The University of Pittsburgh announced Sept. 22 that well-known and highly respected business leader, investor, author, and philanthropist William S. Dietrich II plans to make an historic gift of a $125 million fund in support of the University. This is the largest individual gift to Pitt in its 225-year history and is one of the 10 largest gifts made by an individual to a public university in the United States. The fund will become operational upon Mr. Dietrich’s passing.

Mr. Dietrich earned both his M.A. and his Ph.D. in political science from the University of Pittsburgh. He has been a member of Pitt’s Board of Trustees since 1991 and served as the Board’s chairperson from 2001 to 2003. He also has served as the chair of the Board’s Audit, Investment, and Conflict of Interest committees.

In announcing this historic gift, University Chancellor Mark A. Nordenberg stated, “While this has been a rather closely held secret, those already aware of this gift have been overwhelmed by the magnitude of Bill Dietrich’s generosity, and beginning today, the feelings of excitement and gratitude that his gift has triggered will spread far more broadly. There also is something special about receiving such an extraordinary gift from one of Pitt’s favorite people. Speaking personally, it has been both a good friend and an inspiring role model to me. Within our Board he is known for his focused commitment to academic excellence, and within the broader community of business and civic leaders, he is known as a person who will tirelessly undertake virtually any assignment if it will contribute to the betterment of our home region.”

In commenting on this gift, Mr. Dietrich said, “I am making this investment in the University of Pittsburgh for a number of reasons. As a graduate who personally benefitted from my own studies at Pitt, I want to ensure that the University can continue to provide educational opportunities of the highest quality to its undergraduate and graduate students. As a citizen of Southwestern Pennsylvania, I want to help secure the future of one of this region’s most important institutions and hope that this gift will encourage others to join with me in supporting the University. And as someone who has seen Pitt’s transformation into a national and international force in higher education from the special vantage point of a Trustee, I want to recognize the extraordinary progress that has been made by the University, particularly during Mark Nordenberg’s 16-year tenure as Chancellor.”

—William S. Dietrich II

In recognition of this gift, a resolution will be introduced at the Oct. 28 meeting of Pitt’s Board of Trustees to name the University’s School of Arts and Sciences in honor of Mr. Dietrich’s father.

The School of Arts and Sciences in honor of Mr. Dietrich’s father.

The School of Arts and Sciences sits at the heart of the University’s academic programs and provides instruction in the natural sciences, humanities, and social sciences for all students studying on the University’s Pittsburgh campus. This includes more than 10,000 undergraduate students pursuing majors or certificates in the nearly 50 departments and programs of the School. The School also is home to the largest graduate program in Pittsburgh and to Pitt’s College of General Studies, one of the region’s leading providers of adult education programs.

The many distinguished graduates of the School include:

**Herman W. Boyer**, who earned M.S. and Ph.D. degrees in the biological sciences from the School and went on to receive numerous national and international awards for his pioneering work in gene therapy, including both the 1989 National Medal of Technology and the 1990 National Medal of Science;

**Michael W. Chabon**, who earned his B.A. in English Writing from the School and, among many honors for his works, received the 2001 Pulitzer Prize in Fiction for his novel *The Amazing Adventures of Kavalier & Clay*;

**Paul C. Lauterbur**, who earned his Ph.D. in chemistry from the School and received the 2003 Nobel Prize in Medicine for his contributions to the development of magnetic resonance imaging;

**Wangari Muta Maathai**, who earned her M.S. in the biological sciences from the School and was awarded the 2004 Nobel Peace Prize for her environmental and human rights work in her native Kenya; and

**Bert W. O’Malley**, who earned his B.S. from the School, in addition to his M.D. from Pitt’s School of Medicine, and received the 2007 National Medal of Science in recognition of his work as the “father” of molecular endocrinology.

The School is home to many departments and programs of distinction. Faculty of the School regularly receive the highest forms of national and international recognition, and its students regularly compete with the strongest students from the country’s finest universities for the highest national honors.

In praise of Mr. Dietrich for his support, N. John Cooper, the Bettye J. and Ralph E. Bailey Dean of Arts and Sciences at Pitt, said, “The arts and sciences are at the core of any great contemporary university. This transformative gift from Mr. Dietrich will let us advance our goal of being a world-recognized center for the generation of knowledge by our faculty, within and across disciplines, and for transmitting that knowledge to succeeding generations of undergraduates and graduate students.”

Continued on page 4
Pitt Gets $3.54 Million Bioengineering Grant from the Coulter Foundation

By Lynn Shea

The Swanson School of Engineering at the University of Pittsburgh has received a $3.54 million grant from the Wallace H. Coulter Foundation. Pitt is one of only five universities nationwide to receive the foundation’s Coulter Translational Partnership II Award; the five-year grant to the Swanson School of Engineering will fund research that employs engineering techniques to develop improvements in health care, with the ultimate goal of accelerating the introduction of new technologies into patient care.

The award from the Coulter Foundation will be supplemented by $1.5 million in matching funds from the Pitt School of Medicine, the Swanson School, and the University’s Office of Technology Management.

“We are thrilled to have been chosen to receive this award and participate in the Coulter Foundation program. Not only will it be of tremendous benefit to the individual researchers who receive funding, but it affirms both the growing prominence and future potential of Pitt’s bioengineering program,” said Gerald D. Holder, Pitt’s U.S. Steel Dean of Engineering.

Harvey Borovetz, chair of the Department of Bioengineering, the Robert L. Hardt Esty Professor in the School of Medicine’s Department of Surgery, and deputy director of the Artificial Organs and Medical Devices division of the Pitt-UPMC McGowan Institute for Regenerative Medicine, will be the principal investigator and one of three co-leaders for the Coulter program at Pitt.

The other members of the leadership team for the Coulter program at Pitt are Stephen Badyak, a professor in the School of Medicine’s Department of Surgery and director of tissue engineering in the McGowan Institute for Regenerative Medicine, and Marc Malandro, director of the Office of Technology Management and associate vice chancellor for technology management and commercialization at Pitt.

Pratap Khanvilkar will serve as the Coulter Program Director and Visiting Professor in the Swanson School’s bioengineering department and as Executive-in-Residence in the University’s Office of Technology Management.

Khanvilkar, who has studied, taught, and conducted research at the University of Utah for 15 years, currently is an adjunct professor in its Department of Bioengineering, is the founder of six medical device product/service companies. In a uniquely fashioned, multifaceted position, Khanvilkar has been hired to guide the development of appropriate projects to be undertaken by Pitt researchers; ensure that they are properly vetted by a Coulter oversight committee; and facilitate the progress of scientific and technological development as a bridge between intellectual property, and developing spin-off companies.

Among his more personally pleased to have been chosen to receive this award because the University has demonstrated not only its ability to form strong interdisciplinary teams but also the passion for translational research through clinical application,” Borovetz said.

Another significant determinant was the strength of the relationships the foundation has had with both individuals like Borovetz and the researchers whom the foundation already supports through the Coulter Translational Research Awards program for individual investigators.

The $3.54 million award made to Pitt as part of a second phase of program development from the Coulter Foundation, Translational partnership awards through the first program development phase were made in 2005 to two U.S. universities. The $40 million awarded by Coulter in that first phase has resulted in an additional $300 million in investments to further the development and market applications of the various projects initiated as a result of the nine Coulter-funded programs.

The Coulter Foundation and six universities in the first phase established $20,000,000 funds at each school to continue the program. Half of the funds were contributed by the Coulter Foundation and each school raised the remainder.

The foundation used feedback it sought from universities that received funding in the first phase of the program to adopt a more formal procedure, dubbed the “Coulter Process,” which they believe will yield even richer technology transfers of new products, applications, materials, and/or services to the medical community.

The Coulter Process allows for a one-year startup period, during which the five-year program will be established on campus by the Pitt program’s leadership team.

“The research funded by this generous award, the University’s bioengineering faculty members are pleased to partner with the Coulter Foundation in working to fulfill the mission of Wallace Coulter as expressed in his company’s motto, ‘Science Serving Humanity,’” Borovetz stated.

Bioengineering is the application of engineering principles to analyze, design, and manufacture tools, structures, and processes to solve problems in the life sciences. Successful patient-focused and commercialization-oriented collaborations between engineers and physicians who traditionally employ differing methodologies are critical to the burgeoning field and to regional economic development.

Pitt’s Department of Bioengineering, which was established in 1998 as part of the

Pitt Admissions and Financial Aid Director Betsy Porter To Retire June 30, 2012

By John Fedele

Betsy Porter, director of the University of Pittsburgh’s Office of Admissions and Financial Aid, will retire June 30, 2012. Pitt Provost and Senior Vice Chancellor Patricia E. Beeson announced. At the helm of Pitt’s student recruitment efforts since 1986, Porter is widely credited with elevating the University’s status through her shaping of Pitt’s undergraduate student population.

Among Porter’s many accomplishments are a threefold increase in the number of applicants to the Pittsburgh campus, a 170-point surge in incoming freshmen’s average SAT scores, the near tripling of freshmen enrolled who were in the top 10 percent of their high school classes, and enhancing the diversity of the student body.

“Demand for admission to Pitt’s programs has grown dramatically during Dr. Porter’s leadership as director of Admissions and Financial Aid, as has the academic strength displayed by newly enrolled students,” said Pitt Chancellor Mark A. Nordenberg. “For two-and-a-half decades, Dr. Porter has consistently recruited outstanding Pitt freshman classes, and we always will be grateful for her substantial contribution to the University’s unparalleled progress in recent years.”

“It is difficult to think of a single individual who has done more than Betsy to shape the profile of the undergraduate student population on the Pittsburg campus, thereby elevating the University’s reputation across the state and the nation,” said Beeson.

Porter joined the University in 1978 as senior associate director of the Office of Admissions and Financial Aid; prior to that, she served as associate director of admissions at Duquesne University, from 1970 to 1978.

Porter’s many accomplishments at Pitt include successfully integrating admissions and financial aid into a single, efficient operation. When faced with a demographic decline in the number of high school graduates in Pennsylvania during the 1980s through the early 1990s and again beginning in 2004, she also successfully implemented a strategic recruiting plan that has resulted in increasingly diverse, strong, and well-prepared freshman classes.

Under her stewardship, the Office of Admissions and Financial Aid has awarded and disbursed for the 2010-11 academic year more than $290 million in financial aid—including federal, state, institutional, and private sources—while maintaining compliance with ever-changing federal, state, and institutional regulations and policies.
University of Pittsburgh School of Medicine faculty member Elodie Ghedin, a parasitologist and virologist, and Pitt alumnus Kevin Guskiewicz (EDUC ’92G), a sports medicine scholar at the University of North Carolina, have each been named a 2011 MacArthur Fellow, a prestigious honor that carries an award of $500,000 in unrestricted support for each recipient. The fellowships, given annually by the John D. and Catherine T. MacArthur Foundation, are awarded for exceptional creativity and the promise for future accomplishments that will benefit human society. In 1996, University of Pittsburgh alumnus and trustee William E. Strickland Jr. (CAS ’90) was named a MacArthur Fellow for his role as an arts educator and the head of two innovative Pittsburgh learning communities, the Manchester Craftsman’s Guild and the Bidwell Training Center.

Although Ghedin and Guskiewicz are two of only 22 MacArthur fellowship recipients selected nationwide this year, they are not strangers to each other’s work. “Beyond this extraordinary recognition and honor for Dr. Ghedin, our medical school takes great pride in her ‘Genius’ award. Elodie has used and further developed the most powerful genetic and analytic tools available to explore the mechanisms which parasites employ to sicken and often kill large numbers of people afflicted with such dread infectious diseases as sleeping sickness, leishmaniasis, Chagas disease, and filariasis.” —Arthur S. Levine

Ghedin is an assistant professor in the School of Medicine’s Department of Computational and Systems Biology. She is also a member of the University’s Center for Vaccine Research. She was a postdoctoral fellow at the National Institute of Allergy and Infectious Diseases (1998-2000) and led the Viral Genomics group at the Institute for Genomic Research (2000-06) prior to her appointment to the faculty of the University of Pittsburgh. Her scientific articles have appeared in such publications as the Journal of Virology, Science, and Nature. She received a BS from McGill University in 1989, an MS from Université du Québec à Montréal in 1993, and a PhD from McGill University in 1998. “I’m stunned and excited,” Ghedin said. “With this award, I will expand on my parasitology work, specifically the organism that causes elephantiasis. I also hope to explore new avenues in the evolution of RNA viruses other than influenza.”

School of Medicine Dean Arthur S. Levine, Pitt’s senior vice chancellor for the health sciences, said, “Beyond this extraordinary recognition and honor for Dr. Ghedin, our medical school takes great pride in her ‘Genius’ award. Elodie has used and further developed the most powerful genetic and analytic tools available to explore the mechanisms which parasites employ to sicken and often kill large numbers of people afflicted with such dread infectious diseases as sleeping sickness, leishmaniasis, Chagas disease, and filariasis. Closer to home, Dr. Ghedin is applying similar methods to increase our understanding of the epidemiology of influenza and making vaccines against it easier and more effective. Her work on DNA viruses is unique in having applied the most powerful molecular and computational tools to the study of infectious diseases, which wreak havoc in the lives of millions, and with the results of these studies, Elodie is pointing the way to likely targets for drug and vaccine development.”

Guskiewicz is Kenan Distinguished Professor and chair of the Department of Exercise and Sport Science at the University of North Carolina, where he is also founding director of the Matthew Gfeller Sport-Related Traumatic Brain Injury Research Center and research director of the Center for the Study of Retired Athletes. He has been with the University of North Carolina since 1995. He received a BS from West Chester University in 1989, an MS from the University of Iowa in 1992, and a PhD from the University of Virginia in 1995. “Being selected a MacArthur Fellow is a tremendous honor for me, my family, and my colleagues,” said Guskiewicz. “Our success has been a result of developing a strong research team, with common goals in mind. Concussion is a very complex injury. Managing this injury effectively is sort of like piecing together a puzzle. Piece by piece, we gain a clearer picture of concussion and its severity, he said. “As scientists, coaches, administrators, and doctors, we bear the responsibility of keeping our athletes safe.”

Additional information about Ghedin and Guskiewicz provided by the MacArthur Foundation.

Elodie Ghedin is a biomedical researcher who is harnessing the power of genetic sequencing techniques into critical insights about human pathogens. Although the technology for obtaining nucleotide sequence data continues to accelerate, the labor-intensive task of analyzing and annotating the resulting data—for example, identifying genes, their functions, and their expression; determining the arrangement of genes within the genome; performing phylogenetic and functional comparisons with other known species—often lays behind.

Ghedin has established herself as a leader of international projects that coordinate the efforts of scores of scientists to decode the function of some of the most virulent human pathogens. A major focus of her work has been parasites that cause diseases endemic to tropical climates, such as leishmaniasis, sleeping sickness, Chagas disease, elephantiasis, and river blindness. Through her direct research and mobilization of global scientific collaborations, Ghedin’s work illuminates the similarities and differences in the molecular physiology of the various parasites, with important implications for targets for drug development.

Ghedin and her colleagues are also applying similar approaches to understanding viruses that infect humans. RNA viruses such as HIV and influenza mutate particularly rapidly, making vaccine development particularly difficult. In a high-resolution study of complete genome sequences of influenza A viruses from more than 200 different isolates, Ghedin has shown that the virus evolves with surprising rapidity and can jump between species. Her work illuminates the evolutionary dynamics of this virus across the geographic region. Through her contributions to parasitology and virology, Ghedin demonstrates that molecular genetics not only is essential for exploring the basic biology of pathogens but also represents a powerful tool in the hands of scientists working in coordination to improve public health across the globe.

Kevin Guskiewicz is a researcher and athletic trainer who has had a wide range of experiences in the diagnosis, treatment, and prevention of sports-related concussions. Each year, approximately 3.8 million athletes in the United States experience mild traumatic brain injuries, or concussions. Through a combination of translational and on-the-field research, Guskiewicz has played an important role in raising awareness about the prevalence and dangers of sports-related brain injuries in both professional and youth athletics.

Guskiewicz was among the first to identify the long-term effects of multiple concussions, including cognitive impairment and depression in later life, through large-scale epidemiological studies of retired professional football players. Recognizing the inadequacy of the conventional diagnosis and concussive screening tools—most rely solely on an athlete’s self-report of symptoms—Guskiewicz demonstrated that postural control, or balance, serves especially well as an objective measure in the evaluation of concussive episodes. His portable and cost-effective Balance Error Scoring System is now widely used by athletic trainers at colleges and secondary schools to diagnose and manage injury more accurately and immediately.

Guskiewicz’s recent work focuses on the cumulative effects of repetitive, sub-threshold brain impacts. Using accelerometers embedded in the helmets of college football and youth hockey players, he and colleagues are investigating the relationship between magnitude and number of head impacts and clinical symptoms of concussion. Taking this research a step further, he is working directly with college football players and coaches to identify dangerous hits in real time and to correct improper tackling techniques associated with sustaining concussions.

About the MacArthur Fellows Program

The MacArthur Fellows Program is intended to encourage people of outstanding talent, young as well as established, across the full spectrum of natural and social sciences, and the arts to pursue their own creative, intellectual inclinations. In keeping with this purpose, the foundation awards fellowships directly to individuals rather than through institutions. Recipients may be writers, scientists, artists, social scientists,
Pitt to Receive $125 Million Gift From Dietrich

4

the Provost's Award for Financial Aid received Universitywide Athletic Admissions and Financial aid rates. Porter also and services and have offerings, programs, shape policies that have Deans and Enrollment University’s Council of requests. than 20,000 financial aid

Continued from page 2

To Retire June 30, 2012

Pitt Admissions and Financial Director Betsy Porter to June 30, 2012

Continued from page 2

Each year, Porter and her staff review and process more than 25,000 applications for undergraduate admission and more than 20,000 financial aid requests.

As a member of the University’s Council of Deans and Enrollment Management Committee, Porter has helped shape policies that have improved Pitt’s undergraduate educational offerings, programs, and services and have increased student satisfaction, retention, and graduation rates. Porter has served as a member of the Senate Council on Admissions and Financial Aid Committee and the Universitywide Athletic Compliance Committee.

Porter’s service to the University was recognized in 2008, when the Office of Admissions and Financial Aid received the Provost’s Award for Service Excellence.

In 2008, she received the University of Pittsburgh African American Alumni Council Sankofa Award for outstanding student support. Her other awards include the Gold Echo Award for Creativity from the Direct Mail Marketing Association and the National Association of College Admission Counselors Editor’s Award. Porter is a member of a dozen professional associations, including the College Board and ACT. She served on the Middle States Regional Council of the College Board and chaired the Pennsylvania ACT Council Executive Committee.

Porter earned her PhD in higher education administration from Pitt in 1984, her MEd in guidance counseling from Duquesne in 1970, and her BA in elementary education from the University of Charleston in 1969.

A search committee will be formed in the coming weeks to identify Porter’s successor by Spring 2012.

The arts and sciences are at the core of any great contemporary university. This transformative gift from Mr. Dietrich will let us advance our goal of being a world-recognized center for the generation of knowledge by our faculty, within and across disciplines, and for transmitting that knowledge to succeeding generations of undergraduates and graduate students.”

Continued from page 1

In 1960, Mr. Dietrich served in the U.S. Marine Corps Reserve before joining Dietrich Industries, Inc., the company founded by his father. Mr. Dietrich assumed responsibility for the day-to-day operations of the company in the mid-1960’s and in the process transformed Dietrich Industries from a small steel warehouse and distributor to become the nation’s largest manufacturer of light metal framing for the construction industry. In 1996, Worthington Industries bought Dietrich Industries and asked Mr. Dietrich to remain as a director, a position he held until his retirement in 2008.

It was while he was leading Dietrich Industries through a period of steady growth that Mr. Dietrich earned his graduate degrees from the University. A student of both history and international economics, he is a regular contributor to the Pittsburgh Quarterly. Mr. Dietrich also is the author of two books: In the Shadow of the Rising Sun: The Political Roots of American Economic Decline, published in 1991 by the Penn State University Press, and Eminent Pittsburghers: Profiles of the City’s Founding Industrialists, a collection of biographical essays, published in 2011 by Taylor Trade Publishing. He is currently working on a third book, American Recessional: The U.S. Economy and the Rise of China.

Mr. Dietrich is well known for his wide-ranging civic commitments. In addition to his service on the University of Pittsburgh Board of Trustees, he has served on the Board of Carnegie Mellon University, the Carnegie Museum of Art, the Chatham University Community Development, Chatham University, the Pittsburgh Ballet Theatre, the Pittsburgh Symphony Society, the Southwestern Pennsylvania Growth Alliance, the UPMC Health System, and the Greater Pittsburgh Council of the Boy Scouts of America. Current Pitt Board Chair Stephen R. Trifich noted, “Bill is an Eagle Scout and has often stated that Scouting had a positive impact on his life. Certainly, that is seen in his unwaveringfulness to lend a helping hand to others, through his philanthropy and through the many community leadership responsibilities he has discharged so effectively.

The mark of Mr. Dietrich’s life will be his exceptional, and exceptionally well-targeted, philanthropy. The source of the funds that will benefit the University of Pittsburgh is The Dietrich Charitable Trusts, which are charitable remainder trusts created by Mr. Dietrich that own assets principally generated by the 1996 sale of Dietrich Industries. It is anticipated that upon Mr. Dietrich’s passing, the assets of these trusts will fund a new charitable organization, The Dietrich Foundation, which will administer the fund benefiting Pitt.

Abbie Menkes

Born on June 17, 1907, Kenneth P. Dietrich married Marianna Brown in 1933. The two had met while enrolled as students at Thiel College in Greenville, Pa. The couple began their lives together in Pittsburgh and had two children, William and Linda.

Ken Dietrich started his career at Dietrich Company. After two years as a salesman, he was rapidly promoted to merchandising manager, one of the top

Continued from page 2

Pitt Gets $3.54 Million Coulter Grant

The Department of Bioengineering is currently developing a new Center for Medical Innovation (CMI), which will collaborate with the Coulter Translational Partnership Program to define early-stage, innovative medical technologies and to promote their commercialization. CMI also has an educational mission to develop the next generation of medical product innovators through the cooperative efforts of the Swanson School of Engineering and the Schools of the Health Sciences, Business, and Law.

Although the Coulter award will enable some of Pitt’s most accomplished scientists to conduct leading-edge research, the majority of the University’s most-advanced and best-equipped laboratories, the awards were made available in large part by a donation that was made in far less sophisticated surroundings by a young inventor who was unable to complete his education because of the hardships of the Great Depression. Wallace H. Coulter (1913-1998) may not be a name widely recognized as those of Thomas Edison, Marie Curie, or Jonas Salk, but, like these more famous innovators, Coulter and the Coulter® Principle he developed made wide-reaching contributions to modern medicine, science, and industry. The Coulter Principle was discovered in the 1940’s, when the supply of paint for an experiment Coulter was conducting in his garage laboratory had frozen, and Coulter was able to substitute his own blood for the paint because the two substances had similar viscosity. Coulter’s experiment used electronic impedance to count and size microscopic particles suspended in fluid. This technique led to the development of the Coulter Counter. The latter device replaced the laborious prac- tice of manually counting blood cells and was the first of many such instruments used in a wide range of appli- cations, including a complete blood count or “CBC,” which is the most commonly ordered test in the world today.

Coulter’s technique is also being used for analyzing different blood components as well as determining the quality of many consumer items, including paints and more recently, and assessing the purity of NASA’s jet fuel. The invention, one of 82 Coulter would showcase during his lifetime, was manu- factured and sold by Coulter Electronics, an international company based in Miami, Fla., and Coulter Health Coulter would use to establish the Wallace H. Coulter Foundation before his death. The recipient of the John H. Henry award in 1960 and a 1998 inductee into the National Academy of Engineering, Coulter was posthumously inducted into the National Inventors Hall of Fame in 2004.
Call for Nominations for Pitt’s Bellet Awards, Ampco-Pittsburgh Prize

The University of Pittsburgh School of Arts and Sciences will accept nominations for the Joseph M. Katz Graduate School of Business of Pitt's Pittsburgh campus.

**To qualify for the award, nominees must be full-time undergraduate Arts and Sciences faculty who have taught for three years on Pitt's Pittsburgh campus. Applicants must receive at least three nominations to be considered for the award.**

To find out more about Pitt’s Bellet Awards or to submit a nomination, visit www.as.pitt.edu/teaching/awards.html.

UPMC Health Plan Offers Free Flu Shots to Pitt Faculty, Staff in Oakland

Pitt faculty and staff who subscribe to the UPMC Health Plan can receive free flu shots at select Pittsburgh campus locations through Nov. 1.

Shots are available from:
- 10 a.m.-2 p.m. Oct. 12, 102 Benedum Hall;
- 10 a.m.-2 p.m. Oct. 10, 102 Benedum Hall;
- 10 a.m.-2 p.m. Oct. 12, 5th-floor conference room, Bridgeside Point Building;
- Noon-2 p.m. Nov. 1, 342 Craig Hall.

Additionally, Falk Pharmacy will offer the shots from 9 a.m. to 3 p.m. on Tuesdays and Thursdays through Dec. 22 on the second floor of the Falk Medical Building.

Flu season can start as early as October and last until May, packing in January and February, according to the U.S. Centers for Disease Control and Prevention (CDC). The CDC recommends a yearly flu vaccine as an important step in protecting against flu viruses.

—By Kerry Byrnes
Pitt Is Lead University on $1.8 Million Grant To Help Transform Computing

Levy-Led Lab’s Tiny Etch-A-Sketch® Is Key to Research

By Karen Hoffmnan

Could Pittsburgh be the nation’s next “Silicon Valley”? The University of Pittsburgh is the lead institution on a $1.8 million grant from the National Science Foundation and the Nanoelectronics Research Initiative (NRI) of the Semiconductor Research Corporation (SRC) to bring a new kind of transistor out of the lab and into the real world. The goal of the group, led by Jeremy Levy, a professor of physics and astronomy in Pitt’s School of Arts and Sciences, is no less than transforming the way computing is done.

The four-year, titled “Scalable Sensing, Storage, and Computation With a Rewritable Oxide Nanoelectronics Platform,” also involves researchers from the University of Wisconsin and Northwestern University. The program aims to create new high-tech industries and jobs in the United States.

“The search for a new semiconductor device that will provide the United States with a leadership position in the global era of nanoelectronics relies on making discoveries at these kinds of advanced universities,” said Jeff Welser, director of the NRI for SRC.

From Etch-A-Sketch® to Tiny Transistors

Levy and his team have invented a tiny Etch-A-Sketch® that draws infinitesimally small “wires” on a surface, then erases them. The device works by switching an oxide crystal between insulating and conducting states. The interface between these two materials can be switched between an insulating and metallic state using a sharp conducting probe. Electronic circuits can be “written” and “erased” at scales approaching the distance between atoms (two nanometers). The device, less than a nanometer wide, enables photonic integration in quantum objects as small as single molecules or quantum dots.

This research grant explicitly addresses key scientific and technological challenges that, if overcome, could lead the “Etch-A-Sketch®” into something real and useful—from being just a toy in a science lab to a possible replacement for conventional electronics made from silicon devices.

Beyond being just plain cool, this device could be the basis of an entirely new kind of transistor.

Transistors in a computer are the on/off switches that enable the efficient implementation of complex computational systems. And for the last half century, they’ve been getting smaller and smaller, according to (Intel founder Gordon) “Moore’s law.” The number of transistors that can be placed inexpensively on an integrated circuit doubles approximately every two years. Some point, though, the trend has to stop. Materials start acting “weird” when they are made too small. The useful properties of silicon, for example, are believed to break down at distances smaller than 10 nanometers.

“The question is, once you’ve pushed silicon to its limit, is there going to be another system to do computation?” asks Levy.

That’s really what we’ve been granted funding to explore. We’re trying to break down the major barriers that are potential show-stoppers that would otherwise make it difficult to turn these new kinds of devices into real, useful things.”

In 2008, Levy and colleagues reported in Science that they had made a transistor with elements that were five interatomic distances wide. “These are really, really small transistors,” Levy emphasizes. “We believe that they behave in fundamentally different way from normal transistors.”

To develop useful electronics, it is imperative to develop a scheme capable of creating and manipulating large numbers of devices. If it takes a minute to make a transistor, it would take a year to make a billion of them. This scaling is achieved through the use of large probe arrays.

Levy uses an atomic force microscope, a specialized instrument that moves a probe and along a surface, to create the transistors. Another method, used by Chad Mirkin at Northwestern University, has developed ways of producing millions of such tips on a single wafer. The idea is to do parallel writing—to have all of these tips in a single plane, each of which can “write” or “erase” information. This new technology is key to making and using the new devices.

Different tips working in parallel,” says Levy. That way, manufacturing takes a few minutes instead of a year.

New Materials, New Ways of Sensing

How today’s computers process information depends on a fixed architecture of ones and zeros—digital logic. Levy envisions using new materials that might not follow that same architecture. “We want the material to tell us the best way it can do computation, rather than trying to impose an architecture that was built for another type of material,” he says. “We want to listen to the material and then map information processing onto what it’s good at.”

Professors Mark Rozenski and Jack Ma at the University of Wisconsin will focus on this issue. They believe that the materials they will be working with are part of a family known as “complex oxides.” This class of materials shares many of the semiconductor properties of silicon but has a wealth of other properties that make the material interesting for computing, storage and sensing applications.

All computers require storage, but they store this information using very different architectures than the computer parts. In addition, an array of functions of electronics is that semiconductors can be used for sensing, and in this case really means sensing of light.

We want to try to integrate all of these things together and have a platform that allows us to ‘write’ or ‘erase’ components capable of all of these functions,” Levy says.

The principal material the researchers wish to study is a sandwich of two such oxides: a thick layer of strontium titanate, with a thin (1.2 nanometer) layer of lanthanum aluminate. These materials will be grown in the laboratory of Professor Chang-Beom Eom at the University of Wisconsin.

Energy Efficiency

Another issue Levy is studying is the amount of power that is consumed by devices as they get smaller. With laptops, for example, clock speed—processor speed—used to be everything. But now, it’s not power efficiency. “What we’re interested in is switching between doing things that consume a lot of power and doing things that consume a lot of energy,” Levy says. “Of course, that’s because silicon processors can’t make it go faster,” Levy points out. “They could increase the clock speed, but it would melt the silicon.”

OnRamp to Success

The grant also includes an outreach component. A new “OnRamp” education program targets specific difficulties that students have in their subdiscipline while they are still in their undergraduate years. OnRamp tutorials are developed by beginning graduate students as they “learn the ropes” of doing research. Graduate students help develop research-based learning modules, which are shared with a broader research community—“putting a ramp there to make things small,” says Pitt professor of physics and astronomy Claudia D. Chan, who leads this OnRamp program.

Such tools have been shown to help students from underrepresented groups. In addition, both Pitt and Wisconsin continue to expand their high school outreach programs, which are designed to smooth out the bumps in the road so that students from underrepresented groups can make things small; the question is, “can we make them small and not heat up the temperature of the sun?”

Students interested in learning more about the OnRamp program can visit http://www.levylab.org.

Ghedin, Guskiewicz: MacArthur Fellows

Although nominees are reviewed for their achievements, the fellowship is not a reward for past accomplishment, but rather an investment in a person’s originality, insight, and potential.

The Foundation does not require or expect specific prior recognition or investment of MacArthur Fellows and does not evaluate recipients’ creativity during the term of the fellowship. The MacArthur Fellowship is a “no strings attached” award in support of people, not projects. Each fellowship comes with a stipend of $500,000 to the recipient, paid out in equal quarterly installments over five years.

How MacArthur Fellows Are Chosen

Each year, the MacArthur Fellows Program invites new nominees on the basis of exceptional accomplishment and exceptional breadth of experience. They are encouraged to nominate the most creative people they know within their field and beyond. Nominators are chosen from a dozen leaders in the sciences, arts, humanities, public affairs, professions, and for-profit and nonprofit communities. Each nomination is considered with respect to the program’s selection criteria, based on the nomination letter along with original works of the nominee and evaluations from other experts collected by the program staff.

After a thorough, multistep review, the Selection Committee makes its recommendations to the president and board of directors of the MacArthur Foundation. Announcement of the annual list is usually made in September. While the list is created each year, approximately 30 Fellows are selected each year. Between June of 1981 and September of 2010, 828 Fellows have been named.

Nominators—artists, and selectors all serve anonymously and their correspondence is kept confidential. This policy enables participation by people whose best work happens outside the usual channels of influence. The Foundation also provides no application or solicited nominations.

Another issue Levy is studying is the amount of power that is consumed by devices as they get smaller. With laptops, for example, clock speed—processor speed—used to be everything. But now, it’s not power efficiency. “What we’re interested in is switching between doing things that consume a lot of power and doing things that consume a lot of energy,” Levy says. “Of course, that’s because silicon processors can’t make it go faster,” Levy points out. “They could increase the clock speed, but it would melt the silicon.”

OnRamp to Success

The grant also includes an outreach component. A new “OnRamp” education program targets specific difficulties that students have in their subdiscipline while they are still in their undergraduate years. OnRamp tutorials are developed by beginning graduate students as they “learn the ropes” of doing research. Graduate students help develop research-based learning modules, which are shared with a broader research community—“putting a ramp there to make things small,” says Pitt professor of physics and astronomy Claudia D. Chan, who leads this OnRamp program.

Such tools have been shown to help students from underrepresented groups. In addition, both Pitt and Wisconsin continue to expand their high school outreach programs, which are designed to smooth out the bumps in the road so that students from underrepresented groups can make things small; the question is, “can we make them small and not heat up the temperature of the sun?”

Students interested in learning more about the OnRamp program can visit http://www.levylab.org.
**Happenings**

**Concerts**

**The Americans—In Concert,** Grammy-winning Latin pianist Octavio Brunetti and his band, the Octavio Brunetti Quintet, bring tango to Pittsburgh, 7:30 p.m. Oct. 1, free public concert, Richard Rush Theater in Hillman Center for Performing Arts, Shady Side Academy Senior School, 423 Fox Chapel Rd., Pitt’s Center for Latin American Studies and University Center for International Studies, tickets should be reserved, visit www.pittarts.org/index.html, 412-624-4753.


**University Opera Center,** The American—In Concert, Hillman Center for Performing Arts, Shady Side Academy, October 1, 8 p.m., Pittsburgh Opera Center, 980 Liberty Ave., Downtown, 412-454-6000, www.pittarts.pitt.edu.

**Exhibitions**


**Frick Fine Arts Auditorium,** September 27, 7 p.m., Pittsburgh Cultural Trust, 980 Liberty Ave., Downtown, 412-454-6000, www.pittarts.pitt.edu.

**Opera/Theater/Dance**

**Electra,** Sophocles’ drama that brings to life the myths of ancient Greece while telling the timeless tale of one family’s tragic downfall, Sept. 29 through Oct. 30, O’Reilly Theater, 621 Penn Ave., Downtown, University of Pittsburgh, www.pittarts.pitt.edu.


**The Marvelous Wonderette,** Roger Braun, a career in the 1950s and ’60s, through Oct. 2, Cabaret at Theater Square, 7 p.m., Pittsburgh Cultural Trust, 980 Liberty Ave., Downtown, 412-454-6000, www.pittarts.pitt.edu.

**Lectures/Seminars/Readings**

**John D’Agata,** author and editor, 8:30 p.m. Sept. 27, Frick Fine Arts Auditorium, Pitt’s Center for Contemporary Writers Series, University Center for International Studies, 412-624-4498, www.pittarts.pitt.edu.

**“Becoming Good by Nature”: Aristotle on the Habitability of Character,** Matika Lemunisen, assistant professor of philosophy, University of North Carolina, 3:30 p.m. Sept. 30, 244B Cathedral of Learning, Pitt’s Program in Classics, Philosophy, and Ancient Science, www.classics.pitt.edu.

**“Novel Strategies Against Mycobacterium Tuberculosis,”** Shabnam Khader, assistant professor of pediatrics and of immunology, Pitt School of Medicine, noon Sept. 30, Scalle Hall, Auditorium 6, Senior Vice Chancellor’s Research Seminar Series, open to all Pitt and CMU faculty, students, and staff, www.scc-seminar.pitt.edu.

**“The Americans—In Concert,”** Grammy-winning Latin pianist Octavio Brunetti and his band, the Octavio Brunetti Quintet, bring tango to Pittsburgh, 7:30 p.m. Oct. 1, free public concert, Richard Rush Theater in Hillman Center for Performing Arts, Shady Side Academy Senior School, 423 Fox Chapel Rd., Pitt’s Center for Latin American Studies and University Center for International Studies, tickets should be reserved, visit www.pittarts.org/index.html, 412-624-4753.
Pitt’s Department of History hosted a Sept. 15 symposium on Professor Rob Ruck’s recent book, *Raceball: How the Major Leagues Colonized the Black and Latin Game* (Beacon Press, 2011). Addressing a standing-room-only audience in the William Pitt Union’s Lower Lounge were (from left) Laurent Dubois, the Marcello Lotti Professor of Romance Studies and History at Duke University and author of *Soccer Empire: The World Cup and the Future of France*; Sean Gibson, the great-grandson of Baseball Hall of Fame legend Josh Gibson and executive director of the Josh Gibson Foundation, a Pittsburgh nonprofit organization; Lara Putnam, a Pitt history professor; and Ruck.

**PHOTOS BY MIKE DRAZDZINSKI/CIDDE**

Pitt Provost and Senior Vice Chancellor Patricia E. Beeson (left) and Charles Perfetti (right), Distinguished University Professor of Psychology and director of Pitt’s Learning Research & Development Center, joined U.S. Undersecretary of Education Martha Kanter on Carnegie Mellon University’s campus Sept. 7. Kanter spoke about education and the economy, and her remarks were followed by two panel discussions. Perfetti participated in the first panel on cognitive and learning sciences, while Beeson delivered the panels’ closing remarks.

**EDUCATION AND THE ECONOMY**

**FORMER POLISH PM ADDRESSES KATZ GRADS**

Former Polish Prime Minister Marek Belka addressed a July 30 graduation ceremony for Pitt’s Joseph M. Katz Graduate School of Business’s MBA students. Sixty-two of the graduates earned their degrees from Katz’s Executive MBA Worldwide program, which has centers in Prague, Czech Republic, and Sao Paulo, Brazil, in addition to Pittsburgh. Belka is currently president of the National Bank of Poland and a member of the Katz Executive MBA Worldwide’s European Board of Advisors. He urged the graduates to remain flexible in the face of an uncertain global economy.

**DANIEL ACKER**

**PUBLICATION NOTICE** The next edition of *Pitt Chronicle* will be published Oct. 3. Items for publication in the newspaper’s *Happenings* calendar (See page 7) should be received at least two weeks prior to the event date. *Happenings* items should include the following information: title of the event, name and title of speaker(s), date, time, location, sponsor(s), and a phone number and Web site for additional information. Items may be e-mailed to chron@pitt.edu, or sent by campus mail to 422 Craig Hall. For more information, call 412-624-3033 or e-mail robinet@pitt.edu.