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Stop the Presses
The following was inadvertently omitted from the spring/summer 2002 issue of Wavelinks: Fritz Friedlaender is a Fellow of the American Physical Society. He also initiated a program with the University of Ruhr-Bochum for education and exchange of students.

On the Cover:
Mark J. T. Smith, a professor of electrical and computer engineering and former executive assistant to the president at the Georgia Institute of Technology, will take the helm of ECE as the new head on January 1, 2003 (page 10).

Photo credit: John Underwood
Kudos for ECE

ECE faculty and staff members receive honors, awards, and distinctions for their achievements.

Connie Boss was elected chair of the Clerical and Service Staff Advisory Committee (CSSAC) for the 2002–2003 session. The CSSAC is a University committee founded in 1965 to provide an effective means of communication between the clerical and service staff and the University administration, and to champion the general welfare and working conditions of its constituents.

Supriyo Datta and Mark Lundstrom received the 2001 Technical Excellence Award from the Semiconductor Research Corporation at its Board of Director’s meeting in November 2002 for their “consistent contributions in the area of device physics and simulation of nano scale MOSFETs.” The SRC plans and manages a program of basic and applied university research on behalf of its participating members.

Supriyo Datta and Mark Lundstrom also were co-recipients of the 2002 IEEE Cledo Brunetti Award. Established in 1975 by the IEEE Board of Directors, the award is presented for outstanding contributions in the field of miniaturization in the electronic arts. The award will be presented during the 2002 IEEE International Electron Devices Meeting in December.

Ed Delp received one of only six Nokia Fellowships from the Nokia Foundation for his work in multimedia systems, video compression, and security. The award allowed him to travel to Finland and visit the Nokia Research Laboratories and the Tampere International Center for Signal Processing at the Tampere University in Tampere, Finland.

Delp was in good company when he received an honorary doctoral degree from the Tampere University of Technology in Finland; Paavo Lipponen, Finland’s prime minister, received the same honor. Delp was a visiting professor at the Finnish university’s Tampere International Center for Signal Processing. The citation stated Delp’s honorary degree was issued “in recognition of your scientific work in the field of signal and image processing and your merits in the development of multimedia systems and the secure data communications they require. You have also been engaged in long-term cooperation with our university and forwarded its activities within the international research community.”

Delp gave the plenary address at the International Workshop on Digital and Computational Video held in Clearwater, Florida on November 14-15, 2002. His talk was entitled: “Digital Cinema: Is This Just Another Video Application?”

David Ebert was named editor-in-chief of the IEEE Transactions on Visualization and Computer Graphics for a two-year appointment beginning in January 2003.

Les Geddes was chosen for the American College of Clinical Engineering Devteq Award. The Devteq Award is given annually in recognition of significant work in the area of safety as it relates to health care. His work has provided basic knowledge of ventricular fibrillation, impedance measurements, electric shock, and electrosurgery.

Leah Jamieson received the Indiana Women & Hi Tech Leading Light Award in the Science, Technology, or Engineering Educator category. The award recognizes women’s achievements in science and technology and acknowledges women who demonstrated expertise, professionalism, leadership, service, courage and tenacity in pursuing their chosen career. Sue Ream, President, Board of Directors, Women & Hi Tech, said, “Women & Hi Tech consider it a great honor to present awards to women like you who have demonstrated excellence in their careers in which technology has had an impact. Your achievements and accomplishments will very likely inspire other girls and women to set their sights high in choosing and succeeding in technology related careers. Truly, this is a way to highlight the mission of our group: ‘Valuing Women’s Achievements in a Technology Driven World’.”

Jamieson was one of three keynote speakers at the Institute for Women and Technology’s 4th annual

Kaushik Roy was invited to serve as a visiting professor at Nanyang Technological University in Singapore and will teach one month each year there for the next three years.

Michael Zoltowski was selected to be a 2003 Distinguished Lecturer for the IEEE Signal Processing Society. There are six Distinguished Lecturers chosen each year to represent the Society by giving lectures on their research around the world. The Society’s Distinguished Lecturer program provides means for individuals who are well-known educators and authors in the fields of signal processing to lecture at chapter meetings.
New Faculty Members Bring Diverse Research, Experience

By Kathy Mayer

With avocations ranging from photography to being a Dad, hailing from homelands as near as Indiana and as far as Iran, and with equally diverse research interests—from wearable computers to novel devices for high-frequency applications—six new faculty members bring their experiences to ECE this year. The following is a brief summary of backgrounds, educations, and research interests for each new faculty member; complete curriculum vitae are available on the ECE Web site at www.purdue.edu/ECE.

Saurabh Bagchi: Writer, Sportsman, Traveler

A creative writer, serious badminton player and avid traveler describe Saurabh Bagchi. He came to Purdue this fall from New York, where he worked the last year and a half at the IBM T. J. Watson Research Center.

“My passion is reading and writing,” he says, and his goal is to publish a collection of his short stories. Many of them center on displaced people as they adapt to new cultures. In the stories, he says, his characters “slowly realize that very few things are absolute good or absolute bad, but are a function of the local culture.” Writing a novel, too, is something he may tackle one day.

For sport, Bagchi is a serious contender on the badminton court and he hopes to spark interest in the game in his new home. He also enjoys basketball and appreciates Indiana’s enthusiasm for it. As for traveling, he says, “My goal is to visit all 50 states in the U.S.” He’s about a third of the way there.

He’s also eager to learn more about his new place of residence. “I want to see how things are done in the warm Midwestern way,” he says.

For now, his energies are focused on his new post. “It’s been a long-cherished dream of mine to teach, to talk to young minds,” he says. “They are challenging me, and I am challenging them as we both travel on a voyage of discovery. That’s just what I have wanted.”

Bagchi came to the U.S. from India, where a high school experience creating a geographical discovery system sparked his interest in computers.

“It seemed extremely cool to me. It was instant gratification. You could dive in and immediately run it and know if you succeeded or failed,” he says of the 1990 class software project that included a
graphical interface so users could learn about his Indian state, West Bengal. “I could really let my imagination go. Computer science is typically not seen as an imaginative field, but this project showed me that in this field I could really be as imaginative as I liked.”

He earned a bachelor’s in computer science and engineering from the Indian Institute of Technology at Kharagpur, then headed to the University of Illinois at Urbana/Champaign, where he earned a master’s in 1998 and a PhD in 2000.

His research interests are in building dependable, heterogeneous large-scale distributed systems and using them to disseminate information.

He’s especially appreciative of the academic environment. “As a professor, I can take a completely new thought and translate it into action and a prototype and a product. Even though it’s a cliché, I feel ‘the sky is limit.’ And the freedom of an academic institution is something I’ve come to value greatly.”

William Chappell: Continuing a Family Tradition

Even though Chappell earned his bachelor’s, master’s and PhD in electrical engineering from the University of Michigan, black and gold are the colors
So enchanted is he with books and their potential offerings, Yung-Hsiang Lu says, “Sometimes I go to a library and walk through the bookshelves, picking out books and seeing what I get.” Reading was a favorite pastime growing up in Taiwan, too. So was tinkering. “My dad is an electrical technician and engineer, and when I was about three or four, I started getting experience with wires, screwdrivers, meters, oscilloscopes and those kinds of things,” Lu recalls. “I guess my dad gave me the experience not to fear this area. And my sister who is three years older is an engineer, too.”

Another childhood interest that he continues today is sports. “I was a pretty good soccer player and a fan. Since high school, I’ve developed an interest in jogging and swimming, and sometimes I enjoy tennis, badminton and bicycling.” For more passive entertainment, he turns to classical music. He plays the piano “just a little,” preferring instead to listen to recordings and sometimes going to concerts.
Lu graduated second in his class from National Taiwan University a decade ago, earning a bachelor’s in electrical engineering. He then came to the U.S., earning his master’s in 1996 and PhD in 2002, both at Stanford University and both in electrical engineering. He began teaching this fall at Purdue.

“I think education is very important,” he says. “During my own studies, I have had many good teachers, so I want to be a good teacher.” He believes teaching students to think critically is key, as is questioning. “I will emphasize hands-on experience to examine carefully the relationship between theory and practice.”

Another goal, he says, “I want to create technology to improve life. It’s important to improve society, to improve human life, and to make things accessible for all people.” His research focuses on three areas for designing energy-efficient systems—characterizing power consumption by studying the interaction between subsystems, such as processors, memory and IO devices; building systems that exploit different energy-performance options; and investigating alternative power sources, such as solar, vibration, thermal and hybrid energy.

Lu has an Indiana winter ahead as a new opportunity, too. “I’ve experienced snow a few days, in California when I went skiing and once at a conference in Michigan,” he says. But never an ice storm.

With a decade of industry experience and three young sons, Samuel Midkiff is grounded in real-life practicality.

He’s been at the IBM Research Center in New York for the past 10 years, and he’s the father of Danny, 9; Jack, 6; and Nathan, 3. He lets loose by flying model rockets and airplanes with his kids. “We fly those rubber-band powered things,” he laughs, most of them store-bought. “I do make some, but not too often.”

When he hit campus this fall, it was with great enthusiasm for a new way of living and work. Purdue was appealing not only for the opportunities, but the location, he says. His wife’s family is in Chicago; his, in Kentucky.

He’s looking forward to being able to do longer-term research than he could in industry, he says. “I hope to get a good research program going in compilers and looking at ways to make compilers and tools easier to develop and easier for programmers to use.”

Midkiff’s style is one of solving problems and creating new ideas. “One of the things that makes me interested in computers and doing research is trying to figure things out and understand things.”

The first time he used a computer, Midkiff was a college sophomore majoring in political science. “I used punch cards. I took a computer course just for the fun of it and ended up enjoying computer science a lot, so I switched over.” He earned his bachelor’s in 1982 from the University of Kentucky, then went to the University of Illinois at Urbana-Champaign for his master’s, earned in 1986, and PhD, earned in 1992.

What he brings to academe from industry is an understanding that more than simply developing technology, you must make something that will sell. “It can’t just be something interesting, but it must be something useful, and sufficiently useful so that it’s worth putting up the money, going through training and switching the way they’re doing things.”

Another lesson he learned on the job is that managers and marketers are useful. “In grad school, I figured they were a necessary evil. Now, I have a better opinion of them,” he says.

“I hope to be a good teacher,” Midkiff says. The classroom atmosphere he’s striving to achieve is one that’s energetic, interesting and spiced with a little humor. “I hope my students learn a lot and leave well-qualified for the profession.”

continued on next page
As for those young sons, Midkiff says, “I hope they’re better teenagers than I was. I really enjoy having three boys. They try my patience sometimes, but they surprise me with their cleverness and sense of humor, too.”

Saeed Mohammadi: A New Father

“I hope I can learn as fast as she does,” Saeed Mohammadi says of his two-year-old daughter, Raha, and his passion for spending time with her. “These days I play with my child when I have free time. She likes to be outside, so I take her swimming and to the playground.”

Watching her learn can be amazing, he says. “She distinguishes two languages perfectly. At home she speaks Persian and at daycare she speaks English. An interesting thing about her is that when she’s with the two of us, she speaks Persian. When there are three or four people around, she realizes she needs to speak a language everybody understands.”

His dream is a simple one—“To be very good at what I do. And everybody wants to be a good person. Same thing here.”

His interest in electrical engineering was more evolutionary than life-long, Mohammadi says. “I wasn’t one of those kids who invented a computer at age five. I was drawn to a trend at that time—if you could, you would go into electrical engineering. In Iran, you have to take an exam to enter college, and to get in you have to be really good. The best choice in science at that time was electrical engineering.”

He graduated from Iran University of Science and Technology, where Professor G.R. Lahiji inspired him in a class on electronic circuits and solid state physics. “I hope to embrace some of his style,” Mohammadi says. “The way he taught was very interesting. When he was ending a session, he would provide a question that nobody knew the answer to, so everyone would be curious, wondering, ‘What is this?’ The next session, he would repeat the question and then answer it. That would keep everybody interested.”

Mohammadi then headed for Canada to earn his master’s at the University of Waterloo, then the University of Michigan, where he earned his PhD in 1999. He’s been doing postdoctoral work there since.

This fall, he’s at Purdue, continuing his work with William Chappell, who also came to Purdue from Michigan this year. They’re setting up a wireless circuit/electromagnetics lab. “We have been working on a project together, and we will continue that at Purdue,” Mohammadi says.

He’d also like to focus on researching novel devices for RF/optoelectronic applications; integration and packaging; and Si-based MMICs using advanced Si processes.

One of his hopes is to encourage undergraduates to stay on for graduate studies. “I want to bring an enthusiasm so they will stay at Purdue. There are a lot of good students who go out of state. This is one of my first goals.”

Mithuna Thottethodi: Nature Photographer

Mithuna Thottethodi owns eight cameras, and that should pretty well tell you how he enjoys spending his spare time. Rather than zooming in, he backs up for wide-angle shots, capturing grand nature scenes such as the Rocky Mountains, Yellowstone National Park and the Grand Tetons.
His favorite spot so far for photographing nature: Glacier National Park, because of the scale of the canyons and the mountains.

“I like to visit national parks and beautiful places,” he says. And he preserves their grandeur on film, most in color but some in black-and-white. “I’m pretty serious about my photography,” he acknowledges.

It’s a hobby he started as a child in India. “My father is a good photographer. He made me read a lot of books and learn the theory before he let me handle the camera,” Thottethodi recalls.

Photography would not be his profession, however. Thottethodi earned a bachelor’s in computer science and engineering at the Indian Institute of Technology in 1996, and then came to Duke University for his PhD, which he’ll finish this year. He comes to Purdue in January, 2003.

“Teaching and research, I enjoy it all,” he says. “Teaching is an important tool in the whole academic tool bag. I like to get students to ask the right questions rather than get the right answers straight away. It has a snowball effect. When students are finding out things themselves, they get what you teach, and they will go out and learn more on their own.”

In the teaching arena, he’s especially interested in updating existing courses and developing new courses at Purdue.

Thottethodi says his research interests are broad, primarily in the area of computer architecture, including processor, memory subsystem and interconnection architectures. Currently, he’s focusing on high-performance interconnection networks and communication infrastructure for distributed architectures.

He knows firsthand the value of supplementing lecture with hands-on applications. “Most of my tinkering grew out of what I read. Reading caught my imagination, and I started tinkering with stuff.”

That led him to his career, and, he says, “I’m better at science and technology than humanities and literature.”
Mark J. T. Smith, a professor of electrical and computer engineering and former executive assistant to the president at the Georgia Institute of Technology, will take the helm of ECE as the new head on January 1, 2003.

“Dr. Smith was our top candidate, and he will bring some fresh ideas to Purdue,” says Linda P. B. Katehi, the John A. Edwardson Dean of Engineering at Purdue and ECE professor. “He is a leading researcher in the field of signal processing, and his teaching record is outstanding.”

The position was vacated by Kent Fuchs who left Purdue in July 2002 to become dean of engineering at Cornell University.

Leah Jamieson, Ransburg Professor of Electrical and Computer Engineering, is serving as interim head until Smith arrives on campus.

Smith comes to the University and the School at an opportune time. A five-year strategic plan is in place (see our spring/summer 2002 issue) and in September 2002, Purdue announced an unprecedented one billion dollar capital campaign.

“I was struck by this administration’s enterprising vision and its commitment to focus strategically on cross-disciplinary collaboration. This, in concert with Purdue’s renowned faculty and outstanding student body, makes joining the School of Electrical and Computer Engineering extremely exciting for me.”

— Mark J. T. Smith

“Being a leader in the new technological workplace requires not only sound engineering skills and creativity, but the ability to work in teams and to interact in a multicultural, multidisciplinary environment.”

As executive assistant to Georgia Tech president Wayne Clough for...
four years, Smith was a prominent figure on campus and interacted with all the institute's constituencies, including the alumni and athletic associations, the Georgia Tech Foundation, the deans, the faculty, and the students. “I was fortunate to have had the recent experience of being a part of Georgia Tech’s senior administration during a time of unprecedented growth in research programs, educational initiatives, building construction, international outreach, and commercialization activities. “Some of the initiatives were extremely ambitious for a school the size of Georgia Tech, like the $180 million Technology Square project, the establishment of a logistics institute in Singapore, and the creation of more than 50 endowed chair positions for eminent faculty scholars.”

The past six years has been a dynamic time in Georgia Tech’s history. A $300 million capital campaign had just begun when Smith joined the president’s office—a campaign that raised $700 million, more than doubling the original goal.

ECE plans to raise $125 million, an objective which Smith plans to meet. “Purdue is exceptionally well positioned to make quantum strides over the next five years. I look forward to working with the ECE faculty, staff, and alums to move the School into the spotlight of preeminence.”

Smith calls ECE’s strategic plan an “excellent roadmap” and already has plans for actively engaging the alumni. “Over the next five years ECE intends to increase its faculty size by approximately 40 percent, construct new state-of-the-art facilities, and build its endowment for scholarships, professorships, research, and curriculum innovation,” he says.

Smith is the first African American to head a Purdue School of Engineering. During his time serving in the Office of the President, Georgia

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Tech became the nation’s top producer of African American engineers at the BS, MS, and PhD levels. Smith led the formation of a university coalition, EMERGE (Empowering Minority Engineers/ Scientists to Reach for Graduate Education), that encourages minority students to pursue graduate degrees in engineering and science.

“Being a leader in the new technological workplace requires not only sound engineering skills and creativity, but the ability to work in teams and to interact in a multicultural, multidisciplinary environment,” Smith says.

Diversity and learning innovation are both major pillars of the ECE strategic plan. Purdue is the birthplace of the National Society of Black Engineers, home to strong minority engineering and women in engineering programs, and home to a diverse international student body. “These are important attributes that will allow us to further enrich the educational experience offered to all of our students.”

Smith grew up in Queens, New York. In 1974, he entered MIT as a freshman, initially considering biomedical engineering as a major. In his sophomore year, his interests switched to digital signal processing, which remained his area of concentration throughout his educational career.

After obtaining a bachelor of science degree in electrical engineering and computer science at MIT in 1978, Smith earned the master’s and doctoral degrees in electrical engineering from the Georgia Institute of Technology in 1979 and 1984, respectively.


The first year he made the Olympics was the year that the U.S. boycotted to protest the Soviet Union’s invasion of Afghanistan. “I was training in Europe when I first heard that President Carter was not going to let us compete. The boycott was a heart-breaker. Fortunately, I was young enough at the time and was able to make the team again in 1984.” Twelve years later in 1996, the Olympic Games were held in Atlanta. As a former Olympian, Smith was one of the last ten runners to carry the Olympic torch to the stadium for the opening ceremony.

Smith joined the faculty at Georgia Tech in December 1984 where he soon became a popular lecturer and an accomplished researcher in signal processing. He has co-authored more than 190 peer-reviewed papers, four of which have received “best paper” awards from the Signal Processing Society of the IEEE. He has been an IEEE Signal Processing Society Distinguished Lecturer and is Fellow of the IEEE. Two of his students have received Sigma Xi Research Awards for their theses. Smith also has received two teaching awards from Georgia Tech.

Co-author of four textbooks, Smith says one of his most memorable career milestones was when he finished his first book, Introduction to Digital Signal Processing: A Computer Laboratory Text-
The concept of a text with integrated software is commonplace today, but back then, in the days of DOS and 5½” floppies, it was new and cutting-edge,” he says.

In 1991, Smith moved with his family to the Lorraine region of France to teach at Georgia Tech’s new campus in the city of Metz. “That move was particularly exciting for us,” he says of his two tours of duty teaching students from all over Europe and the U.S. “We lived within walking distance from campus, which was a pleasant change from the 25 minute commute to office in Atlanta.

Smith’s family includes wife, Cynthia, and three children—Stephen, 16, Kevin, 14, and Jennifer, 11.

Mark J. T. Smith at a Glance

Most Recent Position
- Professor of Electrical and Computer Engineering and former Executive Assistant to the President of the Georgia Institute of Technology
- Acted as the president’s chief liaison, served as a link to numerous constituencies on and off campus, and carried out actions on behalf of the president
- Taught at Georgia Tech Lorraine in Metz, France, 1991 and 1993

Education
- PhD (EE) Georgia Institute of Technology, 1984
- MS (EE) Georgia Institute of Technology, 1979
- BS (EE and CS) Massachusetts Institute of Technology, 1978

Research Interests
- Image and video processing, telemedicine, object detection and recognition, and data compression for transmission and storage

Distinctions
- Member, NSF Advisory Board for Microelectronic Information Processing Systems, 1991-1993
- Member of the IEEE Signal Processing Society Board of Governors, 1995–1997
- Georgia Tech Outstanding Teacher Award, 1988
- IEEE 1989 Signal Processing Society Best Paper Award
- 1992 IEEE Signal Processing Society Senior Award
- Fellow of the IEEE
- Co-author of four textbooks
- Author of 190 peer-reviewed publications

Hobbies
- Oil painting, swimming, fencing
- Member of the U.S. Olympic Team, 1980, 1984
Purdue ECE's award-winning Eta Kappa Nu Beta Chapter takes Greater Lafayette by storm.

By Kathy Mayer

They’ve eaten at Lafayette’s South Street Smokehouse, picnicked at West Lafayette’s Happy Hollow Park and played miniature golf together. That’s their fun side.

They’ve hosted speakers from Microsoft, GPS Systems, GE Med Systems and dozens more. That’s their link to industry.

They’ve served up donuts, bagels, coffee and juice in the Electrical Engineering Lounge. That’s how they fund their activities.

And they’ve cleaned streets and puppy cages, raised money for a soup kitchen and homeless shelter, shared their talents with a children’s science museum and tutored fellow ECE students. That’s how they contribute to their community.

Meet the 100-plus members of Purdue’s Eta Kappa Nu (HKN) Beta Chapter, the national electrical and computer engineering honor society. From these activities and more, they’ve made friends, learned about industry, mastered leadership skills and given of themselves.

Landing ‘Most Active’ Award

They’ve also won awards—most notably and recently, the HKN Outstanding Chapter Activities Award—for the 18th time in 19 years. And for this year’s award, they competed against 206 other HKN chapters to bring home the trophy.

“Purdue’s HKN chapter epitomizes what a member of HKN stands for—excellence in academic performance and excellence in service to others,” says Alan Lefkow, chair of the national committee that once again named the Boilermaker chapter “most active.”

“They have an unusually large program of activities for their fellow students, the school and the community,” Lefkow says. “And they raise money to give scholarships, participate in fundraising for those outside the college and assist with tutoring.”

With a tradition of action, Purdue’s HKN is wired to win.

Besides a hefty calendar of regular activities, an added project likely helped land the latest award, says senior Amanda Doyle, fall 2002 HKN president. “We took a lab that was basically falling apart and turned it into a very nice facility.”

Michael Powell (BSECE ‘99), a former president now completing his PhD at Purdue, says, “Ten to 12 years ago, the lab had little equipment. Now, it’s been entirely renovated and has digital oscilloscopes, a logic analyzer and four full lab stations. Everything’s brand new, all donated by Tektronix.”

Another contributing factor to the repeat wins is continuity, Powell says. “Old presidents stick around and provide informal advice to current officers.”

Thomas Talavage (BSCEE ‘92, MSEE ‘93), former member from ’91–’93 and one of the group’s faculty advisors, agrees that’s important. “Members come in as juniors, and many remain active through their doctorate. Many put in six to seven years, and that loyalty has been truly key to the success of the organization.”

“We move and progress together,” Doyle says of the group’s members. “We know where we want to go.” This academic year, they’ll continue twice-a-month supper socials, regular industry programs, daily lounge operations and on-going community service. They’re also planning a renovation of the lounge (estimated completion in the fall of 2003) and hope to beef-up their tutoring program. “Tutoring for sophomore-level classes is a great way to help younger students, so we want to see it really take off,” Doyle says.

Reaping Individual Rewards

The payback for HKN involvement will be lifelong, alumni promise.

“I was a member at Purdue in 1948 and the HKN credential was very helpful on a resume then,” recalls Victor Green (BSECE ’49), now retired from Hughes Aircraft. “When I knew working
cohorts who were HKN, there was a bit of a common bond based on that."

Michael Sears (BSEE and MSEE ‘69), now senior vice president and chief financial officer of The Boeing Company, says, he, too, experienced the benefits first-hand as a Boilermaker. “My days as an HKN member at Purdue are an integral part of who I am and what I have achieved. We’re all a combination of our intellect and experiences. And HKN, with its emphasis on scholastic, as well as personal and professional development, provides a great foundation to build on.”

That’s good news for Doyle, who says she hopes HKN will give her “a foot in the door” when she’s on a job interview and finds someone who was a member during college.

“Membership can pay big networking dividends beyond that simple opportunity to get to know others in your class,” Talavage says. “Everyone has different strengths and weaknesses. HKN is made up of people who can help you, and people can seek you out as a resource. No longer are others just people occupying a desk in the classroom. They become your friends.”

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About 200 undergraduate students are invited to join each semester. “Eligibility is entirely academic-based,” Talavage says. Students in the upper 25 percent of the junior class and upper one-third of the senior class receive invitations.

The chapter is organized into about a dozen committees, from resume book to lab, homework, community service and other projects.

Listening When Industry Talks
About twice a month, members meet representatives from industry, who come to campus to speak. “They talk about the company and their projects, to give us a chance to see what the real world is like,” Doyle says. “They’re well attended. We have a good following with them. And most companies are willing to send someone out. It’s a great way for them to meet people as well.”

Taking a Break
Sharing a meal at a local restaurant or spending time together at a social takes a high priority for the group. Those events, generally on a Friday, are dubbed “TG’s,” a shortened acronym for the “Thank goodness it’s Friday” adage.

“We’re very work-oriented, so social events force us to get out and do things, which can be a good break,” Powell says.

“The undergraduate curriculum is pretty demanding and the majority of students who go into ECE are focused on their studies, so these dinners are a good opportunity for them to get out and meet people and to interact,” Talavage says. Professors and other campus friends often attend, too.

HKN chips in $3 toward each member’s expenses, too. “It’s a good way to have some fun and encourage people to get out,” Doyle says.

The group also prepares a student resume book each year and hosts pledge banquets and spring and fall picnics.

Doing For Others
When it’s time to help the community, HKN members literally hit the streets—volunteering, for example, in Greater Lafayette’s Annual Clean Sweep in April. You’ll also spot HKN members helping out at the Halloween Boo at the Zoo party for kids, planting trees for the West Lafayette Parks Department, lending some muscle to Habitat for Humanity’s home construction program, and improving Imagination Station, a hands-on science and space center for children in Lafayette.

The Tippecanoe County Humane Society is another beneficiary of their contributions of time, with members helping clean and care for animals and their temporary homes at the local shelter.

Financially, they give their support via Lounge profits to Lafayette Urban Ministry and the Salvation Army, two local homeless shelters; and to St. Anne’s Soup Kitchen, which feeds residents in need. Their lounge profits for these causes are boosted by the annual Turkey of the Year Award, given to the School’s professor who collects the most money in votes and earns the dubious honor of dressing up as turkey for a day.

“Purdue students are the lifeblood of our homeless shelter and our work helping families with emergency needs,” Joe Micon of Lafayette Urban Ministry says of the HKN contributions. “We couldn’t do what we do without their gifts of time, talent and treasure.”

These community activities are vital, not only to the agencies that benefit, but also to the students, Talavage believes. “Social service is encouraged because one of the important things about HKN is a belief that we need to give back. Just being an honor society is not of any great benefit. Just rewarding ourselves doesn’t serve much purpose. One of the big, key points of HKN is that we want to avoid that sort of attitude. So it’s important that our members go out and serve the local community and our academic community.”
Running the Lounge

Operating the Lounge in the Electrical Engineering building serves two purposes: money for activities and a food and caffeine source for all students in the building. Started in the mid 1960s, today’s students believe, for years the offerings were coffee and donuts. They’ve recently been expanded to include gourmet coffee, bagels, cookies, chips and even frozen lunches that can be heated in Lounge microwave ovens.

The Lounge is staffed 10 hours a day Monday through Friday by two HKN members, honorably dubbed “POD” for “person on duty.” Every HKN member must volunteer one hour a week in the Lounge.

Alumni are invited to stop when visiting campus. It’s a chance to re-live that sugar-and-caffeine cocktail of your college days and to meet some of today’s active, high-achieving members of Purdue’s award-winning HKN chapter.

HKN volunteers spent a Saturday at the Tippecanoe County Humane Society sprucing up the facilities and walking the dogs that have found a temporary home at the shelter.

Check out HKN’s Web site at http://shay.ecn.purdue.edu/~hknweb/HKN/.
ECE Alumnus Negotiates for

Marwan Muasher, Jordanian Minister of Foreign Affairs, developed his world-renowned diplomacy while organizing events that united American and Arabian students at Purdue.

By Emil Venere

Marwan Muasher just may be the most politically influential alumnus in the history of Purdue University. One moment he's jetting off to Tokyo to discuss economic and foreign policy issues and the next he's trekking to Washington to meet with President George W. Bush.

As Jordan's foreign minister, he is that nation's equivalent to U.S. Secretary of State Colin Powell. "You can imagine what kind of life he's leading now," says his former thesis advisor, David Landgrebe, professor emeritus of electrical and
Peace in the Middle East

computer engineering. “But he’s still the most humble person you’d ever want to know.

“He’s a very unusual guy.”

Muasher earned doctoral, master’s and bachelor’s degrees in electrical and computer engineering from Purdue in 1981, 1978 and 1977, respectively. Although his specialty is remote sensing, he worked in the field for only a short time before embarking on a political career. However, Muasher said his engineering training has been critical to his success in politics.

“A Purdue education provides you with a down-to-earth approach to solving problems,” he says. “I have always felt that Purdue gave me a very solid educational preparation.”

Muasher has been a major figure in talks this summer aimed at mediating peace in the Middle East. While temperatures hovered near 90 degrees in Washington, the relentless July sun wasn’t the only source of heat inside the beltway. The world of international diplomacy simmered amid the high-tension buzz of Middle Eastern affairs, as delegates from three key Arab countries met with President Bush and Secretary of State Powell.

Their mission: to begin the process of planning a Palestinian state, even as a new suicide attack in Tel Aviv claimed the lives of three Israelis and conflict in the region showed little sign of abating.

Powell, joined by his counterparts from Jordan, Egypt and Saudi Arabia, faced a crowd of reporters outside the State Department on July 18 to update journalists about the progress of talks. Muasher rose to the occasion, proclaiming that his people had reason for optimism. Talks with American officials had improved prospects for peace in the Middle East, he said, because Washington was now committed to a timeline for establishing a Palestinian state within three years—by mid-2005. The four men then ended their news conference, striding away as reporters barked a few final unanswered questions.

“It was just another day in the life of Muasher. The 46-year-old Jordanian has been involved in the peace process for more than a decade. He was Jordan’s spokesman during the groundbreaking Madrid peace conference in 1991, has met with Yasser Arafat countless times and was hand-picked by Jordan’s late King Hussein to be his nation’s first ambassador to Israel in 1995. He has won several prestigious awards for public service, including the Diplomat of the Year Award from the Los Angeles World Affairs Council in 2000.

Muasher says his interests in diplomacy can be traced to his days at Purdue. “I was interested in exposing Arab culture to the United States and just building bridges between Americans and Arabs in general,” says Muasher, who headed the Organization of Arab Students at Purdue. “We used to do such things as organize an annual Arab Night, in which we had a big dinner in the North Ballroom. We had fashion shows and plays and different activities to highlight Arab culture.”

Landgrebe says that Muasher was not the typical engineering student. “He was a good student,” Landgrebe says. “But you could already see that he was more than just a technical guy. He just fit in wherever he needed to fit in. He invited my wife and I to the Arab students’ meetings. He was up on the stage dancing Arabic dances. He was very gregarious, but yet quiet mannered.”

Muasher spent six years at Purdue, coming here in 1976 to complete his bachelor’s degree, which he had begun at the American University of Beirut, and leaving in 1982 after earning his PhD. No one could have anticipated his political future by the title of his doctoral thesis: Multistage Classification of Multispectral Earth Observational Data.

“It’s just a very unusual situation,” Landgrebe says. “Here’s a guy with three degrees in electrical engineering, and yet he’s on the world scene now as a top diplomat.”

“It’s a challenging job because you have a chance to have a say in policy and work towards peace.” — Marwan Muasher
Peace in the Middle East continued

Shortly after returning to Jordan, Muasher started cultivating his political career. “I worked for a while in remote sensing and research, but I always had a liking to public service and public work,” says Muasher, who comes from a prominent Christian family in Salt, located about 20 kilometers from Jordan’s capital, Amman. “I started a political column in a daily newspaper, The Jordan Times, just on the side while I was working in engineering. I did that for eight years, and that sort of provided an opening for me to jump into diplomacy.

“There was a cabinet change in Jordan and the prime minister asked me to become his press secretary because of my writing, even though I was not a professional journalist.”

Muasher quickly ascended the political ladder. From 1991–1994, he was director of the Jordan Information Bureau, the information arm of the Jordanian Embassy in Washington. Shortly after his arrival in Washington, Iraq invaded Kuwait and Muasher found himself in the unenviable position of describing Jordan’s position—a position that did not endorse the Gulf War.

Also in 1991, Muasher was chosen to be Jordan’s spokesman for the high-level peace talks in Madrid. “That led to my being involved in the peace process until we signed a peace treaty with Israel in 1994,” he says.

Muasher then was named Jordan’s first ambassador to Israel, followed by his appointment to the Jordanian cabinet as minister of information. One year later, he was Jordan’s ambassador to the United States in Washington, where he remained for five years until he was named minister of foreign affairs as part of a 27-member government sworn in Jan. 14, 2002.

Muasher is essentially Jordan’s top diplomat, a position he says he relishes despite its daunting demands. He does, however, acknowledge the stressful nature of his job, especially considering his integral role in efforts to mediate peace between the Israelis and Palestinians.

“It’s a challenging job because you have a chance to have a say in policy and work towards peace,” says Muasher, who lives in Amman with his wife Lynn and two children, 12-year-old Omar and 9-year-old Hana.

“I enjoy public service,” he says. “You feel a sense of mission because it’s not just a job, and that gives you motivation to withstand the pressure.”

Regardless of his high station in life, Landgrebe said, Muasher hasn’t lost one of his most endearing traits: humility. “He’s a very modest guy,” Landgrebe says of Muasher, who was honored with an Outstanding Electrical Engineer award in 1999, the same year he received an honorary doctoral degree from Purdue. “While I was advising him, I would occasionally ask him ‘What do your folks do back in Jordan?’ He would say, ‘Oh, they have some businesses.’”

It turned out that the business he vaguely alluded to was a major corporation, the Jordan Sulfur Chemicals Co., and that his family also had significant ties to Jordan’s power structure: two relatives were members of the nation’s National Assembly, and a cousin was in the Jordanian Senate.

Upon hearing that Landgrebe was retiring earlier this summer, a busy Muasher made it a point to correspond with his former mentor. “He met with Arafat on a Saturday, and I got the message back from him on Sunday,” Landgrebe says. “That’s just the kind of guy he is.

“I joke with him when I tell him that I’m sure he will be king before long. But he’s still very much a Boilermaker. He wants his kids to see Purdue ballgames, and he follows his alma mater.”

Muasher has been praised by international journalists for being unusually plain-spoken and accessible to the media, even during times of

“A Purdue education provides you with a down-to-earth approach to solving problems. I have always felt that Purdue gave me a very solid educational preparation.”

—Marwan Muasher

Purdue education provides you with a down-to-earth approach to solving problems. I have always felt that Purdue gave me a very solid educational preparation.”

—Marwan Muasher

Purdue education provides you with a down-to-earth approach to solving problems. I have always felt that Purdue gave me a very solid educational preparation.”

—Marwan Muasher
military conflict in the Middle East. In 1995, shortly after becoming Jordan’s Ambassador to Israel, a feature article in the Jerusalem Post made the following observation: “Ask people their views of the new ambassador, and they refer to his professionalism, civility and accessibility. He is considered a consummate gentleman.”

Landgrebe says he has been impressed by Muasher’s ability to set people at ease. “He came back to Purdue about four years ago and gave a seminar in the Stewart Center touching on Jordan’s viewpoints on how to achieve peace in the Middle East,” Landgrebe recalls. “In the crowd there were representatives from the Jewish community.

“He delivered his talk and then took questions. After the meeting we had a reception for him in the Union and he invited members of the Jewish community to join him. By the end of the night, we were all standing around with punch and cookies, laughing and joking with one another.

“He was so smooth. It was just classic Marwan.”
Alumni returning to campus for homecoming celebrations this fall were witness to a watershed moment in the history of the University. President Martin C. Jischke announced the official public launch of an unprecedented $1.3 billion dollar capital campaign to support the University’s strategic plan to reach preeminence in its broad strategic areas of learning, discovery, and engagement.

The new construction and renovation plans developed by the Schools of Engineering alone represent the largest single investment ever made in new facilities in any engineering program in the nation.

ECE’s lion’s share is $128 million, the largest share to be raised by any department on campus, and one-tenth of the University’s overall goal. The School has already raised over $53 million, most of which was earmarked for the Nanotechnology Center.

Purdue ECE ranks as one of the top ECE programs in the nation. U.S. News and World Report ranked ECE’s graduate program ninth. In a separate ranking category, corporate recruiters rated Purdue engineering sixth in the nation.

That doesn’t mean there isn’t room at the top. “ECE wants to lead, not follow,” says Leah Jamieson, Ransburg Professor of Electrical and Computer Engineering and interim head. “We intend to have a program that ranks in the top five electrical and computer engineering programs in the nation.”

Purdue ECE alumni and faculty are testaments to the first rate education available from ECE. An ECE faculty member was credited with being the first man in history to broadcast speech by wireless telephony. An ECE alumnus built the first all-electronic television receiver. The first exercise responsive pacemaker was developed under the direction of an ECE faculty member. Contemporary ECE faculty and alumni are pioneers in parallel data processing, high speed optical detectors, and multi-spectral data processing.

In short, if you’ve ever listened to a radio, watched TV, or used a computer, you can thank a Purdue ECE faculty member or alumnus for helping to make it possible.

“Graduating from Purdue is where it all started for me,” says Jack Shaw (BS ’62, HDR ’98), President and CEO of Hughes Electronics Corporation. “My years at Purdue prepared me well for the world that I had to exist in. Purdue not only gave me a great academic education, but probably, more importantly, I was taught how to solve problems and deal with people in situations that I had not experienced before.”

Shaw has traveled to over 65 countries and says that Purdue’s reputation is known the world over. “In each of these countries around the world, even those that seem pretty much out of the way, Purdue is recognized as an outstanding educational institution.”

To maintain that reputation, ECE has a strategic plan in place to increase faculty size; increase endowments for scholarships, professorships, research, and curriculum innovation; and build new state-of-the-art facilities to provide students and faculty with the high quality environment they need.

It’s a tall order and the School has called on its most powerful constituency for help: the alumni. The ECE Campaign Advisory Committee, spearheaded by Margarita Contreni, the School’s director of development, has been formed to help guide the campaign.
Shaw has joined up with other distinguished alumni to participate in the committee. “I consider it a great honor to be a part of a campaign that will help expand on the already outstanding reputation of ECE at Purdue.”

Contreni and the committee will be looking for ways to increase the rate of giving. “The alumni are potentially the greatest strength of public universities, and the growth of alumni support is central to the success of this campaign. Every donation from alumni and from our corporate and foundation partners is crucial to achieve our vision for discovery, learning, and engagement.”

ECE facilities goals are the first priority from a time perspective because they will enable the School to expand the number of faculty and research and educational programs. Undergraduate enrollments have grown by over 30 percent in the past five years, and research expenditures have doubled. ECE’s success in teaching and research has created significant problems in providing quality space for laboratories and offices for staff and faculty. Faculty members have developed innovative instructional labs that cannot be implemented, and they have obtained major research grants for which experimental laboratory space cannot be provided. Curriculum has changed and is highly design-intensive, with major laboratory projects requiring flexible space for group work.

Space allocated to ECE’s teaching and research program is approximately half that of its top competitors on a per-faculty and per-student basis. Per researcher, ECE’s space is among the lowest in Purdue’s Schools of Engineering.

There has never been a better time for a capital campaign of this magnitude.

ECE has earmarked $35.5 million for construction of a new learning and discovery facility and to remodel the EE and MSEE buildings. The new facility will replace Duncan Annex, a windowless brick box that was originally constructed in 1941 for high voltage experiments. The new building will provide space for ECE research in computer engineering, computer vision, robotics, and artificial intelligence. It will provide space for meeting facilities for students and office space for 100 graduate research and teaching assistants who are currently housed in ENAD.

EE and MSEE will also be renovated. The original section of the EE building was constructed in 1924, with wings and additions added in 1926, 1932, and 1940.

“Students need a place to study,” says Robert Pierret, Assistant Head for Facilities, Planning, and Staff and ECE professor. “Buildings alone will not establish preeminence, but to remain at the forefront of invention and discovery, researchers must have the facilities that can house their laboratories and students and accommodate the changing requirements of a dynamic field.”

ECE’s highest priority is faculty and student support. ECE plans to increase its endowment by at least $25 million to enable the School to continue to recruit and retain world-class faculty and students.

The School currently has 67 faculty members and plans to recruit at least 20-30 additional faculty members over the next five years. Endowed professorships will provide a competitive advantage in recruiting the best faculty and in providing the resources for them to succeed. The additional professors will reduce the student-to-faculty ratio and facilitate branching out in new areas of research. The

continued on next page
increased interaction between students and faculty will help create an environment of intellectual excitement and enthusiasm for discovery and scholarship and allow students to partake more in research projects as undergraduates, better equipping them for situations and problems encountered outside the textbook.

Endowment funds will also provide increased opportunities for students in the form of fellowships, scholarships, and undergraduate research. “We are aggressively and actively recruiting the best graduate students in the country and in the world,” says Andrew Weiner, Scifres Distinguished Professor of Electrical and Computer Engineering and director of ECE graduate admissions. Weiner also serves on the School’s Faculty Development Committee. “Funding that allows us to offer fellowships to top students is extremely important to our graduate recruiting efforts.”

An additional $14.5 million campaign goal will be directed to instructional programs, curriculum development, and career planning for students.

Tom Engibous (BSEE ’75, MSEE ’76, HDR ’97), Chairman, President, and CEO of Texas Instruments Inc., is one of the many alumni who have joined ECE’s campaign, and like Shaw is a member of the Campaign Advisory Committee. “My time at Purdue was a turning point,” says Engibous. “It was here that I began to understand just how big an impact technology has on the world. I want other young men and women to have opportunity for that same kind of discovery.”

ECE’s campaign goals and strategic plans are bold and unprecedented, but achievable, according to Contreni. Support from alumni and friends will help ensure that objectives are met, one by one. The result will be a School with unlimited opportunity for learning, discovery, and engagement, where faculty and students fulfill their potential and maintain the legacy of a world-renowned institution.

The Campaign continued

ECE Campaign Volunteers
ECE alumni and faculty will provide the leadership and oversight of our campaign initiative. The following individuals have volunteered to serve either on the University’s campaign steering committee or on our School campaign steering committee, which is still under development.

Alumni
Gordon M. Binder, BSEE ’57
Los Angeles, CA
Michael J. Birck, BSEE ’60, HDR ’95
Hinsdale, IL
Eugene A. Cernan, BSEE ’56, HDR ’70
Houston, TX
Thomas J. Engibous, BSEE ’75,
MSEE ’76, HDR ’97
Melissa, TX
Frank S. Greene, Jr., MSEE ’62
Sunnyvale, CA
Jack Kelble, BSEE ’65
El Segundo, CA
Michael M. Sears, BSEE ’69,
MSEE ’69, HDR ’02
Lake Forest, IL
Donald R. Scifres, BSEE ’68, HDR ’01
Los Altos, CA
Jack A. Shaw, BS ’62, HDR ’98
Orland, IN
Thomas J. Sheehan, BSEE ’64,
MSEE ’65
Kokomo, IN
Patrick S. Wang, BSEE ’72, MSEE ’72
Repulse Bay, Hong Kong

Faculty
Jan Allebach
Rashid Bashir
Leah Jamieson
David Landgrebe
Mark Lundstrom
Catherine Rosenberg
Mark Smith
Andrew Weiner
Universities across the country are undergoing, or have recently concluded, billion dollar capital campaigns.

### Billion Dollar Campaigns in Higher Education

<table>
<thead>
<tr>
<th>Institution</th>
<th>Campaign End Date</th>
<th>$ Goal</th>
<th>$ Amount Raised</th>
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<tr>
<td>Cornell University</td>
<td>1995</td>
<td>1.3 B</td>
<td>1.5 B</td>
</tr>
<tr>
<td>Massachusetts Institute of Technology</td>
<td>2004</td>
<td>1.5 B</td>
<td>1.27 B</td>
</tr>
<tr>
<td>Ohio State University</td>
<td>2000</td>
<td>1.0 B</td>
<td>1.23 B</td>
</tr>
<tr>
<td>Pennsylvania State University System</td>
<td>2003</td>
<td>1.0 B</td>
<td>1.02 B*</td>
</tr>
<tr>
<td>Princeton University</td>
<td>2000</td>
<td>900 M</td>
<td>1.14 B</td>
</tr>
<tr>
<td>Stanford University</td>
<td>2000</td>
<td>1.0 B</td>
<td>639 M*</td>
</tr>
<tr>
<td>University of California at Berkeley</td>
<td>2000</td>
<td>1.1 B</td>
<td>1.44 B</td>
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<tr>
<td>University of Illinois System</td>
<td>2000</td>
<td>1.5 B</td>
<td>1.52 B</td>
</tr>
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<td>1997</td>
<td>1.0 B</td>
<td>1.4 B</td>
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<tr>
<td>University of Southern California</td>
<td>2002</td>
<td>2.0 B</td>
<td>1.89 B*</td>
</tr>
<tr>
<td>University of Texas at Austin</td>
<td>2004</td>
<td>1.0 B</td>
<td>972.9 M*</td>
</tr>
<tr>
<td>Washington University</td>
<td>2004</td>
<td>1.3 B</td>
<td>1.11 B*</td>
</tr>
<tr>
<td>Yale University</td>
<td>1997</td>
<td>1.5 B</td>
<td>1.7 B</td>
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</table>

*campaign has not ended

### Gift Income Comparisons

![Graph of Gift Income Comparisons](chart.png)

- **Big Ten Average**
- **Peer Institution Average**
- **Purdue**

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*The Purdue University School of Electrical & Computer Engineering*
I would like to thank each and every individual, company, and foundation for their support of the School of Electrical & Computer Engineering during fiscal year 2001–2002. More than 2,470 donors contributed gifts and pledges totaling almost $37 million. This represents an increase of 12 percent in the number of donors and 110 percent in the amount of support!

Hundreds of alumni and corporate partners also sponsored research projects, provided speakers for seminars, and counseled our student organizations. Because of this level of investment, ECE is among the top programs in the nation.

We, your friends and colleagues, thank you.

ECE Honor Roll 2001-2002
An Investment in our School

Individuals

John Abbey
Michael Abraham
Valentin Abramzon
Michael & M. Kathryn Adams
Neal Adams
James Adams
Avinash Advani
Robert Agnew
Muhammad & Salmina Alam
Larry Alber
Ralph & Eleanor Albon, Jr.
Eldon & Donna Aldred
Thomas Alexander
Brian & Nancy Allain
Craig Allen
H. Clyde & Ivy Allen
John Allen
Mark & Valerie Allen
William & Sandra Allen
James & Lisa Alfred
Hisham Altalib
Jason Ambler

Fredric Amt
MD. Amyeen
Charles & Maudie Anderson
Chester Anderson
David & Tami Anderson
Robert Anderson
James & Geraldine Anglin
Lanny Anglin
Karol & John Antrim
Todd Anzaleno
Wallace Arakawa
Scott Arboleda
Richard Arend
Max Arens
Eric Armstrong
James Armstrong
Calvin & Margaret Arnold
Neil Astrike
Clayton Atkins
James Atkinson
David Atwood
Ronald & Sandy Au
Richard Auchtelonie
Khurram Awan
James & Sally Baas

James Bach
Arthur Baggeroer
Maureen Bagley
David Bahler
David Baier
Charles Bailey
Thomas Baird
Donald & Cora Baker
Gary Baker
Leander Baker, Jr.
Lori & Harold Baker
Mary Baker
Peter & Natalie Baker
Robert & Donna Baker
Roderick Baker
Sarah & Leslie Baker
Thomas Baldwin
Robert Bates
Ronald Balka
Charles & Pamela Ball
Richard Ball
Roger & Mary Ballard
Steven & Kathie Balser
Douglas Balster
Donald & Jean Banner

Ernesto Barajas
Wayne & Patricia Barden
Joseph & Mary Barnstead
Peter Baron
Mark Barone
Chad Barr
Paul Barr
David & Phoebe Barta
Douglas & Debra Bartlett
Robert & Martha Bartlett
William Bartol
Steven Bass
Robert Bassett
Kenneth Bassinger
William Batalis
John Batchelor
James Bates
Wayne Bates
Charles & Dita Batteau
Peter & Connie Batters
James Bauerle
Daniel Bauermeister
Robert Baugh
Douglas Baumgartner
Audrey Baur

Richard Baxter, Jr.
Okan Baysan
Jack Beal
Robert & Virginia Beale
Fred Beamer
Ernest Beane
Anthony Beasley
Gregory & Jennifer Beasley
Jack & June Beasley
Robert & Elizabeth Beatty
James & Nancy Becher
George Becker
Kenneth & Jane Becker
Richard & Colleen Beckman
William & Sandra Beckman

David Beckwith
Thomas & Mary Bednarz
Robert Beene
Daniel Begley
Edward Betcher
Rob Beldon
Howard & Pamela Bell
ECE Seniors Raise Top Pledges at Purdue

ECE is proud to recognize the ECE Senior Class Pledge Program Committee for raising the most pledges of any school on campus during the Senior Face Off, Senior Pledge Program. The program is an annual university-wide effort to encourage seniors to give back to schools, departments, and organizations. The committee garnered a pledge rate of 16 percent from the ECE senior class, with pledges totaling $10,285. By comparison, the overall university participation rate was 11.4 percent with 440 gifts totaling more than $50,000 in pledges.

ECE’s winning committee comprised seniors Kartik Aiyer, Reshma Mehta, and Amy Claypool; Gbile Adewunmi served as chair. At the outset, they set a simple goal; raise as much money as possible to fund a scholarship for students. To that end they hung posters, distributed pledge cards to seniors, hosted popcorn days in the HKN lounge and MSEE atrium, and spoke at a senior seminar and faculty meeting about the program. For earning the highest total pledged, the group received bragging rights, a certificate, a traveling pledge trophy engraved with their names, and the satisfaction of helping fellow students earn their degrees.

This year’s recipient of the 2002 Senior Class Scholarship is Tarun Shivlani, a junior in ECE and secretary of IEEE at Purdue.

ECE seniors (left to right)
Jeff Uram and Brad Kussy, shown here with Senior Class Pledge Program Committee members Gbile Adewunmi and Amy Claypool, helped make ECE’s pledge drive a success.
In 1901, Alfred F. Welch graduated from Purdue with a degree in electrical engineering. Over one hundred years later his daughter-in-law, Rosella Welch, established an annual scholarship in honor of Alfred and all the Welch descendents who have followed in his footsteps to Purdue, some 15-20 in all.

“Stan always told me that we should give back,” says Rosella, widow of Stan Welch (one of Alfred’s sons). “He felt that he had so much and that each of us should share with other people what we were given.”

Stan Welch, like his father and brothers, graduated from Purdue with a degree in electrical and computer engineering. Throughout his prolific 40-year career with General Electric, he earned scores of patents for his work with microwave and self-cleaning ovens and gave generously of his time to community service. He was fond of mentoring emerging engineers and young people, encouraging them always to get an education.

“Stan felt that an education was the most important tool for better opportunities in life,” says Rosella. “Not only at the beginning of your life, but in later life as well. The main thing he told the children was that if they had an education, they would have a better life.” Stan and Rosella’s three children followed their parent’s advice; a daughter, Susan, is a Purdue alumna.

The first A. F. Welch Memorial Awards were distributed for the 2002-2003 academic year. Forty-nine students received scholarships ranging between $500 and $2,000.

Stan Welch (BSEE ’42) enjoyed volunteering at the Mansfield Players Community Theater where he encouraged young people to get an education. As technical director, he worked on lighting, sound, and stage design. In this 1975 photo, Welch is shown attending to last-minute details for the production of “You Can’t Take It With You.” Theater “gets in your blood,” Welch said, “and stirs up the ham juice!”

One Hundred-Year Family Legacy Inspires Gift to ECE
<table>
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Gordon King
Robert & Apryll Kingsbury
Robert & Elaine Kingsley

Edwin Kinne
Bruce Kinney
David Kinsel
George Kirchner
David Kirkpatrick
Kirk & Annie Kirlin
Kevin Kirsch, Jr.
Eric Kirtcheff
Robert Kiser

Gerald & Jeanette Kissel
John Klaassen
Charles Klausing
Martin & Katherine Klausmeier-Brown
James Kleber
David & Ann Kline
Lee Klose
John Klotz
David Kluhe
Richard Kluenseer
Daniel Klugewicz
David Knapp

Donald & Jennifer Knebel
Allan Knies
Michael & Lisa Knieser
Brian Knutson
G. Richard Kocim
Robert & Anne Koehl, Jr.
Thomas Koehler
Edward & Ruth Koening
Stephen & Beverly Koeppe
James & Sheila Kohl
Kevin Kohls
John Kokinda
Venkat Kolar
Robert Kolar
Jeffrey Komoda
Rudolf & Karen Konegen
Susan & Daniel Konicek
Virgil Koning
Melvin Konsoer
Paul & Joanna Koo, Jr.
Warren Kootz
David & Diane Kopp
Leslie Kornberg
William & Gina Kornrumpf

John Kostyal
Charles Kovach
Richard Kovener

John & Catherine Kozik, Jr.
James Krammes
Carlton Kranz
Kenneth & Elizabeth Krause
William & Linda Krase
Bruce & Leslie Krawczyk
Ronald Krisher
Gayathri & Kripa Krishnamurthy
Richard & Jennifer Kruger
Richard P. Kroger
John Kruil
Patricia Kruse
Richard Krzyzkowski
Edward & Georgia Kubacki
Joan Kubik

Catherine Kuck
Keith & Christine Kudlac
James Kuhn
James & Sandi Kuehne

Edward & Ellen Kuhn
Gerald & Linda Kuhn
Kristen Kukral
Ramesh Kumar

James & Laura Kunken
Steven & Holly Kunkle
William & Marilyn Kunz
Aaron Kune

Aereid Kunztenbach
Richard Kurtz
Richard Kurz
John Kuschewski
Mark & Pamela Kushigian

Alexander & Isadora Kusko
Mark Kwarsky
Richard & Erin Kwolok
John Kyle
Carl Kyono
Edward LaClare
Barry Lada
James Laflin
Timothy Laflin
James Laphus
Indrajit Lahiri

Y. Harry & Alice Lam
Kenneth Lam
Peter Lam
Michael Lambert

Paul Lambert
Donald & Suzanne Lambka
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Robert Lestman
Lawrence Leszczynski
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Duane Lewis

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Henry & Betty Lum, Jr.

James & Janet Lumpp, Jr.
Mark & Mary Lundstrom

Thomas Luper
Frederick & Margaret Lynch, Jr.

Margaret Lyons
John MacDonald, Jr.
William Maciejewski

Eldon Mack
Theodore Macklin
Richard MacMillan

Laird & Helen Macomber

James Maciejewski

Thomas & Pamela Madison

Grant Margarit

C. William Mager
James Magro

Bernard Maguire

Raided Malhas

Eugene Maloney
Andrew Mance

David & Rose Manes

Robert & Virginia Mangus

Gregory & Susan Mansfield

Wei-Cheng Mao
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Roger & Mary Markley
Morton Marks

Stephen Marks

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Glen Marquis

Jefrey Marra

Steven Marrs

James Marsh, Jr.

Clay Marshall

Joseph & Mary Marshall, Jr.

Richard & Susan Marshall, Jr.

Thomas & Berit Marshall, Jr.

Charles Martin

Gary & Kathy Martin

Gregory Martin

J. Orville & Theresa Martin

Robert A. Martin

Robert D. Martin

William Martin

Melvin Matsasugu

Jamie Mason

Adolph & Cheryl Massa

Paul Mast

Bill Masteller

Robert Masten

Daniel & Jill Matchette

John & Mary Mathews

Phillip Mathur

Laslo Matrai

Clifford & Joanna Matthews, Jr.

Gregory Matthews

Brooks & Jennifer Mattice

Christopher & Enid Mattimiro

Alan Matula
Professor Holds Giving Record

Philip Swain, ECE professor, holds the record in ECE for the longest consistent giving to the School. For more than 22 consecutive years he has made personal gifts that have helped fund equipment, student projects, faculty start-up support, and many other initiatives. “I give to Purdue, and specifically to ECE,” says Swain, “to return a small measure of the tremendous benefits the School has provided my family during the 39 years I’ve been here. My two daughters and I have received outstanding educations and professional preparation, in each case a foundation for the success we have achieved in life.”
New research in optical networking is under way at ECE thanks to a grant from Cisco Systems, Inc. The unrestricted gift to Andy Weiner, Scifres Distinguished Professor in Electrical and Computer Engineering, will be used to explore novel solutions to limitations in optical fiber transmissions.

The dramatic growth in Internet traffic is driving the research. “Bandwidth is increasing; the amount of data that flows across the Internet is increasing,” says Graham Holmes, senior manager of academic research and technology initiatives at Cisco, Systems, Inc. “So, new methods to enable more information to travel across these fiber links in ways that are fast, reliable, and economical are very critical to the industry.”

Over the past several years, optical fiber transmission capabilities have expanded due to increased bit rate per channel and parallel channels on many different optical wavelengths. But, as transmission bandwidth increases, various impairments in the channel occur. “Chromatic dispersion” is one such impairment. Optical frequency components propagate at slightly different velocities, eventually leading to spreading of optical bits and unacceptable intersymbol interference.

Chromatic dispersion especially hampers the transmission of optical signals at high bit rates and over long distances. This is an issue that affects companies making optical fiber transmission equipment and networking companies that are developing routers and switches.

In order to support continued advances in lightwave communications to higher bit rates per channel as well as greater numbers of wavelengths, advanced dispersion compensators will be needed. That’s where ECE researchers step in. Weiner and his group are trying to develop dispersion compensation systems that are fully programmable, which would be much more flexible than the fixed compensators used in current practice. If successful, this would help open the door for optical networks to carry more and more data.

“All research we fund is based upon the merits of the idea, the merits of what the investigator wants to explore, and the potential for impact,” says Holmes. “We’re most interested in research that’s going to promote and further the industry, as opposed to Cisco specifically.”

Cisco Systems, Inc. has been a strong supporter of Purdue and ECE. In the past year, Cisco has given gifts of computer equipment and funds to support scholarships, awards, and sponsored research at ECE. Other Purdue groups receiving support from Cisco Systems, Inc. include CERIAS, the School of Technology, and the Krannert School of Management.

Cisco has good reason to believe in Purdue. At the West Coast company, there are over 100 Purdue alums on staff, so the company experiences firsthand the value of a Purdue education. “There’s a strong internal constituency of people with an engineering background from Purdue,” says Holmes. “The strength of Purdue engineers that we’ve had has really elevated the stature of Purdue and how we’ve judged Purdue’s contribution to Cisco.”

Cisco Systems, Inc., headquartered in San Jose, California, offers networking solutions for the Internet. Cisco’s Internet Protocol-based (IP) networking solutions are the foundation of the Internet and most corporate, education, and government networks around the world. Cisco provides products to transport data, voice, and video within buildings, across campuses, and around the world.
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Corporate and Organization Support
Two ECE alumni, Gordon Binder and Paul McEnroe, were honored as Purdue University Old Masters in a fall 2002 ceremony on campus.

McEnroe (MSEE ’60), enjoyed a prolific 23-year career at IBM. Most notably, he is credited with leading a team of engineers in the development of the “Universal Product Code,” commonly called the bar code. Today McEnroe manages his 1,000-plus acre horse and cattle ranch, “La Purisima,” in the Santa Ynez Valley in California. McEnroe developed what became a lifelong passion for horses as he learned to ride in the Purdue Saddle Club. Recently he delighted Margarita Contreni, ECE’s director of development, with a tour of his ranch.

“I think engineers particularly and everybody in general has a responsibility in their career to see how what they are doing is going to effect mankind and society,” McEnroe says. “You have to ask, ‘When I finish my career, am I going to look back and be proud of what I have done?’ You can build interesting boxes and devices and tools, but what has it done for society?”

Binder earned a BSEE in 1957 through the Naval ROTC program and served as a Surface Warfare Officer on board the aircraft carrier USS Intrepid. After leaving duty, he earned an MBA from Harvard in 1962 and joined Amgen, a biotechnology company. At Amgen, Binder rose through the ranks, eventually becoming chairman of the board in 1990. Under Binder’s leadership, Amgen became the world’s largest and most successful biotechnology company and one of the stock market’s top 100 companies. Binder received the National Medal of Technology by Vice President Gore in 1994. Most recently, he founded a venture capital company, Coastview Capital, LLC, in 2001.

To the Purdue community, an Old Master is an exceptional person who has made significant contributions to his or her field. Since 1950, over 500 Old Masters have traveled to Purdue to share their experiences and observations with students as they prepare to graduate and begin their own careers. For more information about the Old Masters program and public events, contact Heather Webb at 494-1235 or visit the Old Masters Web site at http://expert.cc.purdue.edu/~omcc/.
From identical triplet to communications innovator to California mayor, ECE alumnus Robert B. Fenwick succeeds as an individualist.

By Ruth Foster

From his birth as an identical triplet, ECE alumnus Robert B. Fenwick’s life has been anything but conventional. In a prolific career that has spanned the globe, Fenwick (BSEE ’58) founded two companies, earned patents on communications equipment designs, and created the “on demand” video system. And when he noticed that things weren’t as good as they could be in his hometown of Los Altos Hills, California, he decided to run for mayor, too. He was elected to the city council with the largest plurality in the small town’s history.

“Engineers aren’t fundamentally suited for politics,” says Fenwick with a hint of wry humor in his voice. “We’re used to quantitative data where we can calculate answers. I prefer engineering. It’s much harder to be a city council member. I’m used to being my own boss. I’m not used to compromising. But I wanted something done.”

Fenwick is accustomed to getting the job done. From Purdue’s Cary Quadrangle to Norwegian mountaintops to the Sudanese desert, Fenwick has taken his Purdue education to all corners of the world and revolutionized communications in a way that touches all our lives.

Born in Indianapolis, Indiana, on April 13, 1936, Fenwick attended Purdue along with his brothers from 1956 through 1958. The triplets were all awarded scholarships and housed together in a suite in Cary Quad. “Probably not such a good idea to put us all together,” says Fenwick, “but we did OK.” Fenwick graduated first in his class in 1958. One of Fenwick’s brothers also became an engineer, the other an industrial psychologist. The family can claim three engineers in all, including Fenwick’s father, also a Purdue electrical engineering alumnus.

Fenwick went on to earn his MSEE and PhD in 1959 and 1963, respectively, from Stanford University. He was offered scholarships to attend graduate school at both Stanford and MIT, and he credits Purdue for making this possible. “I got in because Purdue’s not some Podunk school,” he says.

While reminiscing about Purdue, Fenwick recalls his electrical machines class. “It shows how things have changed,” he says. “You’d be in lab and you could make a mistake—like blowing a $\frac{1}{4}$-inch copper rod in two—and it’d be a major blast. It would scare you half to death. Now, with transmitters and integrated circuits, they’re so small, you don’t even know when you’ve broken them.”

At Stanford, Fenwick explored the potential application of precise synthesized waveforms in linear sweeps for sounding in the radio spectrum while working in Stanford’s Radioscience Laboratory as a research associate. After completing his PhD dissertation “Round-the-World HF Propagation” in 1963, Fenwick perfected his Chirpsounder HF (high frequency) sounding technique in 1964. In part, due to his long interest in radio, Fenwick developed yet another technique that enabled simultaneous use Voice of America and Radio Free Europe broadcast transmitters as radar to determine their coverage areas. It was this technique that led Fenwick to found his first company, along with G.H. Barry, in 1966.

Barry Research Corporation, later renamed BR Communications, made unique ionosphere sounding equipment and modems for the military/diplomatic communications market. Much of BR Communications success was based on the Fenwick’s Chirpsounder HF sounding technique and time-diversity modem. All four of the U.S. military systems adopted BR’s HF Tactical Frequency Management System (TFMS), as did all three of the U.K. military services. In addition,
The Purdue University School of Electrical & Computer Engineering

ECE alumnus Robert B. Fenwick (right) and Jan (left), his wife of 41 years, recently hosted a gala affair to welcome Linda P. B. Katehi (center), Purdue's new dean of engineering, to Purdue alumni in the area. The party was held at the Fenwicks' home in Los Altos Hills, California, a spacious masterpiece that fits into the hillside it is built upon.

through NATO and individual orders, systems were delivered to fourteen other countries.

Fenwick served as chairman and president of the company from 1974 until 1985, and he remained as chairman until the company was sold in 1988. Fenwick says that developing equipment for this company was one of the most satisfying things he has ever done. "It's unique," he says simply. "It's still in use today, and it's not been improved on."

The development of communications equipment doesn't usually entail taking off of aircraft carriers in the middle of the Atlantic Ocean, but as Fenwick points out, "it has to be tested. They have to see if it works if they are going to buy it." Consequently, Fenwick has flown around the world in countless situations most of us couldn't even begin to fathom, experienced operations in all military services, continued on next page

When you host a large event, you meet interesting people," says Fenwick. "It's something my wife and I like to do." A few of the over 80 guests who attended the event at the Fenwicks' home are shown here. "They drove from all over to come," Fenwick says, "and they had a good time." Fenwick is the mayor of Los Altos Hills, a small town in the San Francisco Bay area with a population of around 8,000.
and lived in military bases in Guam and throughout Southeast Asia. “You have to be involved in proof of concept,” says Fenwick.

He got sick only once, with all this aerial maneuvering, but he still recalls the excitement. “It was with the Marines,” says Fenwick, “when we were dropped by helicopter on a mountain in Norway. We were in the peaks. But have you ever had a CH53 hovering right over your head? The noise and wind are unbelievable. It’s just beating you at a couple hundred miles per hour.”

Only once, in all of his trips, was Fenwick’s behavior—in his words—insane. “I had this rep in France, and he said to go to Khartoum, in Sudan. It was the craziest thing I had ever done in my life. There weren’t even paved streets. The whole idea of doing business there was insane.” Fenwick is quiet for a moment, and then says, “I saw the U.S. ambassador playing polo, but really I just saw a lot of desert.”

Despite all of his business trips, it was not in a hotel room that Fenwick thought up his innovative video system that made possible in-room movies on demand and led to the creation of his second company. Fenwick was at home and wanted to watch 60 Minutes at his convenience.

“I thought, why do I have to watch this when the broadcasters say? Why not on demand?” says Fenwick. “I’m oriented to things that are doable, and when I looked at it, I realized that video on demand was doable, but it was impractical to get it into a home. With hotels, the distance was closer and all the TVs were identical, and I could get them under a common control. I could create a system that would provide a wide selection of movie choices at the convenience of the viewer, rather than that of the broadcaster.”

Fenwick knew little about the entertainment industry, hotels, or television when he initiated research of on demand video, but in 1986 Fenwick founded On Command Video Corporation. In just three years after exploring possibilities, developing a system, and obtaining two patents, the first system was operating in a hotel. Guests could now have instant access to pay-per-view movies without conforming to a predetermined schedule.

Fenwick’s approach coupled an audio/data/video switching device with the existing television system in hotels. On Command Video utilizes a real-time, on-screen menu and does not require a set-top box. Guests can choose between 40–80 titles and enjoy, within seconds, the movie of their choice. But, it didn’t stop there. Electronic guest services now go well beyond the movies; they include folio review, room service ordering, messaging, guest checkout, and even Internet access. The system’s flexible architecture is compatible with cable, satellite services, and other broadcast and information services. It interfaces fully with most property management systems, and is installed in prestigious guest properties, including the Fairmont, Hyatt, Hilton, and Marriott hotels.

Fenwick opened up new vistas—communications equipment has been revolutionized and movies on demand are a commonplace convenience for hotel guests. But, despite his groundbreaking inventions, Fenwick is the first to point out that he still cannot watch 60 Minutes on demand. “It’s been seventeen years since I thought this up,” Fenwick says, “and it’s still not in the home.” Perhaps one day, in part due to Fenwick and all of those like him who have extended the boundaries of what has been done, watching any television show on demand at home will become, in Fenwick’s words, “doable.”
Alumni Notes

1938
Lester K. Schoon (BSEE '38) is retired and makes his home in Crown Point, Indiana. He spent five years in the U.S. Army throughout World War II as Major, Corps of Engineers, 40 years with the U.S. Steel Corporation and 18 months in Madrid, Spain, with the U.S. Steel Engineers and Consultants.

1941
Robert K. Duncan (BSEE '41) is retired and resides in Saint Mary's, Ohio.

1948
Charles A. Huffman (BSEE '48) resides in Lancaster, Pennsylvania, where he is retired and writing his life's story.

1949
David J. Ross (BSEE '49) retired December 21, 2001 as CEO of Ross, Esme, Fessler, & Patterson Engineers, Inc. and enjoys traveling, golfing, and taking classes at University of Central Florida.

Peter Safran (BSEE '49) retired in March 2001 after 33 years with Westinghouse in Newark, a real estate developer for 2.5 years, and another 12 years for St. Clare's Hospital in Denville, New Jersey.

1952
Charles M. Hill, Jr. (BSEE '52) retired following 40 years of service with GE and makes his home in Erie, Pennsylvania.

1953

1956
H. Paul Scherer (BSEE '56) retired in 1994 from NASA Goddard Space Flight Center, and from Lockheed Martin Astronautics in 2002. He is the owner of Diversified Home Repair Service LLC in Arvada, Colorado.

1957
Fred W. Gothman (BSEE '57) retired in 1992 from Exelon Corp. after 37 years. He enjoys teaching part time at the College of DuPage in architectural technology and the Illinois Institute of Technology where he is also slated to receive his MA in architecture in December 2003.

Georges A. Fosselard (MSEE '57) is retired and makes his home in Soignies, Belgium.

1959
David R. Matthews (BSEE '59) is president of Professional Management Solutions, L.L.C. He is semi-retired after over 30 years in management-level posts, including senior vice president of McNamee, Porter & Seeley, Inc. His holds nine patents in lasers and electro-optics. He has contributed to a book and been published in many national periodicals. He sat on multiple boards of directors, national committees, and blue ribbon panels. He is listed in Who's-Who of America, is a Rotary International Paul Harris Fellow and ACEC Fellow, and has received numerous honors for his work.

1961
Kenneth E. Larabee (BSEE '61) retired in 2000 from Seagate Technology and lives in Bloomington, Minnesota.

1962
Paul G. Goodwin (BSEE '62) of Bradenton, Florida, retired from Lockheed Martin Missiles and Space. He enjoys playing his trombone in an 18-piece jazz band.

1963
Donald P. Olsen (BSEE '63, MS '64, PhD '69) is with The Aerospace Corporation as Senior Engineering Specialist in Los Angeles, California.

continued on next page
## Alumni Notes

### 1964
**Edward J. Brown** (BSEE ’64) enjoys retirement with his wife, Mary Rose, in Columbia, South Carolina.

**Robert Pugh** (BSEE ’64) of MIT Lincoln Laboratories is a systems engineer residing in Bedford, Massachusetts, and spends his spare time in outdoor activities.

### 1965
**Jack R. Kelble** (BSEE ’65) was named president of Space & Airborne Systems at Raytheon in El Segundo, California.

### 1966
**Jack R. Brooks** (BSEE ’66) and family make their home in Fort Worth, Texas, where Jack enjoys training horses and family travel. He is retired from both the U.S. Navy and General Dynamics Corporation.

### 1964
**Edward J. Brown** (BSEE ’64) enjoys retirement with his wife, Mary Rose, in Columbia, South Carolina.

**Robert Pugh** (BSEE ’64) of MIT Lincoln Laboratories is a systems engineer residing in Bedford, Massachusetts, and spends his spare time in outdoor activities.

### 1972
**Ronald A. Cope** (MSEE ’72) was named Vice President of Operations at SyChip, Inc., in Plano, Texas.

**Arun Malhotra** (MSEE ’72, PhD ’74) joined Solid State Photonix as Vice President of Engineering and resides in Sunnyvale, California.

### 1965
**Jack R. Kelble** (BSEE ’65) was named president of Space & Airborne Systems at Raytheon in El Segundo, California.

### 1973
**Michael T. Eckhart** (BSEE ’73) is President of the Solarbank Program at Solar International Management, Inc. in Washington D.C. He also serves as Chairman of the American Council for Renewable Energy.

### 1974
**Keith J. Mueller** (BSEE ’74) joined Apache Design Solutions Inc. as vice president of worldwide sales and marketing.

**Ralph J. Mullins** (BSEE ’74) resides in Saratoga, California, and is employed with Cisco Systems as Director, Systems Test, Wireless Networking Business Unit.

**Robert W. Wilson** (BSEE ’74) is a patent examiner with the U.S. Patent and Trademark Office in Arlington, Virginia.

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### ECE Graduate Student Wins Emmy Award

Lauren Christopher, a PhD student in ECE, was part of a team of engineers from Thomson that received a technical Emmy award from the National Academy of Television Arts and Sciences. The award reads: “The 2002 Scientific and Technological Emmy Award to Thomson for: Development of the consumer digital set top box for satellite and/or cable and for development and/or commercialization of the 16:9 aspect ratio.” Lauren is working for ECE professor Ed Delp and expects to graduate in the spring of 2002.
1976
Zia A. Yamayee (MSEE ’76, PhD ’78) serves as the Dean of Engineering, University of Portland.

1980
Jan Mackulak (BSEE ’80) is a Software Process Consultant with Paradigm. In 2001, she retired after 22 years at Motorola’s Government Group. She and husband, Jerry, have lived in Scottsdale for the past 23 years. Jan often speaks at schools on the importance of education and engineering.

1981
Charles Bess (BSEE ’81) is with EDS, in Solutions Consulting in Plano, Texas. Charles was named EDS Fellow in 2002 and completed his MBA in 2000.

Stephen S. Schwartz (BSEE ’81, MSEE ’82, PhD ’85) was named president, chief executive officer, and a member of the board of directors of Asyst Technologies, Inc., in Fremont, California.

1982
Timothy J. Dixon (BSEE ’82) was appointed vice president of marketing of Atrica, Inc., in Santa Clara, California.

1985
David R. Beering (BSCEE ’85, MSEE ’87) received the 2002 Purdue Engineering Alumni Association Service Award for exceptional service and loyalty to Purdue University, the Schools of Engineering, and the engineering profession.

W. Keith Skinner (BSEE ’85) joined Born Information Services as a Network Consultant in Minnetonka, Minnesota.

Keith Swedo (BSEE ’85) is with the Indianapolis law firm, Maginot, Moore and Bowman as a Patent Attorney.

1986
David W. Zabrowski (BSEE ’86) was appointed to the Board of Directors of VantageMed Corporation in Rancho Cordova, California.

1987
Todd Nelson Frech (BSCEE ’87, MSEE ’92) resides in Chicago, Illinois, and is a partner with Accenture. He currently is on assignment in Sao Paulo, Brazil. In October 2001, Todd was married and recently welcomed a new daughter, Maria Marcella, born in July 2002.

continued on next page
1988
Kenneth Reid (BSCEE ‘88) is Associate Professor of Electrical and Computer Engineering Technology at Indiana University – Purdue University Indianapolis (IUPUI).

1990
Kevin Boyle (BSCEE ‘90) is with Elite Information Systems as Development Manager in the Encompass Division, Los Angeles, California.

1991
Bill Bray, M.D. (BSEE ‘91) serves with the U.S. Air Force at Tyndall Air Force Base in Florida as a flight surgeon in the First Fighter Squadron beginning active duty in July 2000. In January 2002, he was promoted to Major.

1993
Yi-Feng James Chen (BSEE ‘93, MSE ‘95) is Senior Project Engineer with Ground Systems Analysis & Design of Boeing Satellite Systems, Inc. responsible for the Boeing satellite emulator. While at Quantum IATL as Engineer Project Manager, he lead the team which developed and manufactured the “first in industry” Ethernet NDMP-based DLT tape network storage solution.

1994
F. Edward Funke, Jr. (BSEE ‘44) retired as Senior Technical Specialist at North American Rockwell (formerly Boeing Aircraft).

Shiriele D. Williams (BSCEE ‘94) serves as the Second Vice President of RPS Systems – Worldwide Operations and Technology, The Northern Trust Company of Chicago, Illinois. She currently is working toward her MBA at the Lake Forest Graduate School of Management.

1995
Charlotte (Carpenter) Loseke (MSEE ‘95) married Keith Loseke in April, 1999 and is employed with TRW as a Staff Engineer in Redondo Beach, California.

1997
Robert K. Fahler (BSEE ‘97) is with Paradyne Networks as an ASIC Design Engineering in Alpharetta, Georgia.

1999
Jeremy Bules (BSEE ‘99) joined Crown International Mobile Team in Elkhart, Indiana designing the A6000GTi car audio amplifier for JBL Car Audio.

2000
Jennifer Glassley (BSEE ‘00) is with the Electronic Design Center of Whirlpool Europe located in Italy where she is gaining experience in European hardware designs.

In Memoriam
We regret, we have recently learned of the passing of the following alumni:

Max W. Abram (BSEE ’40) of Lyons, IN.

Cyril J. Blasing (BSEE ’31) of Las Vegas, NV.

J. William Bowman (BSEE ’35) of Tampa, FL.

Harley D. Crom (BSEE ’47) of Norton, OH.

Howard B. Irvin (PhD ’49) of Bartlesville, OK.

Tatsuya Ishihara (MS ’53) of Yokohama, Japan.

Raymond E. Meyer (BSEE ’35) of Bluffton, IN.

Arthur E. Peltosalo (BSEE ’43) of Gibson Island, MD

Scott C. Richmond (BSEE ’73) of San Diego, CA.

Wesley B. Taylor (BSEE ’34) of Erlanger, KY.
Alums Offer Mirror Image Perspectives on Communications Industry

Robert W. Lucky (BSEE ‘57, PhD ‘61), vice president of Telcordia Technologies, Inc. in Red Bank, New Jersey, and recipient of an honorary doctorate from Purdue in 1988, chaired a special panel at the International Conference on Communications in New York City at the end of April 2002. The panel was featured as the “50th Consortium” to take a retrospective look at the history of the IEEE Communications Society on its 50th anniversary.

William C. Lindsey (MS ‘59, PhD ‘62), professor of electrical and computer engineering at the University of Southern California, was honored as a keynote speaker at IEEE GlobeCom in November 2002 in Taiwan. The theme of the event was “The World Converges”. Lindsey spoke about what we can expect to see regarding developments in communications during the next 50 years.

“It is noteworthy that two Purdue alumni were honored at two key IEEE events,” says Lindsey. “One looking at the past fifty years, the other looking toward the future.” Ironically, Lucky and Lindsey were former Purdue Engineering dean John Hancock’s first and second doctoral students.
Imagine a spacecraft bound for Mars or Europa loaded with astronauts with boundless enthusiasm and excitement. The spacecraft needs to rely on Houston for control or instructions. It takes 20 minutes for the signal to travel to Houston and another 20 minutes for commands to reach the spacecraft. What about an autonomous, ‘thinking’ spacecraft? All decisions would be made locally! This is a concept that would make many politicians in Washington proud. But this would require enormous amounts of computing power; something like petaflop computing, which is about $10^6$ times greater than the giga-level we have today. Well, not quite enough! That level of computing power must be available on a laptop computer. Why? It costs $100,000 to lift a pound of material to Mars. So, we can’t afford to hook up a bunch of heavy-duty gigaflop computers and attempt to carry a ton of computers onboard.

In June 2002, NASA selected Purdue to lead a new institute for “nanoelectronics and computing” to develop innovative, high-performance technologies and prototypes. Initially, the research will support NASA’s space missions, particularly development of more compact, powerful computers for autonomous spacecrafts, but there is long-term potential for commercial applications. In our guest column, Dr. Meyya Meyyappan, a pioneer in nanotechnology from the NASA Ames Research Center, reflects on the new institute and the future of nanotechnology research for NASA, military, and commercial systems.
From Our Readers

We want to hear from you. Send e-mail to mcontreni@purdue.edu or U.S. mail to the address below at right.

Strategic Support
I liked your strategic plan and wish you good luck with its implementation. I certainly expect to support it as well as I can.

This coming year, I have agreed to head up a committee for Eta Kappa Nu (HKN) called the “Expansion Committee”. HKN has been losing its position in many schools. We plan to get things going again with support from National which has been missing in the past few years. Who is your faculty advisor for HKN? I would like to contact him by e-mail if possible so his address would be appreciated. The Purdue chapter is one of the most active and could supply some good ideas for this committee . . .

Victor Green, BSEE ’49, MSEE ’53

Editor’s Note: Tom Talavage (BSCEE ’92, MSEE ’93) is one of HKN’s faculty advisors and a former member. Check out our feature story this month on Purdue’s award-winning HKN Beta Chapter (page 14).

Alumni Notes
This . . . concerns a note that I saw in the spring/summer 2002 Wavelinks Alumni Notes. Under the 1942 listing was a note about Merle E. Ward, BSEE ’42. Merle Ward was a senior at Mulberry High School, which is some 17 miles east of Lafayette, when I was a 7th grade student. Our school was small and there were about 100 plus students in the upper six grades. All six upper grades sat in a big assembly room with the 7th graders on the window side of the room and the seniors on the opposite side which contained the small library and access to the exterior hallway. Merle sat in the row of desks beside the library and I on the window side of the room. I had sisters in the 9th and 11th grade so had information sources all over the assembly room. My eldest sister told me at some time during the school year that Merle was going to Purdue to study electrical engineering. Incidentally, Merle was blonde haired and a handsome young man, according to my 11th grade sister.

I had long been interested in science and arithmetic. When I learned that he was going to Purdue to study electrical engineering I decided at that time that I, too, would go to Purdue and study electrical engineering. Merle graduated from high school and went on to Purdue. I had not heard anything about Merle since that time, some 64 years ago, until the notice in the Alumni Notes. I had not forgotten him, as he was the primary reason why I studied what I did. I graduated in the Purdue February Class of 1948 with a BSEE in electrical engineering . . .

Lee E. Fickle, BSEE ’48

Wavelinks is published two times a year by the Purdue University School of Electrical and Computer Engineering for alumni, faculty, students, and friends. We welcome your comments. Correspondence may be sent to:

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ECE Events for 2003

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Is anything like this possible with the state-of-the-art systems today? No. What about the next generations of chips ten years down the road? Probably not. We need new, unconventional innovations in electronics and computing that can help NASA with its future missions.

This was the motivation behind the nanoelectronics and computing topic of the NASA URETI (University Research Engineering and Technology Institute) solicitation, a competitive bid for proposal, open to all U.S. universities. The winner would receive $3 million per year for five years, plus an optional three more years. With matching funds from industry, the yearly research budget would be substantially higher. We received proposals from institutions all across the country, in the tens. A peer-review panel and NASA source selection picked the winner. It is a team led by Purdue. Congratulations! The team consists of the who’s who in nanoelectronics, computing, sensors, and nanotechnology in general: Supriyo Datta, Mark Lundstrom, Mark Ratner (Northwestern), Mark Reed (Yale), Paul McEven (Cornell)...a dream team indeed!

This consortium has proposed to investigate molecular electronics, nanowire transistors, fault-tolerant architectures, adaptive systems, ultradense memory, and integrated sensors—all critical areas for the development of future NASA, military, and commercial systems.

What is also encouraging is the commitment from the Purdue administration in terms of cost-sharing, infrastructures, and facilities. Purdue’s commitment, supported by the state of Indiana, to foster interdisciplinary research in nanoscale science and technology and to be at the forefront of higher-learning institutions is commendable.

Congratulations again. We at NASA are looking forward to working with you in paving the way for a new generation of space missions.
A world without wires is the mantra of an interdisciplinary Center for Wireless Systems and Applications (CWSA) at Purdue University that should be launched officially at the beginning of 2003. More than 80 faculty members from 11 schools and departments will collaborate with industry for research and education into wireless systems and applications. Watch for an in-depth look at the Center in the next issue of *Wavelinks*. Meanwhile, check out their Web site at http://dynamo.ecn.purdue.edu/~cath/cwsa.html.