added it to its list of childhood vaccines that are routinely recommended.

"It's gratifying to know at last we have in hand a technology which can prevent a lot of suffering in this country," says Offit. Rotavirus gastroenteritis causes approximately 70,000 or more hospitalizations and 20 to 40 deaths a year in the United States, which is alarming enough – but the CDC estimates that the virus is responsible for as many as 600,000 deaths worldwide each year.

RotaTeq is a live pentavalent vaccine based on a bovine strain, WC3, which is naturally attenuated for humans. (The RotaShield vaccine, in contrast, was based on a rhesus monkey strain of rotavirus.) In clinical trials, it reduced hospitalizations by 63 percent over the child's first year of life and reduced the number of lost workdays by 87 percent. In an editorial, *The New England Journal*

of Medicine noted that this would be "a welcome benefit with clear economic implications for families" (January 5, 2006). Most importantly, there appeared to be no increased risk of intussusception*.

After spending close to 25 years developing a rotavirus vaccine, Offit has increasingly turned his attention to patient – and parent – education in the hope that what he considers medicine's best tool in improving public health will see renewed support and development. "We are dealing with a generation that is healthier and hasn't faced the epidemics of the past," he explains. "People in the United States don't fear disease – they now fear side effects. So the public effectively needs to be re-educated."

The Cutter Incident can be seen as part of that educational effort. So is his role as director, since 2000, of the Vaccine Education Center at Children's Hospital. With a staff of three, the center aims to provide current information about childhood vaccines in a straightforward manner. A small room has been transformed into an office and "information depot" that holds stacks of flyers, brochures, and DVDs – available in English and Spanish. All are provided to parents and physicians free of charge; the center receives no funds from pharmaceutical companies. "We have to limit individual orders to 150 copies of our flyers, simply because we can't print them fast enough," Offit reports.

Although the center's website (<http://www.vaccine.chop.edu>) lists several of the major health advances because of vaccines, it also acknowledges the concerns of those who wonder whether vaccines remain necessary: "Further, a growing number of parents are concerned that vaccines may actually be the cause of diseases such as autism, hyperactivity, developmental delay, attention deficit disorder, diabetes, multiple sclerosis (MS), and sudden infant death syn-

Courtesy The Children's Hospital of Philadelphia



The three recipients of the Children's Hospital Gold Medal: from

The Ethics of Vaccines Project

In December 2005, Penn's Center for Bioethics launched a project to examine the field of vaccines and to propose an ethical framework to help inform researchers, pharmaceutical companies, public health agencies, health-care providers, and citizens about vaccines and their safe, effective, and ethical use. According to the project's web site, "The record of vaccines as a successful tool in reducing or eradicating infectious disease is extraordinary." Yet, as Arthur L. Caplan, Ph.D., director of the Center for Bioethics and chair of the Department of Medical Ethics, notes, "Just as Katrina uncovered a number of very unacceptable realities associated with how well prepared we were and how the poorest of our citizens were affected by the storm, the prospect of an avian flu pandemic – and it is still just a prospect – is bringing into sharp relief where we need to focus our energies in terms of the ethics around the role of vaccines in global public health."

Caplan sees the University of Pennsylvania as especially well-suited to lead



left to right, H. Fred Clark, Stanley A. Plotkin, and Paul Offit.

such a project that “touches so many areas across medicine and the sciences, as well as the social sciences and the humanities.” The University’s partner in this undertaking is the Wistar Institute, Penn’s long-time neighbor.

Members of the working group are drawn from several of Penn’s schools as well as from Wistar and other universities, pharmaceutical firms, and state bodies. Among the members are Paul A. Offit, M.D., and Stanley A. Plotkin, M.D.

In its meetings so far, the working group has considered such topics as:

- * History and Regulation of Vaccines in the Global Context
- * The Business of Vaccines: Responsibility, Profitability, Liability
- * Clinical Trials/Regulatory Processes/Marketing/Pricing; and
- * Vaccines and Federal Pandemic Planning: Ethical and Practical Implications.

The project plans to hold a major public symposium in September 2007 to present its overall project findings, the ethics framework for action, and the implications of that framework.

drome (SIDS), among others.” The center seeks to allay those fears.

It’s an important step in championing children’s health. As Offit puts it at the end of *The Cutter Incident*: “If children are hurt by a vaccine, they will have no trouble finding someone to represent their interests. Personal injury lawyers will line up to be the chosen representatives, and the media will gladly tell their stories across the country. But who will represent the interests of the thousands of children hospitalized, permanently harmed, and killed by viruses and bacteria for which existing vaccines are in short supply or for which new vaccines may never be developed?”

As one of the most well-known experts on vaccines in the nation, Offit frequently can be found quoted in the pages of the major newspapers and scientific journals on vaccines and infectious diseases. Celebrity often comes at a cost, however, and in some circles Offit is a controversial figure. For example, of the six customer reviews for the third edition of Offit’s *Vaccines: What You Should Know* (Wiley) posted on Amazon.com, two give the book five stars out of five. One of the positive reviews calls it an “excellent book” that gives “essential information for parents.” The other four reviews, however, give *Vaccines* one star, citing Offit’s role as a consultant for pharmaceutical manufacturers, a holder of the patent for the RotaTeq vaccine, and someone who stands to gain from its sale. The book, says one anonymous reviewer, “is at a minimum disingenuous.” The parents of an autistic child who write the “Adventures in Autism” blog have described Offit as “America’s most quoted promoter and apologist for the vaccine industry.”

Offit is not unaware of this view of him. As he noted in the interview in *Medical Progress Today*, “If the focus is on

me, my perceived conflict is that I have worked with a pharmaceutical company and that means that somehow I’m willing to lie about vaccine safety. I think that’s just wrong. People who publish papers on vaccines or devote their lives to vaccines and who testify in front of federal advisory committees do so because, first, they have an expertise and, second, because they think it’s the right thing to do. In some ways, I’m the poster boy for conflict because I have a patent on a vaccine that will probably make a lot of money for me. But that’s not why I am a scientist and certainly not why I’ve been working in this field for 25 years.”

And it’s very likely that Offit did not expect to be receiving a gold medal for his years of hard work and dedication. But in September, Children’s Hospital presented the three developers of the rotavirus vaccine – Offit, Plotkin, and Clark – its Gold Medal, last awarded in 1983. At the presentation, Richard M. Armstrong Jr., chairman of the hospital’s board, said: “By creating a vaccine that will virtually eradicate rotavirus, Drs. Clark, Offit, and Plotkin have helped to promote the health and welfare of children, our nation’s greatest resource.” ■

**At press time, the Food and Drug Administration released information on 28 cases of intussusception in infants vaccinated with RotaTeq. According to the FDA web site, “Intussusception can occur spontaneously in the absence of vaccination. Of the reported 28 cases of intussusception, the number that may have been caused by the vaccine or occurred by coincidence is unknown.” It goes on to say that the number of reported cases after administration of RotaTeq “does not exceed the number expected based on background rates of 18-43 per 100,000 per year for an unvaccinated population of children ages 6 to 35 weeks.” Merck & Co., maker of RotaTeq, said there was no “causal relationship” in the reported cases. The FDA continues to monitor the situation.*

It's SPORTS in

By Jon Caroulis

Karen Bowles, M.D., a clinical assistant professor of general internal medicine in Penn's health system, crossed the finish line at the Philadelphia Distance Run and was delighted to find out she had beaten her previous best time in the 14-mile race by 14 minutes.

Although she battled her asthma the last two miles, she was delighted with the effort. Then she noticed something. Where was her family?

Her husband, Rob, and daughters Ava and Marilyn were usually there to meet her. But not this time. Had something happened? When Robert Tokarek, M.D. '92,

and the girls showed up, they were surprised as well. Tokarek had not expected her to finish as quickly as she'd done.

Watching one of his patients play in a men's hardball league, Tokarek thought, "I can do this!"

A Pittsburgh area native, Tokarek had played high-school baseball. (A cousin of his, Mickey Morandini, played for the Phillies and Chicago Cubs.) But Tokarek chose not to play college ball because he was feeling burnout. As he puts it, "The time commitment for pre-med and baseball did not work out."



Once a self-described "athletic nerd," Karen Bowles enjoys the workouts as well as the races.

Despite busy schedules, a dermatologist and an internist make time for athletic pursuits.



The love of athletic competition Karen Bowles and Rob Tokarek show has rubbed off on daughters Marilyn and Ava.

After graduating from Penn's medical school, Tokarek completed his training at the University of Pittsburgh and Thomas Jefferson University. Next step was opening his own dermatology practice. But from that moment 11 years ago, when he realized he could compete in serious baseball leagues and tournaments, playing baseball has become a big part of his life.

In his first season, Tokarek hit .520 and shared the league's Most Valuable Player award. The other MVP? His patient. Organized around men 30 and older and 40 and older, these leagues are coordinated on a national basis. Tokarek proudly wears

the FAMILY

Photographs by Tommy Leonardi

a ring from one championship won in 2001, and he still feels the frustration at letting a recent championship slip away: his team, the Plymouth Pirates, lost, 9-7, in the finals after leading 6-0.

Tokarek plays in regional tournaments in Harrisburg and traveled to Florida twice last year. There, teams get to play in stadiums the major league teams use during spring training.

He and Bowles are able to compete at a high level in their sports because of a serious commitment: their training schedules start very early in the morning and include taking batting practice or exercising in the evening.

"I am an owner of my practice, so I do get to pick my days and weeks off without much problem," says Tokarek. "My wife and kids, of course, do support my hobby. The games are on Sunday mornings, which are wide open for me."

They also have a part-time nanny to help with scheduling. "I practice at nights a lot," says Tokarek, "and Karen does a lot of 5:00 a.m. workouts." Some of those early morning workouts include long bike rides, but, according to Bowles, the advantage is that there isn't much traffic at that time of day.

Tokarek and Bowles met when he had just started playing baseball again. She, on the other hand, describes herself as "an athletic nerd" who had never participated in sports.

After Marilyn was born, Bowles wanted to get into an exercise regime and chose triathlons – something she had never participated in or even considered. A nearby gym was running a course called "Triathlons 101." "I was exercising anyway,"

recalls Bowles, "so I thought, 'Why not?'"

The triathlons consist of swimming a half mile in open water, biking for 14 miles, and running three or four miles.

"My wife made herself into an athlete from scratch," says Tokarek proudly.

Bowles's first triathlon, in the summer of 2002, was "pretty intense. I had never swam [competitively] in open water before, and for me that was the most difficult part: people are all around you. It was pretty nerve-wracking, but I also really enjoyed it."

The triathlon season begins in June and ends in September; events are held locally at the Jersey shore. When not competing in the three-sport event, Bowles runs half-marathons.

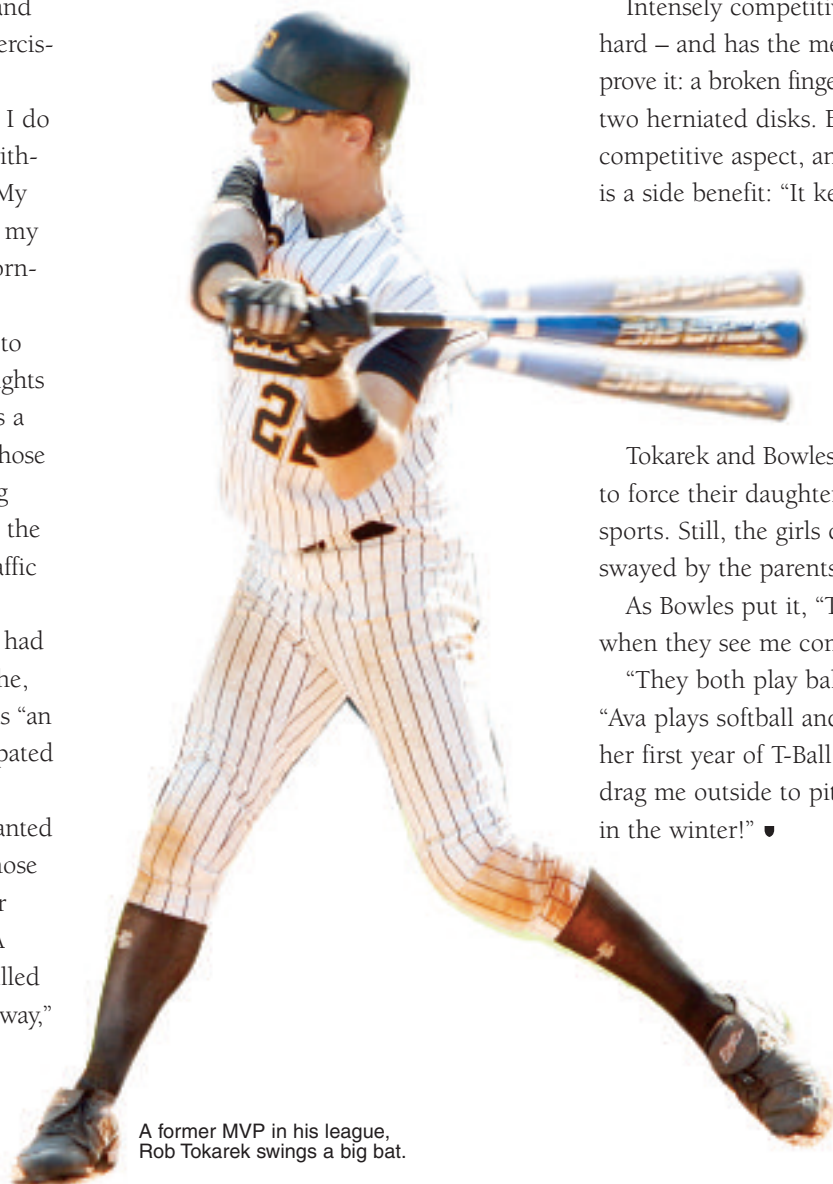
"I'm just getting back into training after an incredibly busy time at work," says Bowles. "The important part is to just start over. I've hired a swim coach, and I think Ava is going to practice with me. My goal is to do an Olympic-length marathon, which involves longer distances, but I may not get there until next spring."

Intensely competitive, Tokarek plays hard – and has the medical records to prove it: a broken finger, a torn left labrum, two herniated disks. But he enjoys the competitive aspect, and, he claims, there is a side benefit: "It keeps me young."

Tokarek and Bowles say they don't plan to force their daughters to participate in sports. Still, the girls can't help but be swayed by the parents' example.

As Bowles put it, "The girls get excited when they see me coming to the finish."

"They both play ball," notes Tokarek. "Ava plays softball and Marilyn finished her first year of T-Ball. They frequently drag me outside to pitch to them – even in the winter!" ♥



A former MVP in his league, Rob Tokarek swings a big bat.



Medical Alumni Weekend / May 11-13,



Whether you graduated five or seventy-five years ago, Medical Alumni Weekend is a great way to reunite with friends and recall some of your favorite moments of campus life. Catch up with classmates, learn about how PENN Medicine has changed — and remained the same — and bring your family, because there are events planned for everyone!

Friday, May 11, 2007

9:00 a.m. – 3:30 p.m. Registration

Location: Atrium Lobby, Biomedical Research Building
421 Curie Boulevard

9:00 a.m. – 10:00 a.m. “The Still-Neglected Problem of Osteoporosis: Treatments That Work and What’s in the Works”

Presenter: John Potts, M.D. '57, Director of Research, Massachusetts General Hospital

Location: Room 251, Biomedical Research Building

9:00 a.m. – 10:00 a.m. “Living Longer, Living Well: Successful Brain Aging”

Presenters: Virginia Lee, M.D., W.G. '84, Director, Center for Neurodegenerative Disease Research
John Trojanowski, M.D., G.M.E. '80, Director, Institute on Aging

Location: Auditorium, Biomedical Research Building

10:15 a.m. – 11:45 a.m. “You’re The Boss! Empowering Parents to Take Responsibility for Their Children’s Health”

Presenter: Lisa Hark, Ph.D., R.D., Director of the Nutrition Education and Preventative Program

Location: Auditorium, Biomedical Research Building



12:00 p.m. – 1:30 p.m. All-Alumni Luncheon.

Keynote presentation: “Pandemics and National Security”

Presenter: Harvey Rubin, M.D., Director of the Institute for Strategic Threat Analysis and Response (ISTAR), University of Pennsylvania

Location: Atrium Lobby, Biomedical Research Building
Throughout history, in every culture and in every society, pandemics and epidemics have had profound impact on the stability and success of the affected societies. The United States is no exception. In this session, Dr. Harvey Rubin will discuss historical examples and explore the potential for pandemic disruption on U.S. national defense.

1:45 p.m. – 2:45 p.m. “Medical Education in the 21st Century”

Presenter: Gail Morrison, M.D. '71, Vice Dean for Education
Location: Class of 1962 Auditorium, John Morgan Building

3:15 p.m. – 4:15 p.m. “Building Blocks of a Tax-Wise Estate Plan”

Presenter: Marcie Merz, J.D., Senior Director of Planned Giving
Location: Room 251, Biomedical Research Building
Hear an overview of common issues arising in the estate planning process, along with an explanation of recently reformed Federal Estate Tax and basic techniques for minimizing its impact.



**6:30 p.m. – 10:00 p.m. Medical Alumni Weekend
“Welcome Back” Dinner**

Location: Ritz Carlton — Philadelphia, Ten Avenue of the Arts (Broad & Chestnut Streets)

All alumni and guests invited! Kick off Medical Alumni Weekend with Dean Rubenstein, medical alumni, and faculty and students of the School of Medicine as we celebrate our rich tradition of alumni involvement in the School of Medicine and those who make a difference. The evening will also provide special recognition for those receiving the Distinguished Graduate Award.



Saturday, May 12, 2007

8:00 a.m. – 11:00 a.m. Registration

Location: Atrium Lobby, Biomedical Research Building

8:30 a.m. – 9:30 a.m. “New Approaches to Cancer Treatment at Penn’s Abramson Cancer Center

Presenter: Craig Thompson, M.D. '77, Director, Abramson Cancer Center of the University of Pennsylvania

Location: Auditorium, Biomedical Research Building

8:30 a.m. – 9:30 a.m. “The Medical World — Is It Flat??

Presenter: Edward W. Holmes Jr., M.D. '67

Location: Room 251, Biomedical Research Building
Thomas Friedman’s book has made us aware of the effects of globalization on economic relationships across national

*borders. Come hear Dr. Edward Holmes, Executive Deputy Chairman of the Biomedical Research Council at the Agency for Science, Technology, and Research (A*STAR) in Singapore, discuss how medical education, biomedical research, and clinical care are experiencing the same effects.*

9:00 a.m. – 11:00 a.m. Trip to Philadelphia Zoo

For our alumni with small children! Come see America’s first zoo and the region’s foremost conservation organization with more than 1600 animals!

10:00 a.m. – 11:00 a.m. “Why We Believe What We Believe”

Presenter: Andrew Newberg, M.D. '92

Location: Auditorium, Biomedical Research Building
Where do our beliefs come from, and why do we hold on to some of them even if there is evidence to the contrary? Why, for example, do we continue to be fascinated by God, religion, haunted houses, UFOs, conspiracy theories, and miracle cures, even when science can dispute many of these claims? Is it because we are uneducated, or are our brains designed to interpret and seek out such possibilities in the world? Come hear Dr. Andrew Newberg, Director of the Center for Spirituality and the Mind, discuss in detail “why we believe what we believe.”

11:15 a.m. – 12:30 p.m. “The Ethical Challenges of Conflict of Interest in Medicine: Identifying and Managing the Issues”

Presenter: Arthur L. Caplan, Ph.D.

Location: Auditorium, Biomedical Research Building

11:15 a.m. – 12:00 p.m. A Conversation with President Amy Gutmann

Location: Jon M. Huntsman Hall, 3730 Walnut Street

12:00 p.m. – 4:00 p.m. Alumni Picnic & Parade

Location: Northeast corner of Hill Field, 33rd & Chestnut Streets

A family-friendly event for all! Join us for fun, food, and games as we celebrate the diversity of schools and alumni at the University of Pennsylvania.





Development Matters



Saturday, May 12, 2007 (continued)

3:00 p.m. – 5:00 p.m. Student-led tours of the School of Medicine

Location: Atrium Lobby, Biomedical Research Building

5:30 p.m. Class of 1946 Reunion Dinner

Location: TBD

6:00 p.m. Grand Reunion Dinner — CLASSES OF 1942, 1947, and 1952

Location: TBD

6:00 p.m. 50th Reunion Dinner — CLASS OF 1957

Location: College of Physicians
19 South 22nd Street (between Market and Chestnut Streets)

3:00 p.m. 45th Reunion Picnic — CLASS OF 1962

Location: The Home of Dr. and Mrs. Henry A. Jordan, M.D. '62
1465 Horseshoe Trail
Chester Springs, PA 19425

7:00 p.m. 40th Reunion Dinner — CLASS OF 1967

Location: State Hall, Park Hyatt at the Bellevue
Broad and Walnut Streets

7:00 p.m. 35th Reunion Dinner — CLASS OF 1972

Location: Red Hall, Park Hyatt at the Bellevue
Broad and Walnut Streets

7:00 p.m. 30th Reunion Dinner — CLASS OF 1977

Location: Clover Room, Park Hyatt at the Bellevue
Broad and Walnut Streets

7:00 p.m. 25th Reunion Dinner — CLASS OF 1982

Location: Cliveden Room, Park Hyatt at the Bellevue
Broad and Walnut Streets

7:00 p.m. 20th Reunion Dinner — CLASS OF 1987

Location: Education Center, National Liberty Museum
321 Chestnut Street

7:00 p.m. 15th Reunion Dinner — CLASS OF 1992

Location: Coming to America Room, National Liberty Museum
321 Chestnut Street

7:00 p.m. 10TH Reunion Dinner — CLASS OF 1997

Location: Liberty Hall, National Liberty Museum
321 Chestnut Street

7:00 p.m. 5th Reunion Dinner — CLASS OF 2002

Location: Voyage to Liberty, National Liberty Museum
321 Chestnut Street

Sunday, May 13, 2007

9:00 a.m. – 12:00 p.m. Breakfast and King Tutankhamun Exhibition at the Franklin Institute

Location: The Franklin Institute
222 North 20th Street



Monday, May 14, 2007

8:00 p.m. School of Medicine Commencement & Reception

Location: Kimmel Center
260 South Broad Street

For more information about Commencement, please contact the Office of Student Affairs at 215-898-7190.

ACCOMMODATIONS

For your convenience, rooms have been reserved at the hotels listed below for School of Medicine alumni. Please make your reservations directly with the hotels and identify yourself as a School of Medicine alumnus.

Park Hyatt at the Bellevue

Broad And Walnut Streets

Philadelphia, PA 19102

Tel: (215) 893-1234

\$320 per night

Rooms are being held through April 13, 2007.

Hotel Sofitel

120 South 17th Street

Philadelphia, PA 19103

Tel: (215) 569-8300

\$269 per night

Rooms are being held through April 19, 2007.



Doubletree Hotel

Broad and Locust Streets

Tel: 215-893-1600

\$219 per night

Room blocks are being held through April 12, 2007.

Loews Hotel

1200 Market Street

Tel: 215-627-1200

\$189 per night

Room blocks are being held through April 10, 2007.

Embassy Suites

1776 Ben Franklin Parkway

Tel: 215-561-1776

\$199 per night

Room blocks are being held through April 10, 2007.



THE OFFICIAL INVITATION BROCHURE WILL BE MAILED IN FEBRUARY, BUT IF YOU HAVE ANY QUESTIONS, PLEASE CALL THE OFFICE OF ALUMNI DEVELOPMENT AND ALUMNI RELATIONS AT 215-898-5164.

A SPECIAL THANK YOU

The Office of Alumni Development and Alumni Relations would like to extend a special thank you to our presenters from **Medical Alumni Weekend 2006**. Last year's festivities were a huge success, and it was due in large part to the wonderful seminars that were offered. Our deepest gratitude goes out to the alumni and faculty members below who helped make this weekend an unforgettable experience for our alumni.

Michael Aronoff, M.D. '66
Arthur Caplan, Ph.D.
Anna Rose Childress, Ph.D.
Charles Greenblatt, M.D. '56
W. Benson Harer, M.D. '56
Marcie Merz, J.D.

Gail Morrison, M.D. '71
Andrew Newberg, M.D. '92
Mehmet Oz, M.D. '86
Anthony Rostain, M.D.
Harvey Rubin, M.D.



Progress Notes

Send your progress notes to:
 Jason B. Bozzone
 Associate Director of Alumni
 Outreach and Reunions
 PENN Medicine Development
 and Alumni Relations
 3533 Market Street, Suite 750
 Philadelphia, PA 19104-3309

'40s

Joseph F. Rorke, M.D. '43, Scottsdale, Ariz., was Frank Lloyd Wright's family physician in the 1950s and was the resident physician at Taliesin, the Frank Lloyd Wright School of Architecture, until he retired in the late 1980s. He also had a private practice in Scottsdale. Since retiring, he has been a publisher and a writer of *The Whirling Arrow*, a weekly newsletter of events at Taliesin and the Frank Lloyd Wright Foundation.

Howard P. Wood, M.D. '47, Haverford, Pa., retired from psychiatry in 1988. Last summer, he published a book on orchids, *The Dendrobiums* (Timber Press), based on 50 years' experience growing and studying them. It has about 1,000 pages and 660 color photos.

'50s

Tsung O. Cheng, M.D., G.M.E. '56, Washington, D.C., professor of medicine (cardiology) at The George Washington University, moderated a seminar, "New Frontiers in CVD Management: Optimizing Outcomes in Patients with Multiple Cardiovascular Risks," in conjunction with the Vascular Biology Working Group.

Robert E. Campbell, M.D. '57, G.M.E. '59, Haverford, Pa., former chair of the Department of Radiology at Pennsylvania Hospital, received the 2006 Gold Medal Award of the American College of Radiology in May. The medal is presented for "distinguished and extraordinary service to the American College of Radiology and the profession for which it stands." Campbell is currently a clinical professor of radiology at Penn's School of Medicine and is serving as president of the College of Physicians of Philadelphia.

'60s

Spencer Foreman, M.D. '61, is president of Montefiore Medical Center in The Bronx, N.Y., which dedicated the Spencer Foreman Pavilion in September to mark his 20 years of leadership. Earlier, he was president of Sinai Hospital of Baltimore and director of the U.S. Public Health Service Hospital in Baltimore. He is a member of the boards of directors of the American Jewish Joint Distribution Committee, an international relief agency, and the Meyers-JDC-Brookdale Institute, a health and social services body that advises the government of Israel. He is also chairman of the board of Ursinus College, from which he earned his undergraduate degree.

Richard S. Weeder, M.D. '62, Lawrenceville, N.J., a surgeon and founder of the Aloha Cancer Education Institute, is the main author of *The Key to Cancer*, issued this year by Hoaloha Publishing. According to Weeder, the book's approach is to consider conventional medical treatments as well as complementary therapies. In the introduction, Weeder cites "miracle cures": "This book describes how these 'miracles' are possible for you, but from a scientific point of view and without divine intervention. The crux of the matter is that cancer is not the cause of the disease, but a symptom of an underlying problem. And, like treating a fever instead of the infection causing it, most of us have been treating only the effect (tumor), unaware that a cause lies behind it." He goes on to propose that cancer is "a lapse in the complex mechanisms of immunity, energy, and spirit that ordinarily protect us." A Fellow of the American College of Surgeons, Weeder has served as director of general surgery at Hunterdon Medical Center in Flemington, N.J., and as an assistant clinical professor of surgery at the University of Medicine and Dentistry of New Jersey. More recently, he practiced at the Straub Clinic & Hospital in Honolulu.

Robert M. Suskind, M.D. '63, has been named the founding dean of the Texas Tech University Health Sciences Center School of

Medicine at El Paso. As founding dean, he is responsible for developing a four-year accredited medical school from the present two-year regional school. Suskind also will oversee the development of a new and innovative medical curriculum, the development of research centers of excellence, and the recruitment of additional departmental chairs as well as teaching and research faculty. He joined Texas Tech from Finch University of Health Sciences/Chicago Medical School, where he was dean of the school and professor of pediatrics. Earlier, he served as chair of pediatrics at Louisiana State University Medical Center in New Orleans and chair of pediatrics at the University of South Alabama College of Medicine in Mobile.

William A. Eaton, M.D. '64, Ph.D. '67, Bethesda, Md., chief of the Laboratory of Chemical Physics at the National Institute of Diabetes and Digestive and Kidney Diseases, was elected to the National Academy of Sciences in April 2006. He was recognized for his research contributions to protein biophysics and sickle cell disease. Among his recent honors, he was named a Fellow of the American Physical Society and a Fellow of the Biophysical Society and received the Founders Award of the Biophysical Society. Eaton is also a Fellow of the American Academy of Arts and Sciences and a member of the Association of American Physicians.

'80s

Robert G. Johnson Jr., M.D. '81, Ph.D., CEO of Kosan Biosciences, has been appointed to the company's board of directors. Kosan is a biotechnology company advancing two new classes of anti-cancer agents through clinical development – Hsp90 (heat shock protein 90) inhibitors and epothilones. Before joining Kosan in 2002, Johnson was with Chiron Corporation, and he has also served as director of pharmacology at Merck & Co. He was a member of the faculty at the University of Pennsylvania from 1987 to 1991.

George H. Talbot, M.D., G.M.E. '81, was named chief medical offi-

cer and executive vice president of Cerexa Inc., a biopharmaceutical company focused on discovering, developing, and commercializing novel anti-infective therapies for the treatment of serious, antibiotic-resistant infections. A specialist in infectious diseases, he has played a major strategic role in the company's clinical development programs since their inception. Before joining Cerexa, Talbot held positions of increasing responsibility in the Anti-Infectives Division of Aventis Pharmaceuticals and its predecessor company, Rhone-Poulenc Rorer Pharmaceuticals.

Gary E. Applebaum, M.D. '85, was a candidate for the U.S. House of Representatives in the 3rd Congressional District of Maryland. Applebaum, running as a Republican, reports that he looks forward to being the first geriatrician in Congress, representing the interests of doctors and patients. Since 1989, Applebaum has been the chief medical officer at Erickson Retirement Communities, the largest developer of continuing care retirement communities in America.

Rosemary Mazanet, M.D. '86, Ph.D., has joined the board of directors of Cellumen, Inc., which focuses on the cell as an integrated and interacting network of genes, proteins, and metabolites that are responsible for normal and abnormal functions. She is CEO of Breakthrough Therapeutics, LLC, and acting CEO of Access Pharmaceuticals, Inc. Mazanet is a member of the board of PENN Medicine.

'90s

James S. Kuo, M.D. '91, M.B.A., has been appointed the non-executive chairman of the board of directors of DOR BioPharma, Inc., which concentrates on life-threatening side effects of cancer and cancer treatments, serious gastrointestinal diseases and disorders, and bioterrorism countermeasures. A director of DOR since 2004, Kuo has extensive experience in managing biotech companies, venture-capital investing, and pharmaceutical licensing. He was a founder,

president, CEO, and board director of Discovery Laboratories as well as a founder, chairman of the board, and CEO of BioMicro Systems.

OBITUARIES

William Halpern, M.D. '37, New York, N.Y.; June 3, 2000.

Paul J. Benson, M.D. '39, G.M. '46, Silver Spring, Md.; May 20, 2006.

Francis Michael Forster, M.D., G.M.E. '39, Cincinnati, Ohio; February 23, 2006.

Chester A. Bennett, M.D., G.M. '40, Bolivar, Ohio; August 25, 2002.

Henry J. Borgmeyer, M.D., G.M.E. '40, Rapid City, S.D.; March 13, 2002.

Jules H. Bogaev, M.D. '47, Bryn Mawr, Pa., a retired urologist; May 26, 2006. He took his internship at Philadelphia General Hospital and his residency at Philadelphia Naval Hospital. From 1948 to 1955, he served in the Navy and was a ship's doctor aboard an icebreaker that patrolled the Atlantic Ocean above the Arctic Circle. He then joined the practice established by his father, Harry, near Rittenhouse Square and became an instructor at Jefferson Medical College. A member of the surgical team at Jefferson Hospital that performed the region's first kidney transplant in 1963, he served briefly as acting chairman of Jefferson Medical College's urology department. In 2004, he received the Jefferson Urology Faculty Founders Award.

John M. Schwartz, M.D., G.M. '48, Durham, N.C.; April 27, 2006.

Arthur S. Dole Jr., M.D., G.M. '49, Dodge City, Kansas; June 6, 2006.

Robert A. Gould, M.D. '49, G.M.E. '53, Yardley, Pa.; June 6, 2006. He was on the staff of Mercer Medical Center in Trenton, where he served terms as chief of staff and medical director. He was a founder and officer of the Mercer Regional Medical Group. For two years, he taught pharmacology at Penn's medical school and did research on

hyperbaric oxygen therapy. During the Korean War, he served in the Army at its research laboratory in Bel Air, Md., and helped write a field manual on the treatment of nerve-gas casualties. For 25 years, while maintaining his practice, he was physician for the Morrisville, Pa., school district and was an examiner for the Federal Aviation Administration pilot certifications.

Milton Fineman, M.D. '50, Vineland, N.J.; January 1, 2006. He practiced internal medicine for 30 years in Vineland. As an infantry officer in World War II, he fought in three major battles in the South Pacific and received the Purple Heart and Bronze Star.

Harold N. Jolley, M.D., G.M.E. '50, Larkspur, Calif.; February 26, 1999.

Anne E. Keller, M.D. '51, G.M.E. '53, Rye, N.Y., a physician retired from the Pennsylvania Department of Health; June 1, 2006.

Thomas M. Runge, M.D., G.M.E. '51, Austin, Texas; April 30, 2006.

Henry A. Bullock Jr., M.D., G.M.E. '52, Richmond, Va.; July 8, 1996.

John D. Kramer, M.D. '52, Akron, Ohio; March 26, 2006. He practiced pediatric cardiology from 1962 until a few years before his death. For many years he was chief of cardiology and director of pediatric education at the Children's Hospital of Akron. When the Northeastern Ohio Universities College of Medicine was established, he was the first physician awarded full academic rank. He served as its chair of pediatrics for many years. Earlier, Kramer served with the U.S. Air Force in the Far East.

Jerome E. Levine, M.D., G.M. '52, Baton Rouge, La.; February 26, 2006.

William E. Copeland, M.D., G.M.E. '53, Columbus, Ohio; January 6, 2006.

Forrest M. Smith Jr., M.D. '53, San Antonio; May 4, 2006. He retired from his private practice as a pediatrician earlier this year after nearly half a century caring for local children. Known as "Frosty" or

"Dr. Frosty," Smith was the namesake of Dr. Smith's Diaper Ointment. When the company that made an ointment he used on his patients folded in 1963, Smith went to the owners of Royal Pharmacy and asked them to concoct a new ointment that did not contain steroids. At first, it was produced one batch at a time and placed in small tins. In the early 1990s, a decision was made to take the ointment nationwide. A version for adults, Dr. Smith's Rash-n-All, was added later to the product line. Smith recently had begun counseling children with attention deficit disorder or attention deficit hyperactivity disorder, and he was active with the John H. Wood Charter School and the Texas Justice Foundation.

Philip G. Spaeth, M.D., G.M. '53, Niceville, Fla.; June 1, 2006.

Paul H. Carstens, M.D., G.M. '54, Sarasota, Fla.; February 15, 2006.

Gordon F. Clark, M.D., G.M.E. '55, San Francisco; May 23, 2005.

Jay Alpert Cohen, M.D. '56, Ocean, N.J.; June 29, 2006.

John V. Merrick, M.D. '56, Sumner, Wash.; July 13, 2006.

Robert DeLong, M.D., G.M.E. '57, Pinellas Park, Fla.; April 2, 2003.

Peter R. Senn, M.D., G.M.E. '57, Santa Barbara, Calif.; January 23, 2006.

Francis A. Lovecchio, M.D. '58, G.M.E. '66, East Stroudsburg, Pa.; May 16, 2006.

Eugene B. Sive, M.D., G.M. '59, Santa Ana, Calif.; February 7, 1984.

James P. Fidler, M.D. '60, Cincinnati, Ohio; May 19, 2006.

Rollen A. Secor, M.D. '60, Bradenton, Fla.; June 26, 2006.

Richard J. Dobies, M.D., G.M.E. '62, Dayton, Ohio; March 16, 2006. He was retired president of Allied Eye Physicians & Surgeons, Inc.

Ernest C. Dunn Sr., M.D., G.M.E. '62, Ocean City, N.J.; June 19, 2006. After serving two years as an Army medic in Texas, he received his medical degree from Jefferson

Medical College in 1960. He moved with his family to Ocean City in 1964 and was a staff radiologist at Shore Memorial Hospital until 2003. He served 18 years on the Ocean City school board, including a stint as its president.

Capt. Fred R. Edens, M.D., G.M. '62, Johnson City, Tenn.; January 1, 2000.

Steven Y. Toth, M.D., G.M. '62, Chagrin Falls, Ohio; April 26, 2006.

James W. West, M.D. '62, G.M. '79, Yeadon, Pa.; February 1, 2006.

K. Arnold Gill Jr., M.D., G.M.E. '64, High Point, N.C.; August 20, 2005.

William Stran McCurley, M.D., G.M.E. '68, Rockville, Md.; February 4, 2006.

R. Renwick Montgomery, M.D., G.M.E. '70, Hartfield, Va.; March 27, 2006.

Joseph R. Calder Jr., M.D. '70, Williamsport, Pa.; June 6, 2006.

Ronald P. Daniele, M.D., G.M.E. '73, professor of medicine in Penn's pulmonary, allergy, and critical care division; May 5, 2006. After earning his M.D. degree from Hahnemann Medical College, he joined Penn's faculty in 1974 as assistant professor of medicine with a secondary appointment as assistant professor of pathology. In 1978 he was promoted to associate professor and in 1983 promoted to professor. That same year he earned a secondary appointment as professor of medicine in pathology and laboratory medicine that ended in 1992. On the administrative side, he had served as associate dean for research and as medical director of Pulmonary Diagnostic Services and Pulmonary Rehabilitation at HUP. His research interests included sarcoidosis, dyspnea, and cellular immune mechanisms in the lung. In 2002 he received the Robert L. Mayock/Alfred P. Fishman Teaching Award.

Nathan M. Smukler, M.D., G.M.E. '76, Glenside, Pa.; July 1, 2006.

Richard Strausbaugh, M.D., G.M.E. '84, York, Pa.; May 13, 2006. He

was a member of the American Society of Anesthesiologists, the Society of Cardiovascular Anesthesiologists, and the Pennsylvania Society of Anesthesiologists.

FACULTY DEATHS

John Paul Brady, M.D., former chair of psychiatry; June 21, 2006. He came to Penn in 1968 and was one of the pioneers who brought behavior therapy into psychiatry. According to Dwight Evans, M.D., Penn's chair of psychiatry, "Brady's early work with instrumental conditioning in people with schizophrenia was very influential." Founder of Penn's Behavioral Medicine Program, he was an early collaborator in the Penn/Veterans Affairs program in addiction research. He served as acting chair of Penn's Department of Psychiatry 1973-74, then served eight years as chair. He was named the Kenneth Appel Professor of Psychiatry in 1974. Among his publications are *Controversy in Psychiatry* (1978), edited with H. Keith Brodie, and *Psychiatry at the Crossroads* (1980), written with Brodie.

Vincent J. Cristofalo, Ph.D., Narberth, Pa., emeritus professor of biochemistry in Penn's School of Veterinary Medicine and founding director of what is now called the Institute on Aging; May 8, 2006. After earning his doctorate in physiology and biochemistry at the University of Delaware, he joined the Wistar Institute in 1963. There he studied aging at the cellular level. In 1967, he was appointed assistant professor of biochemistry at Penn's veterinary school. In 1978, he became founding director of the Center for the Study of Aging and held the position until 1990. He was credited with bringing scientists and scholars from different disciplines together to investigate the complex topic of aging. After leaving Penn, he was the Audrey Meyer Mars Professor of Gerontology and professor of pathology and laboratory medicine at Allegheny University of the Health Sciences. He was also president of the Lankenau Institute for Medical Research. A former president of both the Gerontological Society of America and

the American Federation for Aging Research, he was a Fellow of the American Association for the Advancement of Science.

Ronald P. Daniele, M.D. See Class of 1973.

Joseph Gots, Ph.D., Silver Spring, Md., emeritus professor of microbiology; April 16, 2006. After earning his Ph.D. degree in microbiology from Penn in 1949, he joined Penn's faculty as assistant professor of microbiology in medicine two years later. Promoted to professor in 1963, he became emeritus in 1987 but continued to teach until he suffered a stroke in 1993. He was known as one of the first microbiologists to study modern genetics, at a time when little was known about DNA. In 1968, he received the Lindback Award for Distinguished Teaching. According to the 1956 *Scope*, "The most remembered lecture in microbiology is John Flick and Joe Gots's annual burlesque, 'The Blood Culture.'" An accompanying photograph showed Gots drawing blood – with an umbrella ready.

Morton M. Kligerman, M.D., Philadelphia, the Henry K. Pancoast Emeritus Professor of Research Oncology; June 7, 2006. He was an early advocate for using radiation and other experimental methods for treating cancer. After earning his medical degree from Temple University and teaching there, he moved to Columbia University as assistant professor of radiology in 1950. From 1958 to 1972, he was at Yale University as chair of the Department of Radiology. During his eight years as director of the University of New Mexico Cancer Research & Treatment Center, he helped oversee experiments to attack localized tumors that were too remote for surgery or radiation by sending a stream of high-energy particles through the body and into the tumors. Kligerman came to Penn in 1980 as a professor of research oncology in the Department of Radiation Oncology. At Penn, he investigated WR-2721, a chemical agent used to mitigate damage done to surrounding body tissue during radiation treatment.



Protecting Penn's Future

Aside from each other and family, Drs. Art and Carolyn Asbury are committed to three things: neurology, philanthropy, and Penn. Carolyn is a senior consultant for the Dana Foundation, an organization that provides research grants for neuroscience and immunology. After earning a master's degree in public health, she received her Ph.D. degree from the Wharton School. Art is the Ruth Wagner Van Meter and J. Ray Van Meter Emeritus Professor of Neurology and, with Carolyn, is a longtime advocate and supporter of Penn's scholarship aid and faculty giving programs. A former chair of the Department of Neurology, he served seven years as a vice dean for the School of Medicine and has twice served as its interim dean.

Their devotion to Penn and to the Department of Neurology, as well as their philanthropic interest and savvy, recently led them to craft a gift that earmarks the bulk of their residual TIAA-CREF plans to go towards establishing the Asbury Professorship in Neurology. They have long understood both the severe tax consequences of leaving such assets to non-charitable beneficiaries and the good use to which those assets can be put at not-for-profit organizations like PENN Medicine. It was this understanding that initially led Art to take a leadership role in the seminars for faculty on estate planning.

Art and Carolyn intend for their gift to help spur further growth and progress, by enabling neurologists to spend more time teaching and conducting research, free of financial pressures common to academic medicine. "If all efforts must be directed toward generating revenue from patient care, then the other two missions of the School – research and education – will atrophy, and we never want to see that happen," says Art.

The benefit of this support is made clear to Carolyn every day at the Dana Foundation. "Being in philanthropy and trying to design grant programs, I see how important it is for young people to have the opportunity to develop skills in clinical research," she says.

Their past philanthropy – giving to the 21st Century Scholarship Fund and creating the Arthur K. and Carolyn H. Asbury Endowed Scholarship – demonstrates their awareness of the crucial need for scholarship aid. Students, they believe, should be able to choose their pathways according to their interests and aptitudes.

"We have a tremendous regard for this institution and the opportunities it provides," adds Carolyn.

The Asburys' gift enables them to put the full value of their residual retirement assets to work for PENN Medicine and avoid the significant estate and income taxes. As you chart your financial future, the Planned Giving Office is ready to assist in developing a strategy appropriate for you. Contact Marcie Merz, J.D., Senior Director of Planned Giving, at: PENN Medicine, 3535 Market Street, Suite 750, Philadelphia, PA 19104-3309; or phone (215) 898-9486; or e-mail: mmerz@ben.dev.upenn.edu.

Proton Therapy: Part of the Plan

Any moment when one can glimpse the future is very exciting. When the future promises to be a greatly enhanced prospect for some of our sickest patients, it is even more exciting and satisfying.

That was the situation in December when PENN Medicine held a reception to celebrate the naming of the Roberts Proton Therapy Center. The namesakes in this case are Ralph J. Roberts and his son, Brian L. Roberts, who have pledged \$15 million to help create an innovative proton therapy center to treat cancer. At the reception, I expressed my appreciation to them for their extraordinary vision and generosity. Both the City of Philadelphia and the broadcast industry as a whole have benefited immeasurably from the influence of Ralph Roberts (Wharton '41), founder and former chairman of Comcast Corporation, and Brian Roberts (Wharton '81), chairman and CEO of Comcast. Now it will be our cancer patients who also will benefit greatly from their generosity.

As you can read in the "Vital Signs" section of this issue, proton therapy is the most precise form of advanced radiation therapy available. For the patient, it results in fewer side effects and clinical complications; for the physician, it enhances the ability to treat tumors close to critical organs and the spinal cord.

In addition to several treatment rooms that will provide the most advanced options available for positioning the patient with the least discomfort, the new Center will have a separate research room. Ours will be the largest such facility in the world.

The Roberts Proton Therapy Center is scheduled to open for patients in 2009. But as we look forward, I also want to take a brief look back. Four years ago, we completed a detailed strategic plan that was the result of an exhaustive process involving our faculty, administrators, and Board of Trustees. The "Plan for PENN Medicine" has guided us to this point – and will continue to guide us into the future.

Robert Clink



The seeds of several recent developments can be found in the plan.

The overall vision for our Health System, as the plan states, "is to create a strong tertiary referral center, based around a core academic medical campus, and integrating excellent clinical programs and facilities with leading-edge clinical research that will support the delivery of the most innovative treatments and procedures." As the plan goes on to say, "A priority of this strategic plan will be to fully leverage PENN Medicine's research capabilities to distinguish UPHS's signature service lines in the marketplace." With the Roberts Proton Therapy Center, we will be bringing our research strengths and our clinical strengths together. Currently, there are five other proton therapy facilities in the country that are able to do some of what our Center will do. But ours will be the only center with a robust research enterprise that will draw from an extensive, varied, and highly respected group of investigators. What we learn from treating our patients will then bolster the use of proton therapy for everyone using this technology.

It is no coincidence that the clinical section of the Abramson Cancer Center of the University of Pennsylvania will be situated next to the Roberts Proton Therapy Center. The Cancer Center will occupy space in the Raymond and Ruth Perelman Center for Advanced Medicine, expected

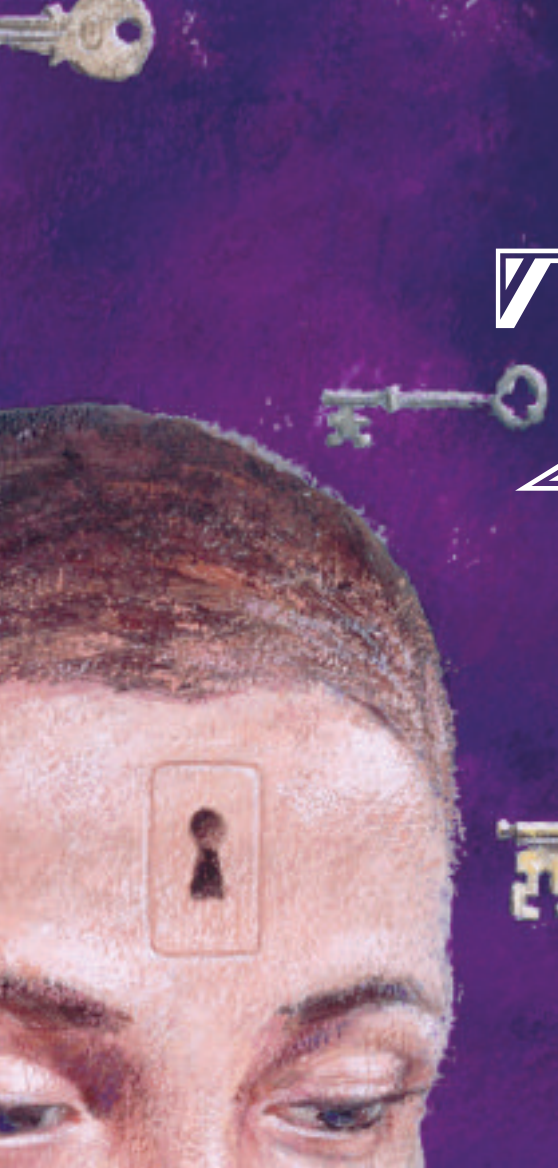
to open in 2008. Here again our strategic plan set the stage, articulating the many benefits of such a Center for Advanced Medicine: "A new ambulatory care facility with a strong cancer center core will result in significant gains in patient volume, quality of care, operational flow, physician recruitment and retention, patient service, image, and satisfaction." The proximity of centers will allow us to treat patients in a seamless way, which will benefit not only the patients but our clinicians and researchers.

An eternal truth of academic medical centers is that they always need more research space. That is certainly true of PENN Medicine. In fact, the original estimates in our strategic plan called for the highest single investment of funds for the ambulatory care/cancer center – but the next highest would be for research, including new space, faculty recruitment and retention, the improvement of our core infrastructures, and other commitments. To that end, we are now developing feasibility plans for a new building for research and vivarium space.

Another important goal called for in our strategic plan was to strengthen translational and patient-oriented research. So far, we have made significant progress in that direction. Two years ago, we announced the creation of three interdisciplinary research institutes, one of them being the Institute for Translational Medicine and Therapeutics. That institute, like the other two, is flourishing. Indeed, its success was one of the reasons Penn recently was able to win a major grant from the N.I.H., a Clinical and Translational Science Award (described in "Vital Signs").

In the years ahead, we will continue to look to our strategic plan for ways to confirm PENN Medicine's place among the most innovative and successful institutions in academic medicine. ■

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



Three of Penn's schools were prominently involved in an initiative to gather the latest information about adolescent mental health. In all, nearly 150 experts in a variety of fields and from around the country helped evaluate what we know – and *don't* know – about this important topic. The results include a massive book for specialists, a series of books for parents, and a series for teens with mental illnesses.

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