Dr. Eli Fromm Elected to the National Academy of Engineering

Dr. Eli Fromm, LeRoy A. Brothers Professor of Electrical and Computer Engineering, was elected to The National Academy of Engineering (NAE). Dr. Fromm has been recognized by the NAE for “innovation and leadership in the development of a holistic curriculum for engineering education.”

This honor is one of the highest professional distinctions that can be accorded to an engineer. Academy membership recognizes those who have demonstrated accomplishments in “the pioneering of new fields of engineering, making major advancements in traditional fields of engineering, or developing/implementing innovative approaches to engineering education.”

Dr. Fromm was awarded the National Academy of Engineering’s most prestigious honor in 2002, the Bernard M. Gordon Prize for innovation in engineering and technology education. This achievement was rewarded with a $500,000 cash prize. Dr. Fromm received the award in recognition of contributions that revolutionized engineering education through the Enhanced Educational Experience for Engineers (E4), in collaboration with the late Dr. Robert Quinn, which Drexel implemented in 1989.

Dr. Fromm has also received other prestigious awards during his career and is a great example of the caliber of the department’s faculty. In 2004, the International Engineering Consortium presented him with the IEC Fellow Award. The award was established in 1994 to recognize individuals who have provided the information industry with a superior level of sustained and significant service. In receiving the IEC Fellow Award, Dr. Fromm joined more than 80 communications and technology trailblazers. He also received the 2004 Distinguished Alumni Award of the Thomas Jefferson University College of Graduate Studies and Drexel University’s College of Engineering Honors Day Lifetime Achievement Award.

“His continuous recognition for his dedication to and impact on engineering education is a tremendous honor not only for Dr. Fromm personally, but also for the ECE Department and Drexel,” said ECE Department Head Dr. Nihat Bilgutay.
DDrexel was ranked among the “Best National Universities-Doctoral” in 2004 by U.S. News & World Report. The College of Engineering’s undergraduate programs were ranked 51 out of 168 and the graduate programs 59 out of 168. The electrical engineering graduate program specialty ratings ranked the ECE Department 54 out of 149, placing Drexel in the 64th percentile.

Left to right: Award winners Scott Currie, Iman Loordgoei, Yining mao, John McCool, Tanita Chappelle, Karen Miu, Hiywote Demisse and Xiaobo Hou.

ECE Awards and Recognition Ceremony

The annual ECE Awards and Recognition Ceremony was held May 17 in Behrakis Grand Hall. The awards are given in recognition of the outstanding contributions and achievements of the ECE Department’s students, faculty, staff and alumni. The Awards and Recognition Ceremony enables ECE to show its gratitude to those who exemplify dedication to the department and its continued success. The award recipients are: The Robert Quinn Outstanding ECE Student Awards Iman Loordgoei, Hiywote Demisse The Allen Rothwarf Outstanding ECE Student Awards Yiming Mao, Xiaobo Hou The ECE Research Achievement Award Dr. Karen Nan Miu The Distinguished Alumnus/Alumnae Award John McCool

Drexel U.S. News & World Report Rankings

Drexel was ranked among the “Best National Universities-Doctoral” in 2004 by U.S. News & World Report. The College of Engineering’s undergraduate programs were ranked 51 out of 168 and the graduate programs 59 out of 168. The electrical engineering graduate program specialty ratings ranked the ECE Department 54 out of 149, placing Drexel in the 64th percentile.
Two New Faculty Members Join the ECE Department

Jaudelice Cavalcante de Oliveira received a B.S.E.E. degree from the Universidade Federal do Ceara (UFC), Ceara, Brazil, in December 1995; an M.S.E.E. degree from Universidade Estadual de Campinas (UNICAMP), Sao Paulo, Brazil, in 1998; and a Ph.D. in electrical and computer engineering from the Georgia Institute of Technology in 2003. She joined Drexel in July 2003 as an assistant professor. Dr. de Oliveira’s research interests include the development of new protocols and policies to support fine-grained quality of service provisioning in the future Internet, researching and developing traffic engineering strategies for MultiProtocol Label Switching (MPLS) networks and the design of solutions for managing heterogeneous and large computer networks.

From 1993-95, Dr. de Oliveira interned at TELECEARA (former telecommunications agency of the state of Ceara, Brazil). There, she developed a simulation tool to study telephone networks. From 1996-98, she worked in collaboration with TELESP (former telecommunications agency of Sao Paulo, Brazil). She designed new methods for link dimensioning, traffic routing and blocking probability estimation in ATM networks, which were then prototyped and utilized by TELESP. In 2001-03, Dr. de Oliveira worked on a project supported by NASA Goddard, elaborating new methods for quality of service provisioning in IP networks. Currently, her research includes collaborations with Cisco Systems and NASA Goddard. She was awarded a four-year Ph.D. program fellowship from the Brazilian Ministry of Education Agency (1998-2002). She is a member of IEEE, IEEE-COMSOC, IEEE-WIE, ACM andEta Kappa Nu.

Steven Patrick Weber received a B.S.E.E. degree from Marquette University in 1996 and his M.S.E.E. and Ph.D. in electrical and computer engineering from the University of Texas at Austin in 1999 and 2003, respectively. He joined Drexel in September 2003 as an assistant professor. Dr. Weber’s research interests focus on mathematical modeling of computer networks. His recent projects focused on optimal streaming policies for rate-adaptive streaming multimedia. Previously, his research focused on applying stochastic geometry to the study of wireless ad-hoc networks. His other research interests are in network economics and studying Internet topology.

From 1994-96, Dr. Weber interned at the MacNeal-Schwendler Corporation, where he developed simulations of the company’s finite-element software for electromagnetics. From 1996-97, Dr. Weber was a research assistant for the National Law Center on Homelessness and Poverty in Washington, D.C., studying the impact of the 1996 Welfare to Work Act on the homeless population. Dr. Weber was awarded a University of Texas MCD Fellowship (1997-99), a University of Texas College of Engineering Doctoral Fellowship (1999-2001) and a University of Texas Continuing Fellowship (1999-2000). He is a member of IEEE,Eta Kappa Nu, Tau Beta Pi, Sigma Chi and Pi Mu Epsilon.

Who’s Doing What

Dr. Nihat Bilgutay was elected a fellow of the IEEE for leadership in engineering education, innovation and an extraordinary record of accomplishments. Recognition as fellow is bestowed by the IEEE Board of Directors on a select group of recipients following a rigorous evaluation procedure and is one of the organization’s most prestigious honors. Election to fellow is given to engineers who have demonstrated outstanding proficiency and had achieved distinction in their profession. The Fellow Committee named 260 IEEE Senior Members to Fellow Grade in January 2004.

Dr. Bruce Eisenstein was selected by the IEEE Educational Activities Board (EAB) to serve as a program evaluator for ABET accreditation of electrical engineering programs. Dr. Eisenstein will serve a five-year term.

Dr. Adam Fontecchio received a 2003 NASA Summer Faculty Fellowship at the NASA Jet Propulsion Laboratory (JPL) in Pasadena, Calif. He was one of 22 researchers selected out of 734 applicants. During the 10-week program, Dr. Fontecchio had the option of working with the MEMS group or the photonic bandgap group. While at JPL, Dr. Fontecchio received weekly lectures and seminars from NASA scientists, tours of the facilities and workshops on conducting research with NASA and writing grant proposals.

Dr. Moshe Kam received the College of Engineering’s Robert Quinn Medal for distinguished service to the College and Drexel. The award is named after the late Professor Robert Quinn, a co-founder of the Enhanced Educational Experience for Engineers Program (E4), which is known today as the Drexel Engineering Curriculum (tDEC). Dr. Quinn’s impact on engineering education is greatly respected. The E4 curriculum was designated a national model for undergraduate engineering education by the National Science Foundation, and is emulated by universities worldwide. The Robert Quinn Medal is given to an individual whose outstanding leadership exemplifies that of Dr. Quinn.

An IEEE Board Member, Dr. Kam was appointed as chair for the IEEE Audit Committee in 2004. He also presented with the 2004 Chapter of the Year Award by the IEEE Philadelphia Section for “exceptional leadership in developing Chapter activities and encouraging their growth in the Philadelphia Section” as chair of the IEEE Philadelphia Chapter.

Dr. Karen Miu received an honorable mention in the 2003 Eta Kappa Nu National Outstanding Young Electrical Engineer Awards Program. This award recognizes some of the most outstanding young electrical engineers in the nation.

Dr. Athina Petropulu was elected to serve on the IEEE Signal Processing Society Board of Governors as a member-at-large for the term January 1, 2004 through December 31, 2006. ECE faculty members were recognized for their dedicated service to Drexel at the University’s 2003 Annual Employee Service Awards ceremony. The following faculty members were honored for 30 or more years of service: Ed Gerber, 35 years; Eli Fromm and Peter Herzfeld, 30 years; Oleh Tretiak.
**Research Awards**

Dr. Adam Fontecchio received a three-year, $338,000 2004 NASA New Investigator Award for his project “Lightweight Mirror with Electronically Switched Focal Point for Remote Sensing.” The project will support career development in both research and education.

Dr. Leonid Hrebien received a $344,282 award from Centocor for the project “Data Analysis and Development of Analytical Algorithms and Software for Analytical Polychromatic.” He also received a $483,872 award from GlaxoSmithKline in 2003 for “Alliance for Data Analysis.”

Dr. Moshe Kam received an award from the Office of Naval Research for $165,000. The project, “Development of a Virtual Distributed Control System (Phase II).” The project previously received $330,068.

Dr. Karen Miu received $100,000 from the Office of Naval Research for “Multi-Frequency Analysis of Large Scale Systems. The three-year project had previously received $210,000.

The ECE Department received a $5,000 award from Unisys in December 2003 to support senior design and the ECE Faculty Fellowship Fund.

**Research Group Receives $2.25 Million Grant from the Department of Defense**

Dr. Karen Miu (PI), along with Drs. Dagmar Niebur and Chika Nwankpa, received a three-year, $2.25 million Department of Defense (DoD) Multi-disciplinary University Research Initiative (MURI) award for “Device Development for Remote Nondestructive Testing and Measurement of Power Systems.” Iowa State University, Texas A&M University, Mississippi State University and Northeastern University are also collaborating on the project. Two additional years may be granted for the award, which would bring the five-year total to $3.72 million.

The DoD awarded the MURI grant as a part of an effort to transform research programs to exploit emerging scientific opportunities, and to be more responsive to their needs. The MURI program focuses on multi-disciplinary research themes vital to national defense.

Dr. Miu’s project will focus on the development of Remote Testing and Measurement devices (RTM) that will be performed and replicated to interconnect power system laboratories for advanced network studies. Five universities have teamed to create a large-scale power system laboratory that will be virtually connected via the Internet and the RTMs. Currently, transmission utilities post congestion data via the Internet and many energy market designs are based on Internet communication. Consequently, the effects of communication delays and control device limitations will be studied and modeled using actual, easily accessible measurements.

**ECE Faculty Member Leads $1.86 Million Grant from the Department of Energy**

Dr. Chika Nwankpa, along with Drs. Prawat Nagvajara, Jeremy Johnson (computer science and ECE faculty member), Karen Miu and Dagmar Niebur received a $1.86 million grant from the Department of Energy for the project “PowerGrid Phase II: A Real-Time Reconfigurable Computational Engine.” The project is concerned with continuation of work on the development of a real-time reconfigurable electric power grid simulator capable of analyzing the types and consequences of actual events such as line contingencies and generator outages on a large-scale electric power network. New Jersey Institute of Technology (NJIT) is a subcontractor on the project. That work will be led by NJIT’s Dr. Sotirios Ziavras.

According to Dr. Nwankpa, the project was initiated because of the “increased concern about security issues involving the electric utility industry.” Because of the impact of industry deregulation, “there is a need to develop an extremely fast and efficient computational tool for the electric power network,” he said. The specific tool the research team will create will analyze the current state of the network, assess the impact of large-scale events on the network and determine corrective measures in order to reduce system vulnerability.

**Gustave Anderson**, a BS/MS student, received a Class of 2003 Outstanding Co-operative Education Seniors award. Gus works with Dr. Moshe Kam in the Data Fusion Lab. He was one of 11 Drexel students selected by the awards committee of the General Alumni Association Board of Governors from among 72 nominees submitted by Drexel’s co-op employers.

**Nathaniel Curtis** and **Alan Whatley** were members of the team that conducted experiments on “Nanofiber Formation Under Reduced Gravity” aboard the NASA “Vomit Comet” KC-135 plane last summer. The experiment focused on the physical and chemical make-up of electrospun polymer fibers and verified the feasibility of an electrospinning device in zero gravity. Dr. Mun Young Choi, head of the department of mechanical engineering and mechanics, leads the project and advises the students.

**Mike Ermold**, Dr. Adam Fontecchio’s graduate student, was awarded a second-year renewal of his NASA Graduate Student Researchers Program (GSRP) fellowship through the Marshall Flight Space Center. Mike also received a $1,500 SPIE Educational Scholarship in Optical Science and Engineering for conference attendance and presentation from SPIE, the International Society of Optical Engineering.

**Jon Guey**, an ECE senior and the son of Dr. Allan Guey, received one of the University’s Martin Luther King Awards for Writing.

**Derek Halverson**, a student of Dr. Gary Friedman, received an honorable mention in the 2004 NSF Graduate Fellowship Program.

**Alia Sabur**, a first year Ph.D. student, received the prestigious National Defense Science and Engineering Graduate Fellowship. Only 116 fellows were selected this year from an applicant pool of over 1,500. At age 15, Alia is the youngest Ph.D. student in the nation. She received her BSEE from SUNY-Stony Brook.

**Sarod Yattawatta**, a Ph.D. student advised by Dr. Athina Petropulu, received a Hill Fellowship for 2003-04. The fellowship provides $5,000 stipend. The Drexel Battlebot team participated in the North Carolina Robot Street Fight on July 4-5, 2003, progressing through two rounds of competition before their robot was damaged. The team finished in sixth place. The team includes **Andrew J. Aiello** (mechanical engineering and mechanics), **James M. McClain** (ECE), **Jeffrey U. Delos Reyes** (ECE) and **Joseph C. Valinsky** (MEM).

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Dr. Stephen L. Squires ’70 chief
science officer and vice pres-
ident for Hewlett-Packard
Company, was honored
as the College of Engineering’s Engineer of the Year 2003.
This honor was bestowed upon Dr. Squires to recognize his
outstanding accomplishments, which reflect the impact of
his Drexel education. He was honored at an awards
banquet and ceremony in October 2003.

At HP, Dr. Squires is responsible for providing leadership in
establishing overall strategic scientific and technical directions,
including the architecture of the digital renaissance for the 21st century Internet.
Prior to joining HP in 2000, he was the special assistant for Information Technology
to the director of the Defense Advanced Research Projects Agency (DARPA). At
DARPA, Dr. Squires was responsible for advancing the frontier of progressively
larger sectors of information technology. He developed plans for and managed and
directed the scalable systems parts of the DARPA Strategic Computing Program, the
Federal High Performance Computing and Communications Program and its exten-
sion to the National Information Infrastructure.

Dr. Squires was recruited by the National Security Agency (NSA) as a Drexel
freshman electrical engineering student and worked as an engineering intern in
the advanced computing and communications laboratories. Throughout his career
as an electrical engineer and computer scientist at NSA, he focused on the most
challenging national security problems using advanced information technologies.

Jay Bhatt MSE ’86 received Drexel’s Harold Myers Distinguished Service Award in 2003. The Myers Award is the University’s most prestigious service award, given to a member of the University administrative staff whose service on one or more occasions has been recognized as significant in the life of the University, and is a contributor to the work of the University and its mission.

Mr. Bhatt also became an honorary member of the “Who’s Who Historical Society.” His biography appeared in the International Who’s Who of Professionals in December 2003. He currently is an information services librarian in Drexel’s Hagerty Library.

Kenneth C. Dahlberg ’67 was named chief executive officer of Science Applications International Corporation (SAIC), the largest employee-owned research and engineering firm in the United States, in November 2003. Prior to joining SAIC, he served as executive vice president of General Dynamics’ Information Systems and Technology group.

Mr. Dahlberg is a member of the National Defense Industrial Association Board of Directors, the Institute of Electrical and Electronics Engineers, the American Society of Naval Engineers and the Surface Navy Association and a lifetime member of the Navy League.

Mr. Dahlberg, along with Dr. Squires, was inducted to the College of Engineering’s 2003 Alumni Circle of Distinction.

John McCool ’82 the recipient of the ECE 2004 Distinguished Alumni Award, is vice president at Cisco Systems. He heads the company’s Gigabit Switching Business Unit (GSBU), where he is responsible for product management and development of the Catalyst 4500 Series switches.

Mr. McCool joined Cisco in 1996 with the acquisition of Granite Systems, a start-up company that focused on developing equipment for the nascent Gigabit Ethernet market. Prior to Granite, he headed development of the industry’s first dual-speed 10/100Mbit Ethernet switch at SynOptics. Mr. McCool held management and design positions at NeXt Computer and Advanced Micro Devices that focused on the development of communication ICs. He has been active in the IEEE and ANSI standards development for the Fiber Distributed Data Interface (FDDI), 10BASE-T and 100BASE-T protocols. He holds several patents related to his work on networking technologies.

Mr. McCool received a master’s degree in computer engineering from Santa Clara University. He lives in northern California with his wife and two children.

Dr. Li Bai ’98 and James I. Burris, Jr. ’93 were recognized as the Delaware Valley Young Engineers of the Year 2004. Dr. Bai received his MSEE and Ph.D. at Drexel under the supervision of Dr. Moshe Kam, and is presently an assistant professor in the electrical and computer engineering department at Temple University. Mr. Burris is employed by PECO Energy as manager of engineering design.

Dr. Arthur C. Paolella ’92 was appointed to the ECE Advisory Council in November 2003. Dr. Paolella received his Ph.D. from Drexel, where he was a student of Dr. Peter Herzfeld. He is president of Artisan Laboratories Corporation.

Dr. Tim Brophy ’88, ’93 who received his BSEE, MSE and Ph.D. from Drexel, was promoted to vice president of Optin Systems. Dr. Brophy has more than 18 years of experience in electrical and optical engineering relating to the develop-
ment and commercialization of CATV equipment and DWDM systems. He previously served as director of optics engineering and advanced photonic technology at Motorola’s Broadband Communication Sector and as vice president of product development at Qusion Technologies.

The College of Engineering Honors Day ceremony was held on February 25. Benjamin Yellen, a graduate student working with Dr. Gary Friedman, received the Graduate Student Research Award. Ben also won first prize in the University’s Laurence A. Baiada Center for Entrepreneurship in Technology’s 2003 Business Plan Competition along with Zachary Forbes. Their business plan is based on the collaborative work being performed by Drs. Friedman and Kenneth Barbee, associate professor of biomedical engineering and science.

The College of Engineering’s Undergraduate Student Research Award was presented to Richard Primerano, a BS/MS student who works with Dr. Moshe Kam. In 2003, Richard received a $5,000 IEEE Student-Branch Leadership Scholarship, along with two other Philadelphia area ECE students. An active student leader of the IEEE Student Chapter, he has been on the Dean’s List since his freshman year and is an Anthony J. Drexel Scholarship recipient.

Santurnino Garcia is a junior computer engineering majoring in the operating sys-
tems track. He completed the classes for this track and is now able to study another concentration. He said, “The computer engineering curriculum’s flexibility has given me the opportunity to learn more about what I want to do through experience.”

Santurnino has also been working on AGIN as his co-op. He works for Dr. Moshe Kam and said the experience has given him a chance to mix research and theoret-
cal classroom learning, which he has enjoyed and found helpful. Because of his pos-
tive experience at Drexel as an undergraduate, Santurnino is considering pursuing
a master’s degree at the University.

Valentina Cecchi is a fourth-year ECE junior. She says her experience at Drexel
has been a positive one, mainly because of her co-op experience and close relation-
ship with ECE faculty and social organizations, such as Eta Kappa Nu. She feels that an organization like Eta Kappa Nu has allowed her to form close relationships outside of the classroom with students and faculty. She also is pleased with the research she did with Drs. Karen Miu and Bahram Nabet. Working with both pro-
fessors helped her fine tune her interests in the ECE Department and decide what she is interested in pursuing after graduation.
ECE relies on the generous support of alumni and friends to sustain excellence in our program and facilities. All it takes is a couple of hours of your time. You will be able to meet and encourage new students and motivate them to succeed in academics as well as in life. Such interactions are welcomed by our students and faculty. If you can volunteer your time and efforts, please let us know by returning the following information. Check the appropriate boxes and send to: Department Head, Department of Electrical and Computer Engineering, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104.

☐ I am willing to talk to freshmen.
☐ I am willing to mentor students.
☐ I am willing to participate in open houses.

Name
Address

Telephone Number
E-mail Address

Please let us know about your career achievements so that we can include your activities in future issues.