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The ECE educational mission and strategic plan for preeminence are built around three components: learning, discovery, and engagement. Our coverage of ECE's strategic plan begins on page 2.

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Dear Alumni and Friends,

As we move into 2002, the School of Electrical and Computer Engineering at Purdue is in the midst of many changes. The School is developing a new strategic plan (page 2). We welcomed Linda P. B. Katehi, John A. Edwardson Dean of Engineering (page 10), and six new members to the ECE faculty (page 16). *Wavelinks* soon will have new writers and editors as Jo Gelfand has taken a position with the Department of Biomedical Engineering and Mary Moyars-Johnson has taken a position in the Office of the Vice President of Information Technology (page 11).

I also am making a major change. When I assumed the position of head of ECE in 1996, I promised to remain in the post for five years. As of July 2002, it will be six years. Effective July 1, I will assume the post of dean of engineering at Cornell University. A national search is underway for my replacement, with Professor Leah Jamieson heading the Search Advisory Committee and serving as interim head of ECE until a new head is selected and on campus.

This issue of *Wavelinks* will bring you up-to-date on what has happened in ECE from 2000 through spring 2002, and introduce you to our plans through 2007.

Birck Distinguished Professor and Head School of Electrical and Computer Engineering

W. Ket Zuch

P.S. Current news about ECE is always available at our Web site at www.Purdue.edu/ECE.

Strategic Plan to Move University and ECE to Preeminence

We need your input in the strategic planning process.

The strategic planning process for the University was launched in April 2000 when President
Martin C. Jischke called together a task force from alumni and diverse areas of the University. The assignment from the president was to "develop a shared vision of the University's future." Task force members were charged with establishing an outline for what the University wants to achieve, how it will achieve it, what metrics will be used to determine progress, and what measures will be used to determine when objectives have been reached.

HIGHLIGHTS OF THE PLAN FOR THE WEST LAFAYETTE CAMPUS INCLUDE INVESTMENTS THAT WILL:

- Enhance learning by increasing the faculty numbers in undergraduate classrooms, providing more experiential learning opportunities, and creating new academic and support programs.
- Expand interdisciplinary research capacity and visionary initiatives.
- Engage government and business leaders to advance economic development.
- Advance diversity among faculty, staff, and students.
- Preserve student access to education through expanded financial aid.

- Ensure faculty and staff excellence through competitive compensation and supportive resources.
- Strengthen the University's infrastructure, including facilities and information technology. Individual Schools and Departments are developing plans outlining how their missions fit with the broader University mission. These are working documents, and input from students, faculty, corporate partners, and alumni is essential to perfecting the plan.

The draft of the ECE strategic plan is summarized below; the complete draft plan and summary brochure can be found at www.purdue.edu/ECE/Strategic. You may send your comments and suggestions via the Web, or directly to Margarita Contreni at mcontreni@purdue.edu.

—Kent Fuchs



ECE's Strategic Plan

The Morrill Act, written in 1862, created land-grant universities to teach subjects related to agriculture and the mechanic arts. The three major thrusts of the educational mission were traditionally referred to as education, research, and service. Today those same thrusts are more frequently referred to as learning, discovery, and engagement. The ECE strategic plan is built around those three thrusts and is based on the Purdue tradition of valuing people and integrity. Those are the values that have enabled our students, faculty, and alumni to be leaders in academia and industry. Those are the values that were incorporated into the new strategic plan for the University, a strategic plan that, as President Jischke says, will "take us to the next level—preeminence."

THE ECE MISSION

ECE enriches society and advances engineering by providing our students with the knowledge, ability, and tools to innovate, excel, and lead in their profession and by making significant contributions through the discovery of fundamental knowledge and its applications.

THE VISION FOR ECE

ECE will be internationally preeminent in broad strategic areas of excellence. Our faculty will be leaders and innovators in learning and discovery. Our scholarship will set the standard for excellence. Our students

will excel in their passion for knowledge, and as alumni will be leaders in their fields. The accomplishments of our faculty and students will be recognized by our peers through major awards, and our programs will be recognized through consistent top-five rankings.

Many aspects of the vision statement are already true. Our alumni lead the profession in their respective fields. Now is the time to make our programs even better; let the world know of the achievements of our faculty, students, and alumni; work together to be truly preeminent; and make a Purdue engineering degree even more valued in the marketplace.

THE FIRST GOAL IN ECE'S PLAN CALLS FOR THE SCHOOL TO ACHIEVE AND SUSTAIN INTERNATIONAL PREEMINENCE IN DISCOVERY FOR STRATEGIC AREAS OF ECE. THE MAIN OBJECTIVES UNDER THIS GOAL ARE TO:

- Be internationally recognized as the preeminent program in strategic research areas.
- Enhance the quality, diversity, and size of the faculty.
- Recruit outstanding and diverse graduate students.
- Enhance the research enterprise infrastructure.
- Increase faculty productivity in discovery, development of research centers, and leadership of national initiatives.



- Provide an environment of intellectual excitement and enthusiasm for discovery and scholarship.
- Facilitate faculty recognition through international awards.
- Ensure state-of-the art facilities to enable all the School's objectives.

THE SECOND GOAL IN ECE'S PLAN CALLS FOR THE SCHOOL TO BE THE NATIONAL LEADER IN ECE EDUCATION. THE MAIN OBJECTIVES UNDER THIS GOAL ARE TO:

- · Recruit students who excel.
- Continually revitalize the curriculum.
- Develop an environment conducive to innovative learning.
- Encourage the authorship of nationally renowned course materials.
- Be a national leader in education delivery.
- Develop a structured program to enhance student communication and leadership skills.
- Facilitate undergraduate participation in research projects.
- Enable the continued success of the Engineering Projects in Community Service (EPICS) program.
- Encourage and enable participation by the School's student organizations in the School's mission.



ECE STRATEGIC PLAN

- Enhance undergraduate and graduate advising services.
- Develop and implement quantitative assessments of our educational program.

THE THIRD GOAL IN ECE'S PLAN CALLS FOR THE SCHOOL TO MAKE A PROFOUND IMPACT ON SOCIETY, INDUSTRY, ACADEMIA, AND THE ECONOMY THROUGH ENGAGEMENT. THE MAIN OBJECTIVES UNDER THIS GOAL ARE TO:

- Engage in corporate interactions and entrepreneurship activities that foster economic development.
- Develop partnerships with industry for co-op and internship programs.
- Involve industry in achieving the School's mission.
- Be a national leader in on-line learning.

Measuring our progress

The goals and objectives will be measured against peer institutions and ECE's own records. The School will continually monitor factors such as student-to-faculty ratio; amount of endowment; quantity and quality of facilities for learning and discovery; awards for teaching and research; faculty, staff, and student, demographics; prestige, productivity, and competitiveness of faculty; national ranking of programs; annual giving by alumni; and research awards.

All of these factors and many more will be measured against the School's own past record and against those of peer institutions, including Carnegie Mellon University, Cornell University, Georgia Institute of Technology, Princeton University, Massachusetts Institute of Technology, Stanford University, University of California - Berkeley, University of Illinois - Urbana, University of Michigan - Ann Arbor, and University of Texas - Austin.

KEY INVESTMENT AREAS

The key investment areas identified in the ECE strategic plan are designated as follows:

Faculty and staff. Our objective is to reduce the student-to-faculty ratio by increasing the number of faculty from 66 (as of fall 2001) to 100 by the year 2008. This increase will enable ECE to achieve national preeminence in learning and to grow in strategic areas, including computation, communication, and

commerce-enabling information technologies; the multidisciplinary intersection of nanotechnology, electronic materials, and molecular biology; and the interface between optics and electronics, including photonics and rf/analog systems.

Endowment: Increasing the ECE endowment will provide the School with the unique resources required to lead the nation in its vision for discovery, learning, and engagement. The School's endowment supports endowed professorships; new research initiatives, cost sharing, and start-up packages; and undergraduate research, fellowships, and scholarships.

World-class facilities: All of these activities demand world-class facilities. Without them ECE cannot attract top faculty and students and will not be able to offer a world-class education. The plan calls for the EE and MSEE buildings to be remodeled. A significant amount of space on the second floor of the EE Building will be converted into undergraduate laboratory facilities. The School also will gain additional space in the MSEE Building when the new Interdisciplinary Engineering Building is built. The plan also calls for the replacement of the Duncan Annex with a facility that will provide new laboratories, office space, and meeting rooms that foster interaction between students, faculty, and industry representatives. These meeting areas are essential to provide for the "intellectual collisions" that make education exciting, spur creativity, and heighten the School's impact on society.

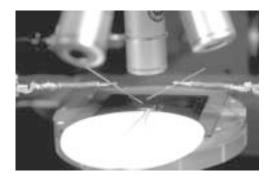
FUNDING THE PLAN

The strategic plan will require a significant investment from all possible sources: national and state government, funds generated by the ECE faculty

through sponsored research, student fees and tuition, and gifts. Gifts of money and equipment from corporations, alumni, and friends will be key to success. Support by alumni and friends is essential as the School builds programs for the next generation of electrical and computer engineers.









ECE Grad One of Two Alums on University's Strategic Plan Task Force

The task force that worked on the University's strategic plan included students, alumni, and Purdue employees. Viveca Fairbanks-Henderson, a 1990 ECE graduate who works for Procter and Gamble, was one of only two alumni asked to serve on the 28-member group. "I had no hesitation in saying yes," Fairbanks-Henderson says. "I was glad to see that strategic planning was a priority for the University."

Familiar with strategic planning for a major corporation, Fairbanks-Henderson found the biggest challenge was to get grounded in academia. "I was used to making plans and setting priorities based on the bottom line," she says, "but academia is so different from the corporate world." The hard part was finding words for the vision that let people know that all constituents were important, even though the University was making choices. "At P&G, it's clear that if you're not in the top ten brands, you're still critical to the bottom line," she says. "It was disheartening that an entire contingent felt excluded because of what was not on paper."

The task force had an aggressive schedule, as well as a colossal assignment. The task force met monthly and provided progress reports to President Martin C. Jischke after each meeting. Mission and vision statements were due by April. Goals were to be established by May, and draft plans were to be completed in July. August, September, and October were used for public review of the draft plans at open forums held around campus. The final plan was presented-and approved-by the board of trustees November 2, 2001.

Fairbanks-Henderson looks forward to seeing the results of the work. "If you have a plan, in a month or so you should be able to see what choices have been made about resource allocation, funding priorities, or staffing. I'm interested in seeing something concrete in the first month, and I'm interested in seeing how the corporate community will be engaged in the plan, especially in the science and engineering area."

The plan is being sent to key companies in order to engage them in new strategies, which will help the University achieve some of the goals in the plan. Fairbanks-Henderson is doing her part by sharing the plan with the Procter and Gamble General Manager in charge of Purdue recruiting, and discussing with him new ways the company can partner with Purdue. Fairbanks-Henderson noted that because the company

general manager was new to his recruiting role, it was especially important that there was something on paper that he could use as he made decisions on involvement between Procter and Gamble and Purdue for the coming year

"Being a graduate of Purdue University opened a lot of doors for me at Procter and Gamble and, as a result, anything I can do for students and Purdue, I will do. Purdue really made a significant difference in my post-college life, and I have the desire to give back," Fairbanks-Henderson says. She hopes other alumni will join her in giving back. "I would make an appeal to other ECE grads to financially support the ECE program. The biggest way we can help is to be contributors, to help Purdue exceed the vision, to get there (to the goals) faster."

Note: Because of their involvement in various aspects of the University, four individuals affiliated with ECE were on the task force. In addition to Fairbanks-Henderson, who represented alumni interests, Connie Boss, representing the University Clerical and Service Staff Advisory Committee; Margarita Contreni, the director of development for ECE; and Professor James A. Cooper, Jr., one of the faculty representatives on the task force, also participated.



Viveca Fairbanks-Henderson (BSEF '90) represented alumni interests in the development of the University's strategic plan for preeminence.

Faculty Recognition Provides Foundation for Preeminence

Recruiting top faculty and providing an environment of intellectual excitement and enthusiasm for discovery and scholarship are key strategies under ECE's strategic plan for preeminence. The recent recognition received by ECE faculty indicates the School has already established a solid foundation for preeminence in these areas. The following awards recognize outstanding research, teaching, and service by ECE faculty members.

In November 2001, the United States Senate confirmed President Bush's nomination of Professor **Arden L. Bement, Jr.** as director of the Commerce Department's National Institute of Standards and Technology. Most recently the David A. Ross distinguished professor of Nuclear Engineering and head of the School of Nuclear Engineering at Purdue, Bement comes to his position well versed in the workings of the agency. He has served as head of the Visiting Committee on Advanced Technology, the agency's primary private-sector policy adviser, and as head of the advisory committee for NIST's Advanced Technology Program. Bement also has served on the board of overseers for the Malcolm Baldridge National Quality Award. At Purdue, he directed the Midwest Superconductivity Consortium and the Consortium for the Intelligent Management of the Electrical Power Grid. Bement has a joint appointment with ECE and the School of Materials Engineering.

At the International Electron Devices meeting in December 2001, Professors **Supriyo Datta** and **Mark S. Lundstrom** were co-recipients of the Cledo Brunetti Award from the Institute of Electrical and Electronics Engineers (IEEE). The award, which includes a cash prize, is presented by the IEEE Board of Directors for outstanding contributions in the field of miniaturization in the electronic arts. Lundstrom and Datta were cited for "significant contributions to the understanding and innovative simulation of nano-scale electronic

devices." The Brunetti Award was established in 1975 through a bequest made by the late Cledo Brunetti, an executive of the FMC Corporation.

In May 2001, Professor Edward J. Delp presented a talk on multimedia security at the Universite Catholique de Louvain in Belgium as part of the 100th anniversary celebration of that institution's Departement d'electricite. When the September 11 tragedy struck, he was one of the experts the members of the media contacted to learn more about encoding information within a digitized picture. Known for his research on image processing as well as information security, Delp has worked on improving medical imaging as well as commercial video images, and is the developer of a technique to "watermark" video images in order to protect ownership. He received the 2001 Raymond C. Bowman Award from the Society for Imaging Science and Technology in recognition of his efforts in fostering and encouraging individuals in the pursuit of a career in imaging science. He also received the Tamere University of Technology honorary degree of Doctor of Technology.

The National Science Foundation recently launched a Director's Award for Distinguished Teaching Scholars to "recognize the outstanding contributions of scientists and engineers to the leading edge of scientific knowledge at the same time they are advancing the frontiers of education in science, mathematics, engineering, and technology." Professor Leah H. Jamieson was one of seven faculty members in the U.S. selected to receive the honor. Jamieson, whose research is in speech recognition, is also the co-founder of the Engineering Projects in Community Service Program (EP-ICS), which she co-founded at Purdue in 1995. Jamieson will use the \$300,000 she received to do research to better understand and improve the workings of multidisciplinary teams involved in EPICS, which has grown into a national program. Jamieson also

received the IEEE Education Society's Harriet B. Rigas Award in August 2000 and the Violet Haas Award from the Council on the Status of Women at Purdue University.

Professor **Gerold W. Neudeck** was named the recipient of the 2001 Aristotle Award presented by the Semiconductor Research Corporation (SRC) Board of Directors to recognize faculty whose commitment to the educational experience of students has had a profound and continuing impact on their professional performance, and consequently a significant impact on SRC member companies. The award acknowledges outstanding teaching in its broadest sense, emphasizing student advising and teaching during the research project that contributes to the maturation of the student.

Professor **David Meyer** received the national IEEE Computer Society Computer Science and Engineering Undergraduate Teacher Award "for improving design education at the undergraduate level through course and curriculum development and through innovative research in and application of educational delivery technology."

Professor **Avinash C. Kak** received an extraordinarily large number of undergraduate teaching awards, including the Honeywell Award for Excellence in Teaching, the Wilfred "Duke" Hesselberth Award for Teaching Excellence, and the all engineering A.A. Potter Best Teacher Award.

Professors Charles Bouman, Kaushik Roy, and George R. Wodicka were elected to the grade of Fellow of the IEEE.

Professors **Ilya Pollak** and **Robert L. Givan** received the Faculty Early Career Development Award, one of the most prestigious honors a junior faculty member can receive from the National Science Foundation. Each award is accompanied by a research grant of \$200,000 to \$500,000 to be used over four or five years. Equally important as the money is the national

recognition. As Rita Colwell, Director of the National Science Foundation, stated when she announced the awards, "We recognize these faculty members, new in their careers, as most likely to become the academic leaders of the 21st century."

Purdue selected Professors **Mike Zoltowski**, **Scott Sudhoff**, and **Peter C. Doerschuk** as University Faculty Scholars. The five-year appointments are accompanied by an annual allocation of funds to support the professors' professional activities. The Faculty Scholars program recognizes academic distinction in ten-

ured associate and full professors who received that rank in the past five years.

Additional faculty recognitions: Ravi R. Mazumdar is a Fellow of the Royal Statistical Society (United Kindom). Jan P. Allebach was named editor of the Journal of Electronic Imaging. Venkataramanan Balakrishnan won the Honeywell Award for Excellence in Teaching. Thomas Talavage, Rashid Bashir, and Barrett Robinson won the Ruth and Joel Spira Outstanding Teacher Award. Michael Zoltowski won the

Wilfred "Duke" Hesselberth Award for Teaching Excellence. Leslie A. Geddes was awarded the Lee de Forest Award by the Radio Club of America. Rashid Bashir received the 2001 Technology Translation Award. Philip Swain received the Devoted Service Award from the Distance Learning Community of Practice of the University Continuing Education Association.

Stanislaw H. Zak received the Motorola Award for Excellence in Teaching. Thomas Talavage and Hong Tan received the junior Teaching for Tomorrow Award.

ECE Facilities Upgraded with Latest Equipment

Ensuring state-of-the art facilities is another key element of the School's strategic plan. Top-notch facilities provide an environment of intellectual excitement and enthusiasm for discovery and scholarship. Progress is underway toward reaching that objective, as the crush of ECE students returning to classes in August 2001 discovered. From the new steps at the Northwestern Avenue door, right to the rooftop in EE and MSEE, many of the facilities for ECE students have been upgraded. All of the conference, seminar, and meeting rooms in the MSEE and EE buildings have been renovated with state-of-the-art equipment for collaboration and presentations. All undergraduate laboratories also have benefited from new equipment.

"Industry expects Purdue students to be prepared to step into their facilities and immediately function at the highest level," says Kent Fuchs. "Students must learn with the latest equipment while at Purdue. Industry contributions help; the tuition differential, the equivalent of an engineering lab fee, helps; but most of this remodeling would not have been impossible were it not for generous alumni contributions."



ECE 317 (left) and EE 201 (right) help room after the renovation. The ECE 201 help room facilitates collaboration between students and faculty. EE 317 is a state-of-the-art classroom and conference room.

Kent Fuchs' Final Words on the Bright Future of ECE



Effective June 19, 2002, W. Kent Fuchs, head of ECE at Purdue and Michael J. and Catherine R. Birck distinguished professor, will resign to take the position of dean of engineering at Cornell University.

"We all feel that Kent's departure is a great loss for Purdue" says Linda P. B. Katehi, dean of engineering at Purdue. "However we could not fail to recognize that this is a great opportunity for Kent and speaks well for him and Purdue."

Fuchs received a B.S.E. degree from Duke University, a M. Div. degree from Trinity Evangelical Divinity School, and a PhD in electrical engineering from the University of Illinois. He was formerly professor in the Department of Electrical and Computer Engineering and the Coordinated Science Laboratory at the University of Illinois, Urbana-Champaign. He joined Purdue in July 1996.

His research interests include dependable computing, testing, and failure diagnosis. Research awards include two Faculty Awards for Excellence in Research, selection as a University

Scholar, and appointment as Fellow in the Center for Advanced Studies, all from the University of Illinois. He has also received several best paper awards.

Fuchs has been a guest editor and on the editorial board of a number of journals. He is a Fellow of the IEEE and a Fellow of the ACM.

"In these six years that Kent has been with Purdue, he has provided leadership to ECE in many ways: the amount of sponsored research has doubled, the number of endowed professorships has increased significantly, and the physical facilities (both space and equipment) have been upgraded significantly," says Katehi. "In addition to the tangible improve-

ments in ECE, there have been many intangible improvements has well. The support of our alumni has never been stronger, and the planning provided by Kent promises a bright future for the school. New faculty hires have provided a cadre of very promising young faculty. Kent's support for the Birck Nanotechnology Center will help place ECE at the forefront of nanotechnology."

Here Fuchs talks with *Wavelinks* about the strategic plan, projections for ECE, opportunities that await the next head, and reflections on his tenure with the School.

Wavelinks: Why have a strategic plan? Fuchs: We knew that the changes in administration and an increase in available resources would create unique opportunities for the Schools of Engineering and across campus. (Editor's note: Purdue's new president took office in August 2000; the new provost in July 2001; and the new dean of engineering in January 2002. Tuition for new students beginning in the fall of 2002 increased 34 percent.) ECE wanted to be ready for these changes so that we could take full advantage of the opportunities they presented. We wanted to understand our School's internal needs and also the direction we wanted to go, what we wanted to accomplish, and the resources it would take to put us there. The strategic planning process does that; it is an internal self-study of where our School expects to be five years from now, what it will take to get us there, and the metrics for evaluating our progress.

Wavelinks: What role do you see alumni playing in the strategic plan?

Fuchs: Alums first help by giving us valuable feedback. Over the past five years, we have met with alums where they work, in their homes, and when they visit campus, and we have incorporated their feedback in our strategic plan, in terms of our curriculum, learning environment, and research. Now we are at the point of execution of the plan, and we expect alums to play a major role in that process as well. We expect alums will be an advocate for us externally with the state and federal government and with the companies in which they lead and work. They also will help be an advocate internally to Purdue, in taking our message to the administration about the opportunity to invest in ECE. Finally, they will help us provide resources directly through individual gifts and corporate donations.

Wavelinks: How would you assess the state of the School at your exit?

Fuchs: The School has an exceptionally bright future. It is an opportune time for a change in leadership. The most dramatic visible changes that I expect in the School will be a result of the plans we have in place for the next five years. The School will build new facilities, develop new laboratories, hire many new faculty, create new courses, and move into new areas of research that are exciting and potentially of great benefit to our students and to society.

Changes that have taken place in the School over the past six years have dramatically improved both the quality and impact of our teaching and research. I'm most proud of the faculty and their accomplishments. They have taken advantage of new research and learning opportunities in the broad fields of computing and communications; in leadership areas such as image processing; in exciting new areas of applied nanotechnology and molecular electronics; and in the integration of the life sciences with electrical engineering. As a result of the accomplishments of the faculty, the School has, in six years, doubled the amount of research and funding that comes from external sources.

The faculty has taken advantage of enhanced laboratory environments to create new instructional programs, including service-based learning through EPICS, which has had substantial national visibility in the past five years. Faculty members have created senior design courses for ECE students that are highly effective, and they have implemented a process of continuous improvement that resulted in a successful accreditation review this past year.

The enrollment has increased substantially in the past five years, from about 800 students to over 1100 students. Our goal is now to keep the enrollment stable, because we are at capacity. But in the midst of that growth, the faculty made significant enhancements to the curriculum, the learning environment, and instructional labs.

The last big change, in terms of resources, has been not only what the faculty has brought in from the outside, but also the internal growth of resources for new staff and instructional laboratories. In the past five years, we have increased our instructional laboratory budget by tenfold, from \$100,000 per year to over \$1 million per year that is invested in equipment for student instruc-

tion. As a result, our instructional laboratory environment is now one of the best in the country.

Wavelinks: What challenges or opportunities await your successor?

Fuchs: Fortunately, the major challenges will be transitory. In the next three years, as we grow the faculty and continue to dramatically increase research expenditures, there will be major challenges in finding the space for faculty and for the courses we are creating. But, in three years we will move into our new nanotechnology building, a facility that is funded primarily by ECE alums. (ECE alums donated \$45 million for the nanotechnology building.) When that building has been occupied, that will free up significant space in both the EE and MSEE buildings that we can reallocate for other faculty and student initiatives.

The second combined challenge and opportunity will be the execution of our strategic plan. We have an exciting future planned, but there is always a risk that the changes either will not occur within the time schedule that we expect, or that they will bring risks that we can't fully predict. Our faculty and students are very enthusiastic about our plans and very willing to implement the objectives. We're at a time where there is a great opportunity for the next head of ECE and for the faculty and students to implement changes that will affect the next 100 years of our School's history.

Wavelinks: What are some of your personal highlights of your tenure at Purdue?

Fuchs: I'm most proud of the faculty that we have hired, mentored, and promoted. Seeing faculty come to Purdue and watching them be successful is my favorite experience.

My second most enjoyable experience was watching the students

move through our
School, seeing their
accomplishments as
they learned the subjects we taught, and
seeing them go
through graduation
and on either to graduate school or into an
occupation.

And then my third most enjoyable part of my six years here has been working with the alums, particularly those that have stayed in touch with the School. Our alums are very accomplished. Every alum that I have met has a great pride and loyalty toward Purdue and for ECE. Getting to know the alums that we have met around the world has been a real privilege.

Wavelinks: Any final thoughts?

Fuchs: Even though I've only been at Purdue for six, what seem like very short years and our family is now moving to another university, Linda and I and our four children have enormous fondness and loyalty to Purdue. We are very proud of this institution and School and look forward with great expectations to the School's future success. We plan on keeping in touch and seeing the plans that have been developed in the past five years become a reality.



"Changes that have taken place in the School have dramatically improved the quality and impact of our teaching and research. I'm most proud of the faculty and their accomplishments."

Katehi New Dean of Engineering

The board of trustees named Linda P. B. Katehi the John A. Edwardson Dean of Engineering for Purdue University's Schools of Engineering. Katehi (kuh-TAY-hee) received her doctoral and master's degrees in electrical engineering from the University of California, Los Angeles. She earned her bachelor's degree in electrical engineering from the National Technical University of Athens, Greece. The holder of five patents, Katehi concentrates her academic research in the area of microwave circuitry and, therefore, is a member of the ECE faculty. She has written or co-written seven book chapters and is author or co-author of 165 articles published or submitted to refereed journals. In addition, she has written 260 articles that have been published in conference proceedings.

"Dean Katehi brings the leadership qualities we were seeking to move Purdue to the next level of excellence," says
President Martin C. Jischke. "Given Purdue's rich tradition of engineering teaching and research, I am extraordinarily pleased with this addition to our leadership team."

The national search for a new dean yielded 40 applicants.

Katehi was one of the four finalists who visited campus and met formally and informally with faculty and staff. "During the search process, I came to understand that Purdue aims at assuming a leadership position in the present environment of economic, technological, and social change," she says. "The position of dean of engineering at Purdue provides an exciting opportunity to lead a strong engineering program into a future of academic excellence, visionary research, and memorable teaching and learning experiences for the students."

Katehi was associate dean for academic affairs in the University of Michigan College of Engineering for three years. In that position she was responsible for faculty hiring, promotion, merit and tenure processes, budget planning, space allocation, the Center for Professional Development, and the Women in Engineering program.

At Purdue, she will head one of the largest programs in the U.S., a program that encompasses 13 schools and has an undergraduate enrollment of approximately 6,000. There are 270 faculty members in engineering and 1,800 graduate students. Katehi will hold a named chair as the John A. Edwardson Dean of Engineering. The chair is being funded through an endowment established by Purdue alumnus and trustee John A. Edwardson.

Katehi succeeds Richard J. Schwartz who began his teaching career at Purdue 36 years ago and was named dean in 1995. Having reached the mandatory retirement age for senior Purdue administrators, Schwartz stepped down on December 31, 2002. Following a semester teaching at Christ's Church in New Zealand, he will return to Purdue to teach in ECE and to serve as co-director of the Birck Nanotechnology Center.



"Purdue alumni being an integral part of Purdue's history can also play a major role in shaping the future by promoting Purdue's image as an 'institution with tradition and vision' and by assisting us to enhance our research programs, upgrade our laboratory facilities, and increase our student scholarships."

Wireless Computing At Purdue

ECE offices, labs, classrooms, and open areas within the EE and MSEE buildings now have wireless network connectivity. ECE is fully covered by 802.11b standard wireless network access points (APs), which can be utilized by faculty, staff, and students for use with both laptops and PDAs. All ECE faculty members were provided with wireless network interface cards (NIC cards) for their laptop computers. Students who don't have their own wireless cards may check out one of the 300 NIC cards available for use in their personal portable computing and information devices.

Through use of Xwindows and Windows terminal server (WTS) software, students can make use of nearly all engineering computer resources and applications from their own laptop. WTS client software is available for free on the Web and X-window software has been site licensed so that all engineering students have free access to it for installation on their own PCs. ECE also has set up a mobile wireless computing lab, which enables wireless equipped laptops to be used for hands-on instruction in any classroom.

EPICS Receives 2002 Focus Award

ECE's Engineering Projects in Community Service (EPICS) program was selected by Purdue to receive one of the University's 2002 Focus Awards. The Focus Awards are given annually to individuals affiliated with Purdue who have advanced the University's commitment to improving disability accessibility and diversity on campus. Three recipients of the Focus Awards were honored at the "Disability Diversity: Reaching New Heights" reception at the Purdue Memorial Union in the spring of 2002.



ECE Gets High Marks from ABET Accreditation Visitors

Thanks to all alumni who responded to the ECE alumni survey in the previous issue of *Wavelinks*. The survey results were a component of the ECE BSEE and BSCmpE degree programs assessment by the Accreditation Board for Engineering and Technology (ABET) in the fall of 2001. The ABET visitors reviewed extensive self-study reports on each of the programs, toured instructional laboratories, and met with students, faculty, and representatives of the Purdue administration. The visitors had high praise for curricula as well as the School's students, faculty, and facilities. In early 2002, ABET extended our accreditation to 2008.

The alumni survey results contributed significantly to the self-study reports. The survey yielded returns from 110 graduates spanning the years 1931 to 2000. In a welcome role reversal, former students had the opportunity to grade the education they received at Purdue. They were asked to

use the familiar grading scale (A, B, C, D, F) to rate the School's success in achieving its educational objectives in the fundamentals, mathematical and basic sciences, problem solving and design capabilities, creativity and enthusiasm for lifelong learning, professional attributes, and breadth of knowledge.

The vast majority of the alumni indicated that they highly value Purdue as the origin of their professional education and career preparation. A full 93 percent of respondents gave their overall education the grade of A or B.

Even so, alumni expressed some concerns about the preparation of Purdue ECE graduates in the areas of professional attributes, especially communication skills (technical writing), teamwork, and knowledge of business and management principles. They urged that increased attention be given to design, applications, and "real-world" exposure. The ECE faculty is acting on several fronts to strengthen these areas. In 1999, a full-time communications specialist was added to the ECE staff and is working with students from sophomores to graduate students to assess and improve communication skills. The senior design courses and the EPICS program (Engineering Projects in Community Service) provide opportunities to address the other concerns.

ECE takes seriously its obligation to seek feedback from its stakeholder constituencies and to act on this information to enhance the quality and value of its programs. Your comments are always welcome.

For a copy of the complete survey results, send e-mail to Professor Phil Swain at: swain@purdue.edu or give him a call at (765) 494-3443.



"The nicest awards and rewards are the friendships I've had with co-workers and alumni. The news is not about me. It's about the achievements of all the folks in ECE."

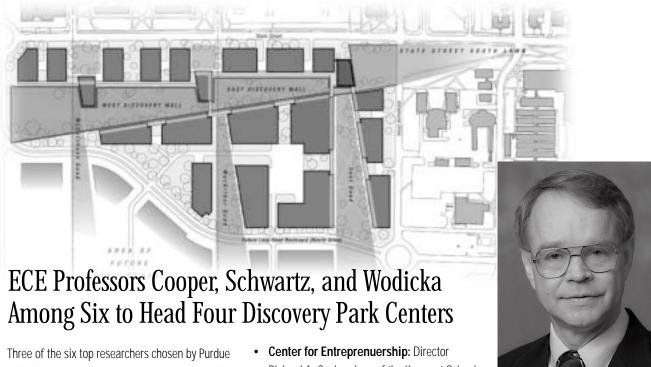
Mary Moyars-Johnson Named VP for Communications in IT Office

Mary Moyars-Johnson, manager of alumni and industrial relations, has left ECE to take the position of associate vice president for communications in the Office of the Vice President for Information Technology at Purdue.

During her 13 years with ECE she developed the publications program, designed the newsletter, worked with the industrial affiliates program, started the alumni relations program, launched the development program, and initiated the Outstanding Electrical Engineer Awards. By the time Moyars-Johnson moved on, the staff handling development and alumni and industrial relations doubled to four full-time employees handling the programs she initiated.

"I thoroughly enjoyed the great alumni and the marvelous professors and staff in ECE, says Moyars-Johnson. "I was fortunate to work with great heads: Richard Schwartz, Dave Landgrebe, and Kent Fuchs. I learned a lot taking EE through its first real fundraising campaign during Vision 21 when I worked with Wendy Luther Michalski from the dean's office. I'm very pleased with the alumni spirit generated by the Outstanding Electrical Engineer Awards; that's the achievement that pleases me the most."

Moyars-Johnson has received numerous awards for her civic service, including volunteer of the year from the Tippecanoe County Historical Association. Margarita Contreni, recently named director of development, Amy Noah, the new manager of corporate relations, and a third fundraiser who has yet to be named will continue the momentum and help the faculty achieve their strategic goals.



Three of the six top researchers chosen by Purdue to head the University's four new Discovery Park centers were ECE professors. "We found the very best people for both their expertise and their ability to build effective interdisciplinary teams," says Charles O. Rutledge, Program Director of Discovery Park and Dean of Purdue's Schools of Pharmacy, Nursing, and Health Sciences.

Purdue so far has raised more than half of the \$100 million needed for Discovery Park's four centers, which will include the Birck Nanotechnology Center, a bioscience/engineering center, an e-enterprises center, and a center for entrepreneurship. Purdue researchers chosen to head the centers are:

- Nanotechnology Center: Co-directors
 James A. Cooper, ECE professor, and
 Richard J. Schwartz, ECE professor and former dean of the Schools of Engineering.
- Bioscience/engineering Center: Co-directors
 Vincent Jo Davisson, professor of medicinal
 chemistry and molecular pharmacology, and
 George R. Wodicka, ECE professor and head of
 the Department of Biomedical Engineering.
- E-Enterprise Center: Director Joseph F. Pekny, professor of chemical engineering.

Center for Entreprenuership: Director
 Richard A. Cosier, dean of the Krannert School
 of Management and Leeds Professor of
 Management.

Provost Sally Frost-Mason says Discovery Park will play a major role in the state's economy and that the nanotechnology facility will position Indiana to become a national leader in the new scientific revolution that the technology offers. Federal research spending for nanotechnology is expected to increase sharply in coming years, and the facility will help Purdue attract research funds, as well as the best scientists, engineers, and students.

"It will be a while before the buildings are built, but the research will begin right away," Rutledge says. "The center directors will actively engage faculty in the research of Discovery Park. These are faculty from many different schools at Purdue who either conduct or plan to conduct interdisciplinary research in these four new research areas. "So, we are bringing together all of these researchers now. It's a virtual center until the buildings are constructed." The appointments are effective immediately, and the directors are expected to serve no more than half time in Discovery Park roles. Construction on the nanotechnology building is expected to begin in July 2002 and be completed in the summer of 2004.



George R. Wodicka



Richard J. Schwartz

Faculty Promotions for 1999-2002

ECE faculty members that have been promoted to associate or full professor:

1999-2000

Charles Bouman (Full) concentrates on image processing, tomographic imaging, electronic imaging, and pattern recognition. **Carla Brodley** (Associate) specializes in artificial intelligence, machine learning, computer vision, and computer security.

Ness Shroff (Associate) focuses on high-speed communication networks, mobile communications, multimedia applications, and network management.

George Wodicka (Full) is an expert in biomedical acoustics, biomedical signal processing, and medical instrumentation.

Stan Zak (Full) specializes in control, nonlinear systems, chaos, neural networks, fuzzy logic, and optimization.

2000-2001

Rashid Bashir (Associate) concentrates on semiconductor fabrication techniques, microelectro-mechanical systems, nanotechnology, and SI devices/growth.

Kaushik Roy (Full) researches low-power VLSI for portable computing and wireless communications.

Peter Doerschuk (Full) focuses on statistical signal processing; inverse problems and signal reconstruction problems; and the interaction of engineering, biology, and medicine.

2001-2002

Catherine Rosenberg (Full) specializes in broadband multimedia telecommunication networks, IP networks, broadband satellite networks, wireless networks, and network optimization.

Five Faculty Members Retire from ECE

FRIEDLAENDER, AN ICON IN THE FIELD OF MAGNETICS, RETIRES FROM ECE

Colleagues have called Fritz Friedlaender an "icon" in the field of magnetics. Friedlaender is one of the world's leading experts in the behavior of magnetic thin films and in the magnetic separation of materials. He is the founding father and former president of the IEEE's Magnetics Society and the International Magnetics Conference (INTERMAG). Recently retired after a distinguished 46-year career on the ECE faculty at Purdue, he received the 2001 Alumni Merit Award from Carnegie Mellon University, where he earned three degrees, including his PhD.

Friedlaender's many honors include the Humbolt award, the IEEE Centennial Media and the IEEE Third Millennium Medal, and an honorary degree of Dr.-Ing.E.h from Ruhr-Universitaet Bochum in Germany. He has been honored with the IEEE Magnetics Society achievement Award, the J. Fred Peoples Award, a Myerhoff Visiting Professorship at the Weizmann Institute of Science, and the International Conference on Ferrites Special Award. He is a Fellow of the IEEE, a life member of the Swiss Electrical Engineering Society, and an honorary member of the Magnetics Society of Japan. In 2001, Friedlaender was honored for his long time service to the IEWE Magnetics Society. He has chaired a variety of magnetics conferences and supervised dozens of PhD theses.



Fritz Friedlaender (left) and former dean Richard I. Schwartz celebrate Friedlaender's esteemed career at his retirement party.

Five Faculty Members Retire from ECE, continued



Frederic J. Mowle

Mowle (the infamous Derf Elwom) Retires from ECE, Leaves a Legacy of Curriculum Development

Viewing himself primarily as an educator, Frederic J. Mowle has been teaching undergraduate and graduate level computer engineering students at Purdue since 1966. Instrumental in developing the computer engineering program at Purdue, Mowle has developed over 25 computer engineering classes during his tenure, with subject content ranging from hardware to software.

Mowle earned three degrees, a BSEE, MSEE, and a PhD in 1959, 1961, and 1966 respectively, from the University of Notre Dame in Indiana. His research interests include data structures, software testing tools, and software engineering methodologies. Mowle authored the book *Systematic Approach to Digital Logic Design*. He was the founder and president of the company Unicorn Technical Consultants, Inc. From 1982-2001, Mowle chaired the Computer Engineer and Software Engineering Programs for the National Technological University, of which Purdue is a member.

Mowle was a consultant on software engineering with the Midwest Universities Consortium for International Activities (MUCIA), and in the 1990's Mowle spent months in Indonesia working with the University of Indonesia Computer Science Department. With his focus on curriculum development, Mowle's purpose was to help build a software engineering program. "There was an empty field," he says, "and now there are 20,000 students."

Mowle enjoyed teaching and watching students mature intellectually. His greatest satisfaction came from hearing of his former students' success and accomplishments. David Bradley, one of his former PhD students, was a member of the team of engineers that developed the IBM PC.



David A. Landgrebe

Landgrebe, Founding Member and Director of LARS, Retires from ECE

David A. Landgrebe joined a small group of faculty from across the campus to found the Laboratory of Applications of Remote Sensing (LARS) in 1966. LARS became one of the largest sponsored research projects at Purdue, and Landgrebe describes its inception as "a career-defining event." Serving as director from 1969-1981, Landgrebe helped LARS grow from a staff of few to more than 120 with expenditures rising from about \$300K/year to more than \$3M/year.

Landgrebe came to Purdue as a student, earning his BSEE, MSEE, and his PhD in 1956, 1958, and 1962 respectively. Joining the faulty in 1962, Landgrebe taught and conducted research in the area of signal theory and signal representation. From 1981 to 1984 he was associate dean of engineering and director of the Engineering Experiment Station. From 1986 through 1989 he served as coordinator of Graduate Programs for ECE. Landgrebe served as acting head of ECE from 1995 to 1996. Landgrebe also has held positions with Bell Telephone Laboratories, Interstate Electronics Corporation, and Douglas Aircraft Company.

Landgrebe has authored and co-authored a myriad of works, including *Remote Sensing: The Quantitative Approach*, one of the first textbooks of the area and a seminal work. A member of the editorial board for the journal

Remote Sensing of Environment since its inception in 1970, Landgrebe also has served as a guest editor for special issues of other publications, including IEEE Transactions on Geoscience and Remote Sensing and the IEEE Proceedings. Landgrebe has served on and chaired a number of National Research Council and NASA advisory committees.

Landgrebe holds membership in an array of professional and honorary societies, and is a Fellow of the Institute of Electrical and Electronic Engineers, the American Society of Photogrammetry and Remote Sensing, and the American Association for the Advancement of Science. Over the years, Landgrebe has received several outstanding teaching awards as well as merit awards. Among these are the NASA Exceptional Scientific Achievement Medal for his work in the field of machine analysis methods for remotely sensed Earth observational data and the IEEE Geoscience and Remote Sensing Society's Distinguished Achievement Award.

Although he is retiring, Landgrebe's ties to Purdue remain strong, for they are multigenerational. Landgrebe met his wife while they were both graduate students at Purdue, and his three children followed in their parents' footsteps, all obtaining degrees— two in chemical engineering and one in technology—from Purdue.

Lawrence L. Ogborn

Ogborn Retires from ECE, Students Benefit from his Development of Instructional Laboratories and Design Curriculum

When Lawrence L. Ogborn came to Purdue in the fall of 1956, his intentions were to obtain his MS degree and then return to industry. Now, 46 years later, Ogborn is retiring. "Such a variety of things have happened," Ogborn says. "I've seen new things every day."

Ogborn received his BSEE from Rose Hulman Institute in 1954, and his MSEE and PhD from Purdue University in 1957 and 1961, respectively. Ogborn started teaching at Purdue while working as a graduate teaching assistant/instructor in 1956, and he was hired as an assistant professor in 1961. Ogborn has held a number of professional positions at Purdue, including director of the Electric and Hybrid Vehicle Systems Development Laboratory, 1978-1984, and director of ECE laboratory programs, 1984-present. In addition, Ogborn has worked as the undergraduate and coop coordinator at Purdue, 1987-1997, and in the Required Senior Design Program in ECE, 1997-present. Before coming to Purdue, Ogborn worked at Bell Telephone Laboratories.

Ogborn's research interests and activities have included electronic systems, instrumentation, and power electronics. His most recent research has been in non-linear circuit theory, steady state solutions for driven systems (such as dc to dc converters), autonomous systems, and modeling and computer simulation of instrumentation and power electronics systems, excluding motor drives. Ogborn has done consulting for a number of companies in these areas and holds membership in several professional societies, including the Institute of Electrical and Electronic Engineers, the National Society of Professional Engineers, the American Association for the Advancement of Science, and the American Society for Engineering Education.

When one thinks of the Indy 500 track, Purdue doesn't usually come to mind. But Ogborn remembers a time when graduate students were "creeping around on the bottom." The students, desiring to test some electric test vehicles that were on campus, said that Purdue needed to build a test track. Knowing this was impossible and to cut off discussion, Ogborn suggested that the students call the folks in Indy and ask to run there. They called. "I've always admired our students' creativity," comments Ogborn. All was fine, according to Ogborn, until they shared the track with a pace car. As the students crept around the bottom, the pace car, running high-speed laps, whipped around above them. When the pace car blew an engine and spun out, a lesson on scheduling was learned. "Fortunately the Purdue car and the pace car were at opposite ends of the track when the accident occurred. We all agreed not to run at the same time after that."



Rangasami L. Kashyap

Kashyap Retires from ECE, World Renowned Expert in Pattern Recognition

Entered in the Who's Who in Frontiers of Science and Technology as well as other noted biography listings, Rangasami L. Kashyap has spent over 40 years at Purdue researching pattern recognition, image processing, system identification, time series, and database management systems. Kashyap was awarded, in India, his BS (honors) in 1958 from the University of Mysore and his ME (with distinction) in 1962 from the Indian Institute of Sciences. He received his PhD in 1965 from Harvard University, where he also spent time as a visiting professor. In addition, Kashyap shared his expertise at the University of California, Berkeley, as a visiting research associate.

A recipient of the International Association for Pattern Recognition 1990 King Sun Fu Award for fundamental contributions to pattern recognition and the Institute of Electronic and Telecommunications Engineers 1991 J.C. Bose Award for contribution to engineering science, Kashyap has left a legacy that is internationally recognized.

Kashyap was distinguished as a Fellow for the Institute of Electrical and Electronic Engineers in 1979, the International Association for Pattern Recognition in 1995, and at the Institute of Electronic and Telecommunication Engineers in India. The IEEE Computer Society also has awarded him several certificates of appreciation.

An active referee for over eleven journals and organization, Kashyap has spent time as an editor on the *IEEE Trans. Pattern Analysis and Machine Intelligence* from 1990-1995, the *Journal of Intelligent and Robotic Systems*, and the Journal *CVGIP: Graphical Models & Image Processing.* Kashyap has chaired a multitude of national and international conferences throughout the world, ranging in variety from the Third IEEE International Symposium on Intelligent Control to the American Society of Mechanical Engineers. Kashyap was the Associate Director of the NSF Engineering Research Center on Intelligent Manufacturing and has worked as a consultant to General Electric Company, Fort Wayne, Indiana. He is a member of the Harvard Society of Engineers and Scientists and the Honor Society Sigma Xi.

Six New Individuals Join ECE Faculty

ECE has been fortunate to recruit six outstanding individuals to the faculty in the past two years. Irith Pomeranz and Vladimir M. Shalaev held professorial rank where they taught before coming to Purdue. David S. Ebert and Jeffrey Mark Siskind were appointed as associate professors, and Y. Charlie Hu and Ilya Pollak joined the faculty as assistant professors.

Irith Pomeranz completed her bachelor's and doctoral degrees at Technion - Israel Institute of Technology where she also taught before accepting a position at the University of Iowa in 1990. She was a visiting associate professor at Stanford University in 1995 and was named a University Faculty Scholar at Iowa in 1997. She was promoted to the rank of professor at Iowa in 1998 and named a Fellow of the IEEE in 1999. Her research centers on design-for-testability and built-in self-test designs as well as the diagnosis of integrated circuits.

David S. Ebert completed his PhD at Ohio State University and joined the faculty of the University of Maryland, Baltimore County, the following year. He was a visiting associate professor at Stanford University in fall 2000 and joined the Purdue faculty in December. His imaging work has resulted in consulting contracts with a diverse group of organizations including the NASA Goddard Space Flight Center, the National Library of Medicine, the U.S. Patent and Trademark Office, and Electronics Arts, Inc.

A graduate of Massachusetts Institute of Technology, **Ilya Pollak** completed his PhD in electrical engineering

with a minor in mathematics. His research is concentrated in the areas of statistical signal and image processing, pattern recognition, diffusion equations, and computer vision. He did postdoctoral research at Brown University before coming to Purdue in August 2000.

Vladimir M. Shalaev received his master's degree in physics and his doctorate in physics and mathematics from Krasnoyarsk University in Russia where he was an assistant professor until 1990. He was a Humbolt Foundation Fellow at the University of Heidelberg in Germany, a research associate professor at the University of Toronto in Casna, and on the faculty at New Mexico State University from 1993 until he came to Purdue in 2001. Working in the research areas of nonlinear optics and quantum electronics, he is a specialist in optical properties of nanostructured materials.

Jeffrey Mark Siskind completed his bachelor's degree at Technion - Israel Institute of Technology and his master's and doctoral degrees at Massachusetts Institute of Technology. He taught at the University of Toronto and the University of Vermont and worked at NEC Research Labs before joining the Purdue faculty in December 2001. His research focuses on artificial intelligence, machine vision, computational linguistics, and computer systems. He is the creator of STALIN, SCREAMER, LEONARD, and HOWARD. He also invented behavioral silicon compilation and was the founder of MetaLogic.

Y. Charlie Hu joined the faculty in January 2002. He holds his BS in computer science from the University of Science and Technology of China, completed his MS and MPhil in computer science at Yale University, and received his doctorate in computer science at Harvard University. A specialist in operating systems and parallel computing, he was a postdoctoral researcher at Rice University before coming to Purdue.





Y. Charlie Hu



Ilya Pollak



Jeffrey Mark Siskind



Vladimir M. Shalaev



Irith Pomeranz

Endowed Professorships Awarded to ECE Faculty

James A. Cooper, Jr. has been named the Charles William Harrison Professor of Electrical and Computer Engineering. Cooper received a BSEE degree from Mississippi State University in 1968, a MSEE from Stanford in 1969, and a PhD from Purdue in 1973. From 1973 to 1983 he was a member of technical staff of Bell Laboratories, Murray Hill, New Jersey. While at Bell Labs, he served as a principal designer of AT&T's first microprocessor and developed a time-offlight technique for measuring the high-field drift velocity of electrons in inversion layers on silicon. In 1983 he became professor of EE at Purdue, where he was the founding director of the Purdue Optoelectronics Research Center. He served as associate editor of IEEE Transactions on Electron Devices from 1983 through 1986, and was elected Fellow of the IEEE in 1993. He was guest editor of the 1999 special issue of IEEE Transactions on Electron Devices on SiC device technology. He has co-authored over 200 technical papers and conference presentations (18 invited), 4 book chapters, and holds 11 U.S. patents. Since joining Purdue, he has been principal investigator on over \$22 million in sponsored research contracts, and recently he was named co-director of the Birck Nanotechnology Center, a major interdisciplinary research facility being constructed in Purdue's Discovery Park.

The Harrison professorship is named for Charles William ("Bill") Harrison (1917-1989), who received his BSEE from Purdue in 1938 and completed graduate studies at Lehigh University. Harrison began his career at Bell Telephone Laboratories in the TV Research Department. He was awarded his first patent in 1948 and quickly accumulated 19 more.

In 1954, he founded Harrison Laboratories in Berkeley Heights, New York, which began producing aperture equalizers, distribution amplifiers, sweep circuits, and other equipment for color television studios. In response to a specific order, Harrison designed a transistorized power supply so reliable that it won the company international recognition and resulted in the laboratory specializing in the production of power supplies. Harrison continued to head the company after its merger with Hewlett-Packard in

1961. He passed away in 1989 at his home in California.

Bill's son, Stephen R. Harrison, also is a graduate of ECE, earning his BSEE, MSEE, and PhD at Purdue. After a successful career as a psychologist, he has turned his attention to art photography and is known for his exhibit and accompanying book "Whispered Prayers – Portraits and Prose of Tibetans in Exile."

Mark S. Lundstrom has been named the Scifres Distinguished Professor of Electrical and Computer Engineering. Lundstrom is a professor in ECE and also has served as assistant dean of engineering and director of the Optoelectronics Research Center. His research centers on the physics, technology, and simulation of nanoscale electronic devices including both silicon transistors at the scaling limit and the unconventional transistors that may follow. He has authored many conference and journal papers on these topics as well as a textbook. Fundamentals of Carrier Transport (2nd Ed., Cambridge Univ. Press, 2000). Lundstrom also co-founded (with Kapadia and Fortes) of the PUNCH project which delivers nanoelectronic simulation services through the WWW. He serves on the Leadership Council of the MARCO/DARPA Focus Center on Materials, Structures, and Devices, a ten-university center focused on nanoscale electronic devices as well as on a number of conference program committees and advisory boards.

The professorship is named for Donald R. and Carol Scifres. Donald Scifres (BSEE 1968) holds 133 patents and is the author of more than 300 technical articles. In 1983, he founded Spectra Diode Laboratories, Inc., a maker of fiber optic components, and served as its president and CEO, until the company merged with JDL in 2000. He is a Purdue Distinguished Engineering Alumnus and, in 2000, was awarded the degree of Doctor of Engineering honoris causa. He and Carol Scifres have five children.

Don Scifres' father, Ray Edward Scifres, was a 1938 graduate of Purdue's School of Mechanical Encontinued next page



James A. Cooper, Jr.



Mark S. Lundstrom



Leah H. Jamieson

Faculty News Student News

gineering. Originally on the clerical and service staff, he joined the administrative/supervisory staff in electrical engineering in 1966 and in June 1975 retired from electrical engineering after 35 years service to Purdue. In 1949 he was an instrument maker in the Engineering Experiment Station and later, in the position similar to today's building deputy, was responsible for the Nuclear Engineering Lab facilities and for the EE building. Ray's wife, Ruth Maier Scifres, died in December 1988, and Ray passed away in May 1993.

Leah H. Jamieson, Professor of Electrical and Computer Engineering, has been appointed the Ransburg Professor of Electrical and Computer Engineering. Jamieson received a BS degree from Massachusetts Institute of Technology in 1972, an MA and MSE degree from Princeton University in 1974, and a PhD from Princeton University in 1977. Jamieson came to Purdue in 1976. The co-founder of the Engineering Projects in Community Service (EPICS) program at Purdue, Jamieson is currently a co-director of the Purdue EPICS program and the National EPICS program. It is through the EPICS program that undergraduate students earn academic credit for projects that solve engineering based problems for community service and education organizations. EPICS programs are now running at eight universities. "Everything with EPICS continues to be an adventure," Jamieson states.

Jamieson's research interests include speech analysis and recognition; the design and analysis of parallel processing algorithms; and the application of parallel processing to the areas of digital speech, image, and signal processing. Jamieson is collaborating with colleagues from speech science, psychology, and artificial intelligence on the integration of speech recognition and natural language processing systems and on the integration of gesture and gaze analyses with speech recognition.

The author or co-author of over 150 publications, including journal and conference papers and book chapters, Jamieson has been awarded numerous honors, including the IEEE Third Millennium Medal in 2000. She was named an IEEE Fellow in 1993 "for contributions to the design and characterization of parallel algorithms for speech, image, and signal processing applications."

Jamieson also has been recognized for her teaching, receiving, among others, the ASEE 1997 Chester F. Carlson Award for Innovation in Engineering Education with Edward J. Coyle, the IEEE Education Society 2000 Harriet B. Rigas "Outstanding Woman Engineering Educator" Award, and the National Science Foundation 2001 Director's Award for Distinguished Teaching Scholars.

Jamieson was the 1998-99 president of the IEEE Signal Processing Society and has been elected 2003 IEEE vice president for technical activities. She has chaired numerous professional committees and is the founding chair of the Coalition for Women in Computing Leadership Committee, 1999-present.

Jamieson has served as the subject editor for the *Journal of Parallel and Distributed Computing*, 1985-92, and the associate editor for *IEEE Transactions on Acoustics, Speech, and Signal Processing*, 1986-87, and the *IEEE Transactions on Parallel and Distributed Systems*, 1991-94.

Note: Additional ECE faculty members have been nominated for endowed professorships and are awaiting approval by the Purdue Board of Trustees in a meeting later this year.

Jason McKinney Named Associate Member of Teaching Academy

In the fall of 2001, ECE graduate student Jason McKinney was inducted into the Teaching Academy as one of only four individuals honored as an associate Fellow. The Teaching Academy is a Purdue institution formed to provide leadership and serve as a catalyst to enhance and strengthen the quality of undergraduate, graduate, and outreach teaching and learning at the University.

McKinney, a teaching assistant in ECE since 1997, is responsible for two senior level optics laboratory courses. McKinney's teaching ability has garnered him several previous awards including the Purdue graduate student award for outstanding teaching in 1999-2000 and the Estus H. and Vashiti L. Magoon Award for outstanding work as a graduate teaching assistant in both the 1998-1999 and 1999-2000 academic years. McKinney also has received a GAANN Fellowship, which he will use to prepare for a career in academia.



2000-2001 Fellowship, Scholarship, and Award Winners

DEPARTMENTAL MERIT-BASED SCHOLARSHIP RECIPIENTS

Boeing Scholarship: Christopher Jerger

BP Amoco Scholarship: Matthew Lindsey, Quinn Kirsch

Charles & Anna Holder Scholarship: Nathan Abel, Joseph Engler, Ryan Reynolds, James Sherman, Eric Tkaczyk

Charles Pittman Scholarship: Matthew Cooke, David Cottongim, Benjamin Larson, Kristin Kellogg, Bryan Flynn, Pete Richmond, Brandon Rigg, Prabhakar Srivastava, Robert Stiasny

Cincinnati Milacron Scholarship: Jonathan Collins

Dorothy Diggins-Wiggins & Albert Wiggins Scholarship:

Timothy Helvey, Jedidiah McCreary, Paul Niksch, Eric Trapp, Aaron Wanstrath

ECE Merit-Based Scholarship: Kazim Ali, Michael Hendrickson, Joseph Huigens, Rouzbeh Jazayeri, Shawn Jordan, So-Young Kim, Yat-Chung Lee, Reshma Mehta, Sung-Min Park, Kimberly Quinlan, Erin Satterfield, Riyang Tandjaja, Adam Zysk

Electrical Manufacturing Coil Winding Association Scholarship:Orrin Lorenz, Douglas Young

E-Systems Scholarship: Timothy Deller, Michael Maletich

Fessenden-Trott Scholarship: Christopher Coy, Sean Duff, Mark Harris, Aaron Massey, Brian McCammack, Gretchen Sunko, James Telecsan

George E. Hollister Scholarship: John Becker

Karl H. Bollenbach Scholarship: Scott Brock, Wade Miller

Long Electric Scholarship: Gregory Enos, John Jen

McDonnell Douglas Boeing Scholarship: Angela Hagelbarger, Susy Marduli, Akanksha Mehrotra

Professor El-Abiad Scholarship: Suraj Kripalani, John Londt, William Nagel, Ulas Ziyan

Rappaport Scholarship: Nazim Lala

RCA Zworykin Scholarship: Casey Diekman, Todd Jordan, Mark Rohrer

Schlumberger Collegiate Scholarship: Bahaa Fahim

Square D Scholarship: Themen Danielson, Deserina Deserina, Blayne Christopher Smith, Jeffrey Uram, Anthony Young

Tellabs Scholarship: Matthew Slessman

Tellkamp Scholarship: Matthew Newton, Johan Rahardjo

Verizon Scholarship: Valentine Abramzon, Raymond Baxter, Michael Crogan, Tonya Drake, Jason Molenda, Xiang Wang

William & Mary Meese Scholarship: Ross Allen Beehler, Matthew Benns, Joel Predd, Mike Shettel, Patrick Toomey, Anthony Van Riet

OTHER SCHOLARSHIPS AND AWARDS

Eta Kappa Nu: Outstanding Sophomore Award: Yat-Chung Lee

Eta Kappa Nu: Outstanding Junior Award: Eric Robert Tkaczyk

Eta Kappa Nu/Elias M. Sabbah Outstanding Senior Award:Anthony Van Riet

NSF Computer Science, Engineering, & Mathematics Scholarship:Rouzbeh Jazayeri, Reshma Mehta, James Pabis

Purdue Student Engineering Foundation Outstanding Senior Award:

Tonya Drake

William L. Everitt Student Awards of Excellence: Kristin Kellogg, Joel Predd

FELLOWSHIP RECIPIENTS

Andrews & McDonnell Douglas Boeing Fellowships: Ariana Kalter

Andrews & RCA Zworykin Fellowships: Ruibing Lu

Beering Fellowship: Adam Milstein

Birck Fellowship: Santosh Nagaraj, Prashant Sripathi

Gates Millennium Fellowship: Michael Gerhold

GEM Fellowship: Kizzy Lejay, Nnake Nweke, Ronald Page, Tiffini Smith, Linda Tinoco, Alberto Vega

Graduate Opportunities & Birck Fellowships: David Vallejo

Graduate Opportunities & McDonnell Douglas Boeing Fellowships:Eduardo Juan, Laron Walker

Intel Masters Award: Kevin Corry, Kenneth Fischer

Intel PhD Fellowship: Jeffrey Herdtner

Mary I. Williams Fellowship: Ayon Basumalik, Aigun Cao

Meissner Fellowship: Amit Agarwal, Mohammed Gomaa, Hai Li, Christopher Niessen, Martin Plawecki, Benjamin Thompson, Yu Ying

NASA Fellowship: Daniel Teany

National Science Foundation Fellowship: Alan Fern, Michael Powell

National Science Foundation/IGERT Fellowship: Sea Chen, Benjamin Loop, Jennifer Talavage, Greg Tamer

RCA Zworykin Fellowship: Vivek Mhatre, Arthur Mills

Semiconductor Research Corporation Fellowship:

Cassondra Crotty-Neau, Naran Sirisantana

Whitaker Fellowship: John Brandon Laflen

Estus H. and Vashti L. Magoon Awards for Graduate Teaching Assistants

Ahmed Ahsen, Mark Bradley Breinholt, Le-Ren Chang-Chien, Shawn M. Davidson, Praveen K. Dongara, Douglas M. Eschbach, Mohammad Sohail Hashmi, Chris Kim, Sherman Jordan Kisner, Jason D. McKinney, Kurt W. Otte, Leyla Parvizi, Yen-Shiang Shue, Lynne A. Slivovsky, Christopher Svec, Pranesh Thirukkonda



2001-2002 Fellowship, Scholarship, and Award Winners

DEPARTMENTAL MERIT-BASED SCHOLARSHIP RECIPIENTS

BP Amoco Scholarship: Afua Bruce, Ryan Hicks

Caterpillar Scholarship: John Becker, Samir Chopra, Matthew Letinen, William Nagel, Douglas Young

Charles & Anna Holder Scholarship: Ryan Dennison, Timothy Helvey, Landis Huffman, Quinn Kirsch, Gregory Springer, Rajeeve Subbiah

Charles & Anna Holder & Donald Quillin Scholarships:

Matthew Newton

Donald Quillin Scholarship: Wonbin Hong

Dorothy Diggins-Wiggins & Albert Wiggins Scholarship:Hong Jin Cho, Timothy Deller, Jason Molenda

ECE Merit-Based Scholarship: Themen Danielson, Gregory Enos, Todd Jordan, Chad Loewenstine, Johan Rahardjo, Ryan Shartle, Anthony Young

Fessenden-Trott Scholarship: Christopher Coy, Sean Duff, Mark Harris, Dimitris Karabinis, Aaron Massey, Brian McCammack, Blake Strouse, James Telecsan

George E. Hollister and William Hayt Scholarships: Jeff Leupold

George E. Hollister Scholarship: John Londt, Ashray Ramachandran

Giles Morrill Memorial and Verizon Scholarships: Nadim Ahmed

Giles Morrill Memorial Scholarship: YiFei Dong, Jeffrey Turkstra

Karl H. Bollenbach Scholarship: Aaron Brunner, Edward Romic, Honggo Wijaya

Long Electric Scholarship: Michael Kretsch, Hamzah Farid Nassif, Nathan Stuckey

McDonnell Douglas Boeing Scholarship: Adegbile Adewunmi, Kristen Cattin, Natalie Enright, Maria Groszek, Angela Hagelbarger, Susy Marduli, Kimberly Quinlan, Fajri Zaid Saca

Professor El-Abiad & William Hayt Memorial Scholarships:

Jeffrey Uram

Professor El-Abiad Scholarship: Christopher Carlevato, Ivan Fung Teck Lim, Sung-Min Park, Ryan Riley, Mark Rohrer, James Sherman, Jr., Edwin Tjandranegara

Rappaport Wireless Communications Scholarship: Pablo Estrada, Mohamed Fayaz Khatri, Vibhav Kapnadak, Gregory J. Tomezak, Gilbert Tseng

Schlumberger Scholarship: Blayne Smith

Stephen J. Woods Memorial Scholarship: Timothy Norwood

Tellkamp Scholarship: Michael Burton, Joseph Engler, Fengquing Zhu, Faizatun Izzah Zohedi

Thomas A. Prewitt Scholarship: Raid Habayeb

Verizon Scholarship: Raymond Baxter, Michael Benko, Mark Deneau, Michael Hendrickson, Rouzbeh Jazayeri, John Jen

William & Mary Meese Scholarship: Gregory Brinkman, Christopher Jerger

William Hayt Scholarship: Bhavin Pandya

OTHER SCHOLARSHIPS AND AWARDS

Motorola Student Excellence Award: Natalie Enright

NSF Computer Science, Engineering, & Mathematics Scholarship:

Akif Ali, Hong Jin Cho, Matthew Cooke, Eric Curiel, Gregory Enos, Rouzbeh Jazayeri, Reshma Mehta, James Pabis, Sid Raghunathan, Joseph Monical

Purdue Student Engineering Foundation Outstanding Senior Award: Matthew Newton

William L. Everitt Student Awards of Excellence: Natalie Enright, Gilbert Tseng

FELLOWSHIP RECIPIENTS

Andrews and Mary I. Williams Fellowships: Troy Johnson, Ariana Kalter, Ruibing Lu, Shijun Xiao

GEM Fellowship: Courtney Amos, Shedrick Bessent, Brandon Cassimere, Brant Cassimere, Mercedes Lorenzo, Alberto Vega

Graduate Assistance in Areas of National Need Fellowship:

Jason McKinney, Arthur Mills, Cory Prust, Kirk Riley

Graduate Opportunities and Mary I. Williams Fellowships:

Laron Walker

Intel Masters Award: Amee Schlosser

Intel PhD Fellowship: Brian Armstrong, Michael Powell

Lynn Fellowship: Bong Sun Lee

Meissner Fellowship: Vinek Bhagat, Brian Khineman, Parker Kuhl, Yeong-Chuan Lim, Sung-Min Park, Chad Scarbrough, Fook Shian Toong, Ryan Traylor, Jing Wang, Buyue Zhang

National Science Foundation Fellowship: Jacob Harris, Brandon Hombs, Orrin Lorenz, Jennifer Talavage

 $\textbf{National Science Foundation/IGERT Fellowship:} \ \mathsf{Greg Friel},$

Richard Kennell

Ross and RCA Zworykin Fellowship: Zhelong Pan,

Francisco Ugarte Piera, Ning Wu

Semiconductor Research Corporation Fellowship:

Cassondra Neau, Naran Sirisantana

Special Initiatives Fellowship: Parul Kapur

Whitaker Fellowship: John Brandon Laflen

OTHER AWARDS FOR GRADUATE STUDENTS

Motorola Student Excellence Award: Mark Webster

Purdue Student Engineering Foundation Outstanding

Graduate Student Award: Jeffrey H. Jackson

Estus H. and Vashti L. Magoon Awards for Graduate Teaching Assistants

Umesh Chejara, Xiawei Ding, Christopher K. Fleck, Mevan Gunawardena, Dongku Kang, Bernardo Mesa, Tarkesh Pande, Mohamed Shehab, Theodorus Simarmata, Brett H. Stanes, Elvia Suryadi, Gregory Tamer, Fan Zhang

Alumni Generosity Makes Nano Facility a Reality

The state of Indiana launched the funding for an interdisciplinary nanotechnology research center with a seed fund of \$5 million, but it is the generosity of alumni that makes it possible for construction to start in 2002.

Michael and Katherine (Kay) Birck of Hinsdale, Illinois, and Donald and Carol Scifres of Los Altos, California, gave the lead gifts for the new nanotechnology facility. Michael Birck, a native of Clinton, Indiana, is chairman of Tellabs Inc., which develops and manufactures special telecommunications equipment. Kay Birck, a native of Terre Haute, Indiana, is head of nursing at Women's Healthcare of Hinsdale. Donald Scifres, a Silicon Valley entrepreneur, is co-chairman of

the board and chief strategy officer of JDS Uniphase Corp., an optical communications company. Donald and Carol Scifres are both Greater Lafayette area natives, and both are Purdue graduates. In recognition of their gifts, Purdue will name the building after the Birck family and will name a wing of the new facility for Donald Scifres' late father, Ray, who was a member of Purdue's electrical engineering staff for 35 years before retiring in 1975.

Bill Elmore and Kevin Hall, both of Palo Alto, California, and Orville Martin of Rockport, Indiana, also made generous gifts. Both Elmore and Hall are general partners of venture capital firms investing in early stage companies in the information technology areas, Hall of Northwest Venture Capital, Elmore of Foundation Capital.

Martin, secretary-treasurer of Martin-Serrin Company, a general insurance agency, summed up why he was motivated to provide funding to the new center. "I truly feel that this is the future of where we're going with computer chip technology," he says. "And Purdue should always be about the future."

The Birck Nanotechnology Center will be one of the first buildings in Discovery Park, a complex to be built south of State Street near Airport Road. Construction on the three-floor, 200,000-square-foot nano building will begin



Shown operating remote-controlled earth-moving equipment in anticipation of the Birck Nanotechnology Center's expected spring 2003 groundbreaking are J. Timothy McGinley, president of Purdue's board of trustees; U.S. Representative Brian Kerns (Ind.); U.S. Senator Evan Bayh (Ind.); U.S. Representative Steve Buyer (Ind.); electrical and computer engineering student Michael Powell; Governor Frank O'Bannon; donor Michael Birck; Ann Ludwig, sister of donor Donald Scifres; biomedical engineering student Jeremiah Bwatwa; and electrical engineering student Jeanine Friedrich.

in the spring of 2003, and the structure is expected to be completed in the spring of 2005. The new center will be one of the most advanced research facilities in the nation for nanotechnology, a field that will be critical in the 21st century.

Nanotechnology is an emerging science in which new materials and tiny structures are built atomby-atom, or molecule-by-molecule, instead of through the more conventional approach of sculpting parts from pre-existing materials. Nano is a prefix meaning one-billionth, so a nanometer is one-billionth of a meter. A human red blood cell is about 7,500 nanometers across, and one nanometer is

roughly 10 atoms wide. The letter "I" printed here is about one million nanometers wide! Just as antibiotics, the silicon transistor, and plastics affected nearly every aspect of society in the 20th century, nanotechnology is expected to have profound influences in the 21st century. Nanotechnology will have numerous applications in everything from super-small computers and spacecraft to microscopic medical devices and new materials.

Many U.S. universities have specialized laboratories for microelectronics research, but those labs were designed primarily for conventional semiconductor processing. The Purdue lab will be designed specifically for interdisciplinary research. "Purdue already has dozens of top researchers in nanotechnology," says President Martin C. Jischke. "This new nanotechnology facility will position Indiana to become a player in the 'Silicon Valley' of the future." Combining the nation's best laboratories with some of the country's top researchers will make the Center a magnet for top engineers, scientists, and students. It is also expected to attract millions of dollars of research money from the government and from high-tech industry.

"Purdue is already a leader in the emerging field of computational nanotechnology, the use of computer simulation to study the operation of nanoscale structures and devices," says Jim Cooper, professor of electrical engineering, whose leadership of the Birck Nanotechnology Center dates back to 1996. "We plan to leverage our skills in this area with our traditional strengths in novel electronic devices and materials to address problems in the field of molecular electronics, the heterogeneous integration of organic molecules with silicon electronics. Molecular electronics opens the door for dramatic advances in electronic technology, similar to the revolution that occurred when the transistor replaced the vacuum tube."

George Adams, a Purdue engineer who headed the planning committee for the facility, says Purdue and the state have a unique opportunity to become a national leader in nanotechnology. "Nanotechnology is an area that is still in its infancy and not yet dominated by a particular geographic location, as Silicon Valley dominates the computer industry. That means nobody has a compelling lead at this point, so this is an area in which you can become a big player fairly easily. We have the potential to make Indiana a hightech region in the United States for this kind of technology."

The Birck Nanotechnology Center will be codirected by Cooper and ECE professor Richard J. Schwartz.

Ford Gift Benefits Robotics Research

Ford Motor Company announced that it will donate more than \$5 million to Purdue to support a new laboratory and expand robotic research.

The donation will support professor Avi Kak's Robot Vision Labs and will create the Perception Based Engineering (PBE) Laboratory, where researchers will test people's reactions to such things as visual stimuli, sound, temperature, and touch. This will aid manufacturer design of engineering and automotive systems for new products. The researchers involved will include faculty from ECE and mechanical engineering, in addition to psychological sciences and audiology and speech sciences.

"Ford Motor Company is strongly committed to being the global consumer company of the future. Education and experience are the two best tools for preparation," says Wayne Booker, vice chairman of the Ford Motor Company. "We recognize and encourage Purdue's educational leadership that is so vital to the 21st century's global business community."

The Ford donation also supports interdisciplinary research in robotic assembly systems used in manufacturing in the Robot Vision Lab (directed by Professor Avi Kak), an ongoing research facility in which Ford previously has invested money and technology.

"On the cusp of the 21st century, applied interdisciplinary research, especially in these still-emerging fields, is one of the keys to a productive future," says President Martin C. Jischke. "We appreciate Ford's commitment to our research and to our students. Ford and Purdue University make a great team."

The perception-based engineering lab will be part of the Ray W. Herrick Laboratories. Researchers will be able to control sound, vibration, lighting, temperature, humidity and air quality, simulating realistic environments such as the inside of a car or a workplace. Sixteen faculty members are expected to use the new lab, which should be operational in three to four years. It also will provide research opportunities and training for graduate students. Conditions in the lab will be adjusted to suit many types of research. ECE faculty in the new laboratory include Professors Jan Allebach, Charles Bouman, Edward Delp, Mary Harper, Leah Jamieson, Zygmunt Pizlo, Tom Talavage, and Hong Tan.

"Researchers are interested in how people perceive and are affected by engineered products," says Patricia Davies, an associate professor of mechanical engineering who helped spearhead the effort to raise money for the new lab. "We also are interested in how people perform in environments filled with engineered products, and so we customize the design of the products for the environments in which they are being used. Understanding people's responses will help us create products and en-

vironments where people can work well and enjoy themselves."

With this pledge, Ford has committed almost \$9 million for Purdue between 1999 and 2004. Ford gave a \$3.8 million donation to Purdue for minority scholarships, the Krannert New Building Campaign, and NVH Center of Excellence. Over the past decade, Ford's contributions to Purdue total more than \$14 million.



Professor Avi Kak (center) shows Ford executives the Robot Vision Laboratory during a visit to ECE in January, 2001.

ECE Honor Roll 2000-2001 Individuals

Private giving from friends and alumni and corporate gifts are essential components for realizing ECE's vision of leading the nation in learning, discovery, and engagement. In addition to national and state government funding, funds generated by the ECE faculty through sponsored research, and student fees and tuition, gifts provide a strong foundation of support for achieving ECE's strategic plan.

In our fall/winter issue of Wavelinks, you'll learn more about our campaign goals, lead gifts, trends in giving, and case for support when you hear from our new director of development, Margarita Contreni.

Meanwhile, checks and stock gifts designated for ECE continue to arrive throughout the year at the Purdue Foundation. Shipments of equipment, both large and small, arrive on the ECE dock as gifts from our corporate partners. Dozens of corporations provide speakers for seminars and parts for student projects. Alumni return to campus to share their expertise with students. These gifts of money, stock, equipment, time, and talent impact every aspect of the School. Each and every gift is deeply appreciated. Each gift contributes to keeping ECE among the top programs in the nation.

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James R. Eaton, Jr.

Eaton Awards in Design Excellence for 2001-2002

James R. Eaton, Jr. (BSEE '58, MSEE '63, and PhD '67) and his wife, Shirley of Palo Alto, California, established the Eaton Awards in Design Excellence to recognize and encourage excellence in design by students and alumni of ECE and to honor the faculty members who inspire them.

Awards are made annually to alumni, professors, and students from each of the School's senior design classes. The alumni award recognizes outstanding early contributions to the field by a graduate who received a degree from ECE within the past five years. The award also recognizes teaching that promotes excellence in design; the winner of the alumni award is asked to identify the ECE professor or staff member (current or retired) who had the greatest impact on his/her design education.

Throughout his very successful career with Hewlett-Packard, James R. Eaton, Jr. devoted his efforts to improving design and the design process. In the fall of 2000, he and his wife Shirley established an endowment to fund the Eaton Awards in Design Excellence. His father, James R. Eaton, Sr., also received his PhD from Purdue and was a faculty member in ECE from 1942 to 1967.

2001 Recipients

The First Eaton Awards in Design Excellence were awarded during the ECE Industrial Affiliates Workshop in the spring of 2001 to alumnus Daniel Elmhurst, Professor Emeritus John Lindenlaub, and three students.

Daniel R. Elmhurst (BSEE '96) is a circuit design engineer with Intel Corporation in Folsom, California. Elmhurst has played an active role on the design teams for two major projects: the Intel Firmware Hub® security chip and the 1.8-Volt Dual-Plane Flash Memory®, a mixed signal charge pump circuit. His contributions to these design projects led him to be named the youngest member of the research and development team for the Flash Products Group's next process generation design, and he has been given the responsibility for the development and implementation of a new program algorithm for Intel's StrataFlash® multi-level cell device.

Elmhurst named Professor Emeritus **John Lindenlaub** as the individual who had the greatest impact on his design education at Purdue. Lindenlaub came to Purdue to pursue his PhD and started his career here as an instructor in 1957. Deeply devoted to teaching and his students, he developed 21 new courses for the School. He was an early supporter of video instruction and was repeatedly honored by the American Society for Engineering Education (ASEE). He received the Helen Plants Award at the Frontiers in Education Conference three times (1980, 1987, and 1993), the Chester F. Carlson Award in 1988, the Distinguished Service Citation in 1993, and the Distinguished Service Award from the Educational Research and Methods Division of ASEE in 1999. He retired in May 1999.

Student award winners selected from each of the three spring design classes were **Valentin M. Abramzon, Deserina Deserina,** and **Ilija Stojic**.



David R. Elmhurst



John Lindenlaub

2002 Recipients

The second round of Eaton Awards in Design Excellence recipients were awarded during the ECE Industrial Affiliates Workshop in the spring of 2002. The awards went to alumni Rob Knoth and Louis Litwin, faculty members Raymond DeCarlo and Michael D. Zoltowski, and five students.

Rob Knoth (BSEE) earned his bachelor's degree in 1998. He was a co-op student at Tektronix and upon graduating, accepted a position in the advanced development group. He was the sole engineer on a digital video crosspoint used in giant video switchers. He also was the sole engineer on a high-resolution, channel digital-to-analog converter and is now a lead physical designer.

Raymond DeCarlo was named by Knoth as the professor who had the greatest impact on his design education at Purdue. DeCarlo completed his bachelor's and master's degrees in electrical engineering at the University of Notre Dame and his doctorate at Texas Technical University. DeCarlo joined the Purdue faculty in 1977. He is the author of three books, has contributed chapters to other texts, and has received several electrical engineering distinctions.

Louis Litwin (MSEE) earned his master's in electrical engineering in 1999. He is a member of the technical staff at Thomson Multimedia Corporate Research in Princeton, New Jersey. He received his bachelor's degree summa cum laude from Drexel University in 1997. He has published more than 20 papers on the topics of digital communications and digital signal processing and has 24 patents pending for inventions related to digital communications.

Michael D. Zoltowski was named by Litwin as the professor who had the greatest impact on his education. Zoltowski received a bachelor's and master's degree in electrical engineering, with honors, from Drexel University. He completed his doctorate in systems engineering from the University of Pennsylvania. In 1986, he joined the Purdue faculty. During 1987, he held a position of summer faculty research Fellow at the Naval Ocean Systems Center in San Diego. He received the IEEE Outstanding Branch Counselor Award for 1989-1990, the Ruth and Joel Spira Outstanding Teacher Award for 1990-91, and the 2002 Hesselberth Award for Teaching Excellence. In 2001 he was honored by Purdue as a University Faculty Scholar.

Student award winners were Susy Marduli, Juan Pablo Pertierra, Mulyatanto Djonni, Evan Utama Tjandra, and Victor Chong.



Louis Litwin



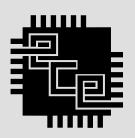
Michael D. Zoltowski



Rob Knoth



Raymond DeCarlo



ALUMNI HONORS 2000

Feulner and Lindsey Named DEAs in 2000

In April 2000, two ECE alumni, Roger J. Feulner and William C. Lindsey, were among the ten individuals honored with the Distinguished Engineering Alumni Award, the highest honor based on professional achievement that is awarded by the Schools of Engineering.

Roger J. Feulner (BS '61, MS '63) devoted almost his entire career to one company, Honeywell, the world's leading provider of control technologies. Feulner joined the company as an engineer in the Building Division in 1967. When he retired in December 1998, he was vice president for Technology Assessment and Alliances, a company with 57,000 employees and annual sales of more than \$8.4 billion.

During his career, Feulner held key positions in general management, marketing, engineering, and research in the areas of building control systems, computer systems, and government re-

> search contracting. He was in charge of highly successful technology development and transfer programs in the U.S. and overseas, and was responsible for breakthrough product developments. Each of his assignments has had a high technical content with emphasis on software development, communications, and system architecture, but he was also responsible for the formation and management of focused and effective organizations.

> > As head of Honeywell's University Affiliates Pro

gram, Feulner was instrumental in instituting the Honeywell Awards to recognize outstanding teaching by professors and graduate students in ECE. He was named an Outstanding Electrical Engineer in 1993.

William C. Lindsey (MS '59, PhD '62) is a professor of electrical engineering working in the Communications Sciences Institute at the University of Southern California-Los Angeles. He is also the founder, CEO, and chairman of LinCom Corporation, an industry leader in developing technology for federal space satellite communications programs and commercial satellite-based and ground-based personal communication systems. With more than thirty years of experience, he is an internationally known expert in the field of communication sciences.

Lindsey has published landmark papers on wireless communications and is the author or coauthor of more than eleven books, including three popular textbooks and two IEEE Press books. His inventions and patents have been implemented in numerous communication satellite systems and ground station receivers and have played a major role in the Ranger, Pioneer, Mariner, Voyager, and Shuttle programs. A Fellow of the IEEE and a member of the National Academy of Engineering, he received the Outstanding Electrical Engineer Award in 1997.

Active in the IEEE, Lindsey was co-founder of the IEEE Communications Society and has served as the technical program chairman for numerous national and international conferences. He is a member of Commission C, Signals and Systems of the International Scientific Union (URSI), and of the CCIR Standards Committee.



2000 Outstanding Electrical Engineers

Seven ECE alumni were named Outstanding Electrical Engineers at an awards dinner at the Radisson Hotel in October 2000. They were: Arthur J. Bond, dean, School of Engineering and Technology, Alabama A&M; Paul S. Borzcik, vice president and program manager for Astrolink, TRW; Robert Hopkins, senior vice president and general manager, high definition Center, Sony Pictures; Jack R. Kelble, vice president, Raytheon Electronic Systems; Russell J. Kerkman, engineering consultant, Allen Bradley/Rockwell International; Christine M. Maziar, vice president for research and dean of the Graduate School, University of Minnesota; and William A. Thompson, consulting member of Technical Staff, Bell Laboratories, Lucent Technologies.

As an EE graduate student, Arthur J. Bond (BS '68, PhD '74) was a co-founder of the National Society of Black Engineers (NSBE). After completing his PhD, Bond taught at Purdue and worked for RCA and Allied Signal before becoming head of the Electrical Engineering Department at Tuskegee University in 1989. He became dean at Alabama A&M in 1992, greatly broadened the engineering program, and directed the construction of a new \$14.5 million building for the school. Bond has received the Vincent Bendix Award (now the Minorities in Engineering Award) from the American Society for Engineering Education (ASEE), the Reginald H. Jones Award from the National Council for Minorities in Engineering (NACME), the Purdue Alumni Service Award, and the Golden Torch Award from NSBE.

Paul S. Borzcik (BS '72) holds two patents in the field of computer control systems. He joined TRW's corporate science and technology staff in Cleveland in 1978 and moved to the Redondo Beach facility in 1981. He was manager for the Electronic Manufacturing Operations and then was named manager of the Milstar Payload Program with responsibility for low and medium data-rate payloads. His success with the program is reflected by the fact that he was promoted to vice president when that program ended. Today Borzcik is vice president and program manager of the Astrolink Program in the Telecommunication Programs Division of TRW's Space and Electronics Group and has approximately 500 engineers who are involved in the project reporting to him.



The 2000 class of Outstanding Electrical Engineers pose with the head of ECE and the former dean (left to right): Christine M. Maziar, Kent Fuchs, Russel J. Kerkman, William A. Thompson, Robert Hopkins, Arthur J. Bond, Jack R. Kelble, Paul S. Borzcik, and Richard J. Schwartz.

Robert Hopkins (BS '64) studied to be a solidstate engineer, but was continually drawn to television systems. In 1976, he transferred from RCA's David Sarnoff Research Center to the RCA Broadcast Systems Division where he held positions in engineering, strategic planning, and business management before being named the managing director of an RCA European subsidiary. Hopkins was a member of the RCA communications team that preceded President Nixon's trip to China, and executive director of the Advanced Television Systems Committee, which developed the digital broadcasting standard adopted by the FCC. He has served on the board of directors of the Model HDTV Station Project. He holds seven patents, received the 1998 National Association of Broadcasters' Television Engineering Achievement Award, and has won an Emmy for his work.

As vice president of Raytheon Electronic Systems, Jack R. Kelble (BS '65) is in charge of the work of more than 19,000 engineers at more than 20 locations. He worked for RCA for 14 years before joining Raytheon in 1979. At Raytheon he has held a wide range of management positions, including serving as vice president of integrated systems in the Command, Control, and Communications Division, and as man*continued on next page*



Arthur J. Bond shows off his OEE award.



Paul S. Borzcik opens his award while Margaret Borzcik looks on.



Hanna and Robert Hopkins celebrate after the awards ceremony.



Jack Kelble receives his plaque from Kent Fuchs.

ager of Raytheon's Command, Control, Communications, and Surveillance activities. Prior to his current assignment, Kelble was senior vice president and deputy general manager of the Sensors and Electronic Systems Segment and led activities in ground, shipboard, and airborne electronic defense systems. He also headed the Raytheon team for the acquisition of Texas Instruments Defense.

Russel J. Kerkman (BS '71, MS'73, PhD '76) started his industrial career at General Electric Corporate Research and Development. In 1980, he joined the Allen-Bradley Company/Rockwell. He has made significant contributions to the development of controllers and self-controlled adaptive motor inverter drives. His present responsibilities include identification of critical technologies affecting near and long-



Russel Kerkman accepts the OEE award from Kent Fuchs.

term ac drive and drive system performance, system analysis and commissioning procedures, and interaction of power devices and load impedance. Kerkman holds or co-holds 24 U.S. and/or foreign patents for ac industrial drives and is an adjunct professor at the University of Wisconsin-Madison. In 1998, he was inducted into the National Corporate Inventors Society at the 1998 National Salute to Corporate Inventors in Akron, Ohio.

As vice president for research and dean of the Graduate School at the University of Minnesota, **Christine M. Maziar** (BS '81, MS'84, PhD '86) presides over the expenditure of more than \$204 million in federal and \$144 million in privately-funded sponsored research. She also oversees the program for more than 7,000 graduate students in 163 major fields. After completing her doctorate, Maziar joined the faculty at the University of Texas at Austin, where she received 12 teaching and faculty excellence awards and was a NSF Presidential Young Investigator. She spent a year as a visiting research professor at Intel, and in 1995 was named vice provost for the university.



Christine Maziar gives a few comments after accepting the OEE award.



William and Dianne Thompson pose with William's OEE plaque.

William A. Thompson (MS '79) began his career in the Lightwave Department at Bell and worked on the development of the first lightwave products put into service in the Bell System for long distance communication. He was named a distinguished member of the technical staff in 1989 and has led the teams defining a half-dozen commercially successful transport products. He was the key architect in defining Lucent Technology's 80-channel dense wavelength division multiplex optical line system. In 1997, he was named a Bell Labs Fellow, the most prestigious award made by Bell Labs. Thompson has six patents pending in the area of product system architectures and is working on the architecture for the next generation of very high capacity and long distance optical transport products.

ALUMNI HONORS 2001

Held and Wang Named DEAs in 2001

Two ECE alumni, Gerald D. Held of San Jose, California, and Patrick S.C. Wang, of Hong Kong, were among ten graduates from the Purdue Schools of Engineering who were honored in April during the 2001 Distinguished Engineering Alumni Convocation.

Gerald D. Held graduated from Purdue in 1970 and received his master's degree from the University of Pennsylvania while working at the David Sarnoff Labs. He completed his PhD in computer science at the University of California, Berkeley, where he wrote the original Quel query language and was the chief-programmer and co-architect of the original INGRES relational database management system.

Joining the fledgling Tandem Computer Company, Held was the designer and developer of a series of industry firsts, including the relational system called Enscribe and the next generation system upon which Tandem's "Non-Stop SQL" products were built. He rose through the ranks to become chief technology officer for the company and senior vice president of corporate strategy

After 18 years, Held left Tandem to become senior vice president of the Server Technologies Division at Oracle Corporation. After leaving Oracle, he spent a year as "CEO-in-residence" at the venture capital firm of Kleiner Perkins Caufield & Byers and then founded The Held Group, through which he works closely with early-stage ventures to accelerate growth. He is a member of the board of directors of the Tech Museum of Innovation in San Jose and serves on the Executive Council at the Fisher Center for Information Technology and Management, Walter A. Haas School of Business, at the University of California, Berkeley.

Patrick Shui Chung Wang is the chairman and CEO of Johnson Electric Holdings Ltd. and Johnson Electric Industrial Manufactory Ltd. He received his BSEE and MSEE degrees from Purdue in 1972 and joined the Johnson Electric Group in

Hong Kong. Using his design ability and management skills, Wang targeted new markets and developed new, smaller, and more efficient micromotors. Under his direction, the company became a global supplier of electric micromotors, motor systems, and components to the automotive, home appliance, power tool, personal care, business equipment, and multi-media areas. The Johnson Motors division produces 1.5 million motors per day and exports its products to 20 countries.

Wang became a director of the company in 1976, was promoted to managing director in 1984, and was elected chairman and chief executive in 1996.

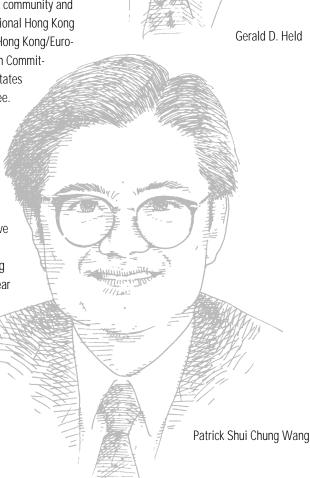
He is active in the Hong Kong community and serves on the board of the Provisional Hong Kong Science Park Company Ltd., the Hong Kong/European Union Business Cooperation Committee, and the Hong Kong United States Economic Co-operation Committee.

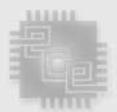
He also is involved in education as a Council Member to The Chinese University of Hong Kong and The University of Hong Kong. In 1995, he received the DHL/SCMP Hong
Kong Business Award's "Executive"

The Distinguished Engineering
Alumni awards are given each year
to honor graduates for
professional achievements and related accomplishments. The 2001 recipients were honored in a
daylong series of programs
and events at the West

Lafayette campus.

Award."





Don Scifres Awarded Honorary Doctorate in 2001

During the May 2001 commencement ceremonies, Purdue awarded the title of Doctor of Engineering *honoris causa* to **Donald R. Scifres**, co-chairman and chief strategy officer of JDS Uniphase. Scifres is a member of the National Academy of Engineering and a Fellow of both the IEEE and the Optical Society of America. He holds 133 patents, is the author of 304 technical articles, and has contributed to three books.

After completing his BS at ECE in 1968, Scifres enrolled at the University of Illinois where he completed his MS and PhD in electrical engineering. In 1972, he joined the research staff at Xerox and became manager of a 23-person opto-electronics group. He advanced to the status of Research Fellow with Xerox and worked in the electro-optic and integrated optic device field. During this time

he wrote more than 160 technical papers and received more than 40 patents, including those on structures now manufactured by five different companies. Scifres founded Spectra Diode Laboratories, Inc. (SDL) in 1983 and served as chief executive officer, president, and chairman of the board of directors until its merger with JDS Uniphase. He guided SDL through a management buyout in 1992, launched its initial public offering in 1995, and negotiated its merger with JDS in 2000.

Scifres received the Jack A. Morton Medal from IEEE in 1985, the IEEE Lasers and Electro-Optical Society (LEOS) Award for Engineering Achievement in 1994, and the IEEE Third Millennium Medal in 2000. He was awarded the OSA-SIT Edwin H. Land Medal in 1996 and received the APS George E. Pake Prize in 1997. A member of



Donald R. Scifres

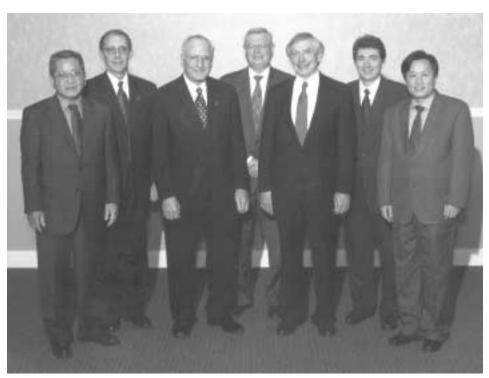
numerous professional societies, Scifres has been active as a conference and committee chair and a member of advisory and award committees. He was named a Distinguished Engineering Alumnus in 1990 and an Outstanding Electrical Engineer in 1992.

Get Involved with Undergrads through the Alumni "Bank"

If you want to be more involved with the University, especially with the students, but don't live close to the West Lafayette campus, the Alumni Bank offers you a means of becoming involved. The "Bank" is a list of alumni who are willing to hold conversations via e-mail with students who are struggling to make a decision on a major and/or a career. Using e-mail, students ask questions about various careers and the pros and cons of the alum's profession.

If interested in participating, contact **Ken Coleman** at Klcoleman@purdue.edu.

2001 Outstanding Electrical Engineers



The 2001 class of Outstanding Electrical Engineers (from left to right): Harrison Y. "Harry" Miyahira, Carl Johnson, Aelred "Al" Kurtenbach, Timothy Trick, Paul McEnroe, Reda R. Razouk, and GuoJie Li.

Ten years ago, ECE launched a new recognition program, the Outstanding Electrical Engineer Awards, to honor alumni for their professional achievements. Of more than 20,000 graduates of ECE, only 127 individuals had received the award as of 2001. At a dinner on November 15, 2001. ECE honored the most recent additions to this group. The seven prominent alumni receiving the honor were: Carl J. Johnson, chairman and CEO, II-VI Incorporated; Aelred "AI" Kurtenbach, chairman and CEO, Daktronics, Incorporated; GuoJie Li, director, National Research Center for Intelligent Computing Systems, Chinese Academy of Sciences; Paul McEnroe, retired president of Trilogy Systems Corporation; Harrison Y. "Harry" Miyahira, CEO and president, HM Electronics Incorporated; Reda R. Razouk, vice president, World Wide Process Technology Development, National Semiconductor; and Timothy Trick, professor, Electrical and Computer Engineering and director, Anderson

Laboratory for Global Education in Engineering, University of Illinois at Urbana-Champaign.

Carl J. Johnson (BS '64) is chairman and CEO of II-VI Incorporated, a company he founded in 1971. II-VI is a world leader in the manufacture of laser optics, materials, and components; military infrared optics and components; and cadmium zinc telluride x-ray/gamma ray detectors He began his career working on the development of submarine cable and satellite communication systems at Bell Telephone Laboratories and later was responsible for a number of research projects sponsored by Essex International at what is now Carnegie Mellon University. Johnson has served on the Laser and Electronics Technical Activity committee at the U.S. Department of Commerce and the Pennsylvania Ben Franklin Technology Organization.

Aelred "Al" Kurtenbach (PhD '68) is chairman and CEO of Daktronics, Incorporated, a company he founded that today is one of the world's largest suppliers of electronic scoreboards, large screen video boards, and computer-programmable displays. Kurtenbach is a former South Dakota State University professor and his continuing involvement in state education and economic issues recently resulted in his being called upon to serve as interim dean of the Engineering School at South Dakota State University. He is also a past member of the South Dakota Board of Regents and a member of the South Dakota State University Foundation Board and has twice been named South Dakota's Small Businessman of the

A member of the Chinese Academy of Engineering, GuoJie Li (PhD '85) directs the National Research Center for Intelligent Computing Systems of the Chinese Academy of Sciences. After completing his PhD at Purdue, Li did postdoctoral work at the University of Illinois before returning to Beijing. He joined the Institute of Computing Technology and later became director of the National Research Center for Intelligent Computing Systems. In 1996, he became director of the National Research Center for High Performance Computers and was the chief designer of the Dawning 1000 massively parallel processors system. In 1999, he became director of the Institute of Computing Technology of the Chinese Academy and directed Dawning-3000 400 Gflops superserver program. Li received the Chinese Academy of Sciences and National Award of Science and Technology Progress Award in 2000.

Paul McEnroe (MSE '60) is the retired president of Trilogy Systems Corporation. During a 23year career at IBM, McEnroe led and contributed technically to the team that developed the Universal Product Code and related technologies, including IBM's first intelligent terminal, custom chip, and distributed system. He was responsible for the development of "The Token Ring" Local Area Network and served as Group Director of Systems

continued on next page

Development. He left IBM to become president of Trilogy Systems Corporation, a developer of copper-polyimide multichip module technology, and negotiated a merger of that company with Digital Equipment. Now retired, McEnroe served on California's Blue Ribbon Committee on Educational Technology, is a director of the California Engineering Foundation, and is involved with activities at Cal Poly and the University of California - Santa Barbara.

Harrison Y. "Harry" Miyahira (BS '57) is CEO and president of HM Electronics Incorporated. While a student at Purdue, he worked on the engineering staff at WBAA and was in charge of maintaining the radio system for the Purdue campus police. He spent two years in the Army before joining Space Technology Laboratories, where he was awarded several patents. In 1969, he joined Soladyne International Incorporated and assumed a broad spectrum of business responsibilities that helped prepare him to launch his own business in 1971. His company, HM Electronics, developed the first wireless full-duplex intercom system for the entertainment business, and, in 1982, developed the first wireless drive-thru intercom system that revolutionized the quick-service food industry. HM Electronics also manufactures products for the security and surveillance market.

Reda R. Razouk (BS '71, MS '72, PhD '77) is vice president of World Wide Process Technology Development at National Semiconductor. He launched his career working on the characterization of thin dielectric films at Fairchild Semiconductor. In 1982, he became a project leader for the development of a process for fabricating a 256K Dynamic Random Access Memory and later managed MOS VLSI research and BiCMOS technology development for high-speed, high-density logic and memory circuits. In 1987, Razouk joined Philips Research Laboratory where he was responsible for the development of sub-micron technologies and, in 1991, was selected by National Semiconductor to establish an Analog Process Technology Development Organization. Today he is responsible for the development and



The 2001 OEE award recipients enjoyed an evening in the spotlight.

deployment into manufacturing of all new process technology capability at National. Razouk holds or co-holds eight U.S. patents, has been a technical committee member for various IEEE conferences, and has served as president of the Bay Area Chapter of the Electrochemical Society.

Timothy Trick (MS '62, PhD '66) is a professor of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign and the director of the Ander-

son Laboratory for Global Education in Engineering. He has served as head of the department of Electrical and Computer Engineering at Illinois, as director of the Coordinated Science Laboratory, and as director of the Sloan Center for Asynchronous Learning. Trick researches and publishes widely in the areas of computational methods for circuit analysis and design, integrated circuits, and analog and digital signal processing. He also



Former dean Richard J. Schwartz spoke at the OEE awards cer-

studies the application of multimedia, the World Wide Web, and asynchronous conferencing software to education. A member of the SRC Task Force on Curriculum Related Strategies and a Fellow of the IEEE and the AAAS, Trick has received the IEEE Centennial Medal, the Circuits and Systems Society Meritorious Service Award, and the group's VanValkenburg Award.

ALUMNI HONORS 2002

Greene, Jr. and Massengill named DEAs in 2002

Two ECE alumni, Frank S. Greene, Jr. and Matthew E. Massengill were among 10 graduates from the Purdue Schools of Engineering who were honored in April during the 2002 Distinguished Engineering Alumni Convocation.

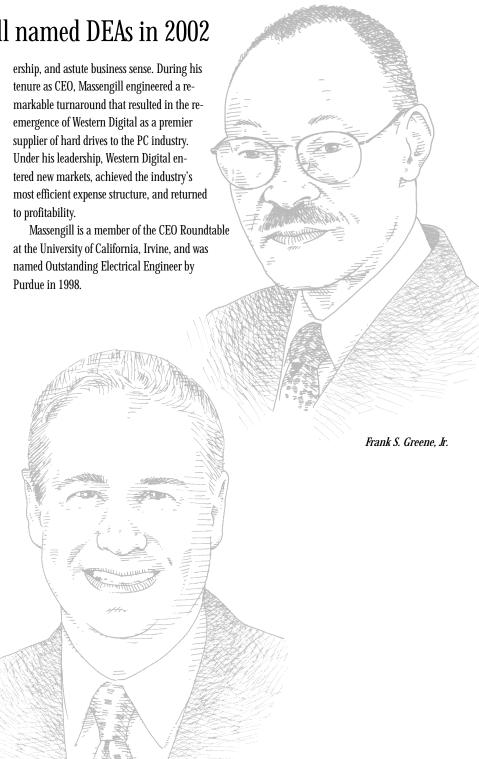
Frank. S. Greene, Jr. is the founder and general partner for New Vista Capital. He earned his MSEE from Purdue in 1962 and completed his doctorate at Santa Clara University in 1970.

Greene has excelled as a semiconductor researcher, entrepreneur, teacher, and venture capitalist. He holds the patent for the integrated circuit that made Fairchild Semiconductor a leader in semiconductors in the late 1960s. He has taught electrical engineering and computer science at five universities. He founded two software companies, including one that was recognized by *Black Enterprise* as one of the top 100 black-owned businesses. Greene is in his fourth career and meeting equal success as a partner in a venture capital firm that makes early stage investments in information technology companies owned by women and minorities.

Purdue named Greene an Outstanding Electrical Engineer in 1999. In 2001, he was named one of the "Twenty-Five Most Influential Blacks in Technology' at the Los Angeles Technology Connection and was also named to the Silicon Valley Engineering Hall of Fame.

Matthew E. Massengill is president and CEO of Western Digital Corporation, an industry pioneer and leading designer and manufacturer of hard drives. He received his BSEE from Purdue in 1983.

At every stage of his 17-year career at Western Digital, Massengill has demonstrated technical expertise, creativity, visionary lead-



Matthew E. Massengill

Michael Sears Awarded Honorary Doctorate in 2002



Michael M. Sears

During the May 2002 commencement activities, Purdue University awarded the title of Doctor of Engineering honoris causa to **Michael M. Sears**, senior vice president and chief financial officer of The Boeing Company. In this position at the world's largest aerospace company, which had 2001 revenues of \$58 billion, Sears leads the firm's financial management, investor relations, and corporate development activities. Also, as one of Boeing's highest-ranking officials, Sears is a member of the company's office of the chairman and serves as chairman of Boeing Capital Corporation, which provides financing and leasing for aerospace products and commercial equipment.

Sears began his career with McDonnell Douglas after graduating from Purdue in 1969, working for several years on the F-15 Eagle and the Advanced Tactical Fighter programs. He progressed up the ladder to become chief program engineer for advanced F/A-18 studies in 1987. He was promoted in 1990 to vice president and general manager of the F/A-18 Hornet program, which today remains the company's largest tactical aircraft program. Sears is widely credited for the successful launch of the F/A-18 Super Hornet, now the U.S. Navy's front-line strike fighter.

In April 1966, Sears was named president of Douglas Aircraft Company, the commercial aircraft division of McDonnell Douglas. When Boeing and McDonnell Douglas merged in 1997, Sears assumed leadership of the company's \$13 billion military aircraft and missile business, and ultimately was promoted to corporate senior vice president and president of Boeing Military Aircraft and Missile Systems. In this position, he also supervised activities at the Boeing's Phantom Works research and development unit until it became a separate business in 1999. Sears was named to his current position of chief financial officer in May 2000 and was made a member of the company's office of the chairman in March 2002.

Sears received his BSEE degree from Purdue in January 1969 and his MSEE in August of the same year. Sears also earned a MS in Engineering Management from the University of Missouri, Rolla. A Fellow of the American Institute of Aeronautics and Astronautics, Sears has received the Outstanding Electrical Engineer Award (1997) and the Distinguished Engineering Alumnus Award (1999) from Purdue, as well as the Alumni Achievement Award (1997) from the University of Missouri, Rolla. In 2001, Sears received an Honorary Doctor of Science from the University of Missouri, St. Louis. Sears has received numerous other awards, including the Fleet Admiral Chester A. Nimitz Award, the Robert J. Collier Award (on behalf of the F/A-18E/F program), and the Hap Arnold Award for Excellence in Aeronautical Program Management. Over the years, Sears has served on the board of directors for organizations ranging from the St. Louis Zoo, the Naval Aviation Museum Foundation, the Private Sector Council, and World Business Chicago, a non-profit economic development organization. Sears serves as a national director of the March of Dimes, which awarded he and his wife, Debbie, the Citizens of the Year Award in 2001. Sears has two sons, and Mathew, the eldest, graduated from Purdue in May.



Students in the EE building have fewer empty walls to look at thanks to collaboration between the University Visual Arts Committee and ECE. The Visual Arts Committee sponsors an annual lending collection poster exchange each fall. Faculty and staff members borrow a poster from the 2,356 posters in the collection. The artwork is loaned for a period of 12 to 24 months, after which time it is returned and may be exchanged for different pieces. Art posters also are installed in various locations around campus, including foyers, hallways, and laboratories.

Posters by M.C. Escher have been installed near the EE Instrument Room, and posters of Claude Monet's paintings have been installed or the second floor of the building.

Barrett Robinson, the coordinator of undergraduate laboratories for ECE, says he chose Escher's artwork because of the elements of en gineering in nearly every piece. "Almost every picture presents a puzzle, and engineers love puzzles," he says. A Dutch artist, Escher is famous for his strange studies of perspective and spatial perception, and for repeating and interconnecting geometric patterns.

Joanne Lax, interpersonal communications specialist for ECE, chose French Impressionist Monet because no other Impressionist's work hangs in the EE or MSEE buildings. "We like to expose students who come through here to different artists, periods, and styles," she says.

Marian Delp, training and documentation specialist, coordinated the poster exchange throughout the EE and MSEE buildings.

alumni notes

Note: To send corrections or to update us on your achievements and career successes, complete and return the inserted postage-paid card.

Former Student

Wayne E. Hill is enjoying the retired life in Mission, TX.

James B. Wilson and his wife, Meegan, reside in Gainesville, FL.

1931

Bert C. Johnson (BSEE '31) of Greenwood, IN, retired from Indiana Bell in 1974 and has been affiliated with the Boy Scouts of America for over 55 years as a scout and a leader. He is a commissioner with the Crossroads of America Council.

C. Orville Schupp (BSEE '31) is the retired president of Schemley Distillers, Inc. His lifetime achievements include being in Who's-Who and serving as president of the Frankfort Country Club.

1933

Retired and living in Richland, WA, *Lawrence R. Riggs (BSEE '33)* owns L.R. Riggs Service and provides automobile service as a hobby.

1937

David F. Williams (BSEE '37), a resident of Encinitas, CA, retired from GTE Corporation in 1975 and has been enjoying his free time and sailing on cruise ships with his wife.

1939

Gordon S. Johnson (BSEE '39) of

Dundee, FL, is retired and relaxes at home. He won gold medals in the 1999 Senior Olympics. Johnson is a Fellow of IEEE and was the editor of Powerline Magazine from 1986-1993 and technical editor of Powerline Magazine from 1994-1999.

1940

Paul B. Sebring (BSEE '40) retired from MIT after 28 years; the final 16 years as director of MIT's Haystack (radio/radar) Observatory in Westford, MA. Subsequent work has included consulting, managing the Harvard Observatory's station for three years, and helping to build the National Radio Astronomy Observatory's new Very Long Baseline Array (VLBA). He and his wife, Irene, enjoy life in Charlottesville, VA; often hosting family visits from their six children.

1941

David D. Kennedy (RSEE '41) retired from the U.S. Air Force in 1978 and AT&T in 1981. He and his wife, Sonja, celebrated their 55th wedding anniversary in January 2000. They reside in King, N.C.

1942

After working for GE for 30 years, William E. Bright (BSEE '42) of Coco, FL, retired in 1971 and has been working as volunteer ever since. He volunteers at the Martin Anderson Senior Center, Inc.

Walter R. Kettenring (BSEE '42) is retired from General Electric and makes his home in Bloomington, IL.

Merle E. Ward (BSEE '42) was registered as a professional engineer in Ohio in 1960 and retired from Honeywell, Inc. in 1985. He lives in Scottsdale, AZ.

1943

Frank J. Clark (BSEE '43, MSEE '48)

started his career teaching at Purdue in the Electrical Engineering department in 1946. He went on to teach at the University of Southern California. He entered the industry in 1950 with Hughes Aircraft where he was a systems engineer. From there he worked for Lockheed Martin and finally with Northrop Advanced Systems. He retired from Northrop in 1995 and resides in San Gabriel, CA.

Stanford B. Wolf (BSEE '43) is enjoying the retired life in Farmington Hills, MI.

1944

William G. Eagle (BSEF '44) of Massapequia, NY, received his MBA at Columbia University in 1949. He is retired

Massapequia, NY, received his MBA at Columbia University in 1949. He is retired and still keeps up with Purdue activities.

Robert E. Davis (BSEE '44, MS' 49) retired in 1987. From 1949 to 1987 he was a VP engineer at Pennsylvania Electronics Technology, a manager at WestingHouse Electric Research Labs, and a member and chair of the board for the Al-Anon Family Group.

1947

After 35 years as a senior electrical engineer at Goodyear Tire and Rubber Co., *Harley D. Crom (BSEE '47)* retired in 1986 and enjoys retirement in Morton, OH.

Robert R. Wendt (BSEE '47) is enjoying retirement and lives in Whitmore Lake, MI.

In April 1998, *Warren A. Wickes (BSEE '47)* and his wife moved to Oberlin Retirement Community where he is chairman of the Energy Conservation Committee and the Play Reading Committee.

1948

A ten-year member of S.C.O.R.E, *Joseph W. Elrod (BSEE '48)* is retired and living in Mansfield, OH.

A. David Lantz, Jr. (BSEE '48) is retired and lives in Green Valley, AZ.

A life member of Purdue Alumni Association, *O.J. Meyer (BSEE '48)* of Fort Wayne, IN, is retired.

1949

Jack Almcrantz (BSEE '49) of MI retired from Motorola in 1989 as the vice president and area manager of transportation sales. He was instrumental in the development of two-way radio communication systems for the nation's railroads. He enjoys relaxing at home on Paw Paw Lake.

Captain *R.J. Anderson (BSEE '49)* was married in April 1999 to a woman who enjoys skiing and sailing as much as he does. He is retired from the U.S. Navy and is enjoying retirement in Freeport, ME.

John M. Caylor, Jr. (BSEE '49) is president of the Purdue Club of Western NC. He retired in 1990 and resides in Hendersonville, NC.

After 40 years as a senior consultant, **Raymond L Custard (BSEE '49)** of Beaver, PA, retired in January 1989 and spends his time sailing and participating in veteran organizations.

Paul Gmeiner (BSEE '49) of Rhinebeck, NY, is retired.

Howard B. Irvin (PhD '49) is retired and resides in Bartlesville, OK.

Retired in Winchester, VA, *Robert O Noyer (BSEE '49)* flies his Ultraflight, writes for several magazines and the local paper, and makes stained glass.

Jay T. Patchell (BSEE '49) and his wife of 57 years reside in Santa Barbara, CA, where he owns his business, Patchell's Electronic Music Services. He has been a member of IEEE for 50 years and a member of 100F for 58 years.

1950

Paul A. Breidenbach (BSEE '50) of Bedford, IN, is retired from GM Powertrain.

Kenneth W. Buxton (BSEE '50) is retired from Avon Cosmetics and is on the board of trustees for the Williamsburg Symphony. He is principal bassist for the York River Orchestra and makes his home in Williamsburg, VA.

Leonard R. Czenkusch (BSEE '50) retired in 1988 from his job at the Experimental Test Department, and is relaxing at home in Speedway, IN. He is a member of AIEE.

Marlin A. Ford (BSEE '50) of Indianapolis, IN, has retired from Indianapolis Power and Light Company.

Donald K. Mosher, P.E. (BSEEE '50) of Glassboro, NJ, retired in 1985.

Warren F. Opitz (BSEE '50, MSComSci '68) retired from Lockheed Martin as director of production and is very active within his community. He is president of the Homeowner's Association, a board member for Habitat for Humanity, a registered professional engineer, and the recipient of the Department of Army's "Outstanding Civilian" Service Medal. He resides in VA with his wife, three children, and six grandchildren

Stuart P. Weckerly (BSEE '50) of

Dearborn, MI, retired from Ford Motor Co. after 29 years and was honored by The National Flying Aces Club for the achievement of 200 victories.

Robert A. Grimm (MS '51) resides in Los Altos, CA.

Robert H. Rice (BSEE '51) of Mequon, WI, retired as corporate engineer at Miller Brewing Company.

1952

Robert C. Packer (BSEE '52), a resident of San Diego, CA, is retired and enjoying his life with his wife and new granddaughter. In his spare time, he manages his rental properties. He attended his WWII reunion in November 2000.

1953

Paul E. Catron (BSEE '53) is enjoying retirement in Peru, IN.

William "Bill" Schmauss (BSEE '53) is a resident of Sneads Ferry, NC, and is retired from GPU Nuclear as a consulting engineer.

1954

Richard E. Watters (BSEE '54) of

Thousand Oaks, CA, retired in 1993 as a computer engineer at the Port Hueneme Division of the Naval Surface Warfare Center. He has also worked with Raytheon, Atomic International and Rocketdyne Divisions of North American Aviation, Litton Industries, Douglas Aircraft, and the Purdue University Rocket Research Laboratory. He and his wife are greatly enjoying their free time.

1955

Robert Cranor (BSEE '55) of Panorama City, CA, was voted into the Tennis Umpires Hall of Fame at the U.S. Tennis Open in August 1999. He is retired.

Joseph P. Martino (MSEE '55) has completed two semesters as visiting professor at the Industrial Engineering Department of Marmara University in Istanbul, Turkey. He is retired, lives in Sidney, OH, and was appointed to the board of governors, Engineers Club of Dayton.

After retiring from N.A.S.A. Goddard Space Flight Center in 1994, *H. Paul Scherer (BSEE '55, MSEE '56)* of Arvada, CO, works in the astronautics department of Lockheed Martin as a staff engineer.

1956

NC resident **W.T. Cochran (BSEE '56)** is retired from ITT, AT&T, and TranSwitch, Inc. He has a patent in navigation and is hoping for one in digital scrambling and on a lawnmower. Cochran received his MSEE in 1959 from NYU.

Don Hamady (BSEE '56) of Hobart, IN, is retired from Fluor-Daniel, Chicago Division

After 40 years as president of the International Division of Tecumseh Products, Co., *Thomas Jacoby (BSEE '56)* has retired. He is a resident of Tecumseh, MI, and a board member. He is also a member of the City of Tecumseh French Connection Advisory and Wampler Lake Property Owners Association.

After 28 years in the Air Force, Colonel **Daniel H. McGrath (BSEE '56)** is retired and, along with his wife, resides in Falls Church, VA, where he serves on the National Aviation Club and the National Airmen's Museum Board.

Maurice "Moe" J. Whittemore, Jr. (BSEE '56) is senior project engineer at Hurco Machine Tools and resides in New Palestine, IN.

1957

After retiring in 1996, *Davey L. Haycraft* (*BSEE '57)* lives a quiet life in Knoxville, TN.

Reginald I. Hedrick (BSEE '57) retired in 1995 from Rockwell Automation as director of operations. He resides in Dublin, GA, where he has served on the board of directors for C&S Bank, the Dublin Chamber of Commerce, and the Heart of Georgia Technical Institute. Hedrick is a registered professional engineer, a rotarian, and enjoys himself traveling in his recreational vehicle.

John F. Hemdal (BSEE '57, MSEE '59, PhD '64) retired from his full-time faculty position, but still teaches part-time. He completed a stint as chairman of the Toledo Section of IEEE, but is still a board member of that group and also of the Wot Foundation.

Garl M. Satterthwaite (BSEE '57) makes his home in Moorpark, CA, where he enjoys retirement, teaching genealogy, and volunteering.

1958

James R. Burt (BSEE '58) enjoys retirement in Apache Junction, AZ, and is building a new house on Superstition Mountain, which will have the latest in electrical and electronic technology. He retired from Westinghouse Electric Corporation as senior project engineer.

John Hannabach (BSEE '58) is president of Hancon and does part-time career consulting for Right Management Consultants. He retired from Georgia Tech as director of Career Services in July 1999 and enjoys golfing and fishing. He resides in Atlanta, GA

Having retired from Science Applications International Corporation, *Robert Yost* (*BSEE '58*) of Vienna, VA, spends his time with his children and grandchildren, playing golf, and traveling with his wife.

After 36 years of testing and evaluating precision landing systems at the FAA Technical Center at the Atlantic City Airport, *Edmund A. Zyzys (BSEE '58)* retired in 1994. He and his wife reside in Somers Point, NJ, and frequently make trips to AZ to visit their children.

1959

Fred J Dietrich (MSEE '59) is enjoying a microwave career that has spanned 42 years, the last 18 of which have been spent as a consultant developing antennas.

A resident of Ann Arbor, MI, *David R. Matthews (BSEE '59)* is semi-retired. He is the president of Professional Management Solutions, L.L.C. Matthews has made many significant contributions, such as designing the first laser for use on the human eye at Detroit Sinai Hospital and leading the industry in Carbon Dioxide laser development for two years. He is a three-year Civitan member and a church and Rotary Club member. He published a chapter in a book and many articles in numerous technical journals on Circuits, Lasers, Telemetry, and Wet Well controls.

Carl A. Paccio (BSEE '59) is purchasing manager for Sheltered Workshop, Incorporated, and resides in Endwell, NY, where he is a member of the National Association of Purchasing Management and is the golfing chairman of two tournaments.

1960

After 36 years with Litton Systems and building the Cruise Missile Guidance Systems, *Bertus L. Berry, Jr. (BSEE '60)* is enjoying retirement in his home in Acton, CA.

Frank Hemersbach (BSEE '60) of Cutler, IN, retired from Daimler Chrysler after 36.5 years at the Kokomo Transmission Plant. He spent 33 years in various management positions, the last as supervisor in the Plant Engineering department.

1961

Michael Bifano (MSE '61) is retired.

A resident of Walnut Creek, CA, **John Gulbenkian (MSEE '61)** is a senior engineer for Varian, Inc. In September 1991 he was one of two instructors honored at the University of California-Berkeley Extension Centennial Celebration. In June 2000 he received the IEEE 3rd Millennium Award.

Samuel L Ralston, Jr. (BSEE '61), a resident of Madison, IN, retired from PPG Industries as a staff electrical engineer.

1962

After 38 years with companies such as RCA, GE, and Lockheed Martin, **Paul G. Goodwin (RSEE '62)** is enjoying retirement in University Park, FL.

1963

David M Baldwin (BSEE '63) Battle Creek, MI, is president/CEO of Douglas Autotech Corporation.

Kuo An Chen (BSEE '63, MSEE '64) resides in Leesburg, FL.

1964

Joseph P. Odenwalder (MSEE '64) resides in Rancho Santa Fe, CA.

Kenneth A. Shaw (BSEE '64) is a test engineering manager at Hewlett-Packard in Corvallis, OR. He is a senior member of IEEE and earned a MSEE '69 and PhDEE '72 from Arizona State University.

Jon C. Taenzer (BSEE '64) of Los Altos, CA, is vice president of research and chief scientist for Sybersay Communications, Inc. He recently received his 24th U.S. patent.

Howard S. "BUD" Babbitt, III (BSEE '65, MSEE '66, PhD '71) of Concord, MA, is director of engineering and operations for Intel Corporation.

Richard L. Scholl (BSEE '65, MSEE '66) of Menlo Park, CA, retired from Pacific Bell last year and serves as they're cost of service expert witness in hearings in regulatory proceedings.

Michael J. Wojdyla (BSEE '65) of Sierra Vista, AZ, retired from the U.S. Navy in 1982 as a Rank-05 Commander. In 1999, he also retired as program manager of Surveillance Systems for Sanders, a Lockheed Martin Company.

1966

Lynn Freeman (BSEE '66) resides in LeRoy, NY, and is president of Schlegel Systems.

1968

John A. Chapman (BSEE '68) resides in Foster City, CA, and is retired.

Henry L. Davis, Sr. (BSEE '68) lives in LeaQue, TX.

Jerry N. Layl (BSEE '68) resides in Del Mar, CA, and is West Coast area manager for Delphinus Engineering, Inc.

After 31 years with Ameritech, **Richard Mathes (BSEE '68)** is retired and resides in New Palestine, IN.

1969

Charles Batteau (BSEE '69) of Glen Allen, VA, is manager of LAN & Desktop Support in the Information Processing department of Verizon Communications.

Jetry R. Blevins (MSEE '69) is engineering manager, worldwide, for the Actuator and Sensor division of Eaton Corporation. He resides in Bloomfield Hills, MI.

Donald Chafetz (MSEE '69) is resides in El Cajon, CA.

Allyn B. Conwell (Former student '69) is the owner of his business, Flow Process, in Houston 'TX

Lloyd "Mike" Hardgrave (MSEE '69) is director, UK Civil Programmes for Lockheed Martin. He resides in Wargrave, Berkshire in the United Kingdom.

1970

Dan E. Monnier (BSEE '70, MSEE '76), a resident of Arlington Heights, IL, is senior electrical engineer in the New Product Engineering Division for Zebra Technologies Corporation. He is president and scholarship chairman of The Illinois Society of Professional Engineers.

1971

David Graves (BSEE '71) of Indianapolis, IN, is a developer of software for Gas Turbine Research and Development and a senior staff member of Graphical User Interface Design Group for Gas Turbine Monitor and Control Systems. He is senior engineer at Rolls-Royce Allison.

Indianapolis, IN, resident **Bennett M Katz (BSCEE '71, MSEE '73)** is a development supervisor for Praxair Surface Technologies.

F. David Magee (BSEE '71) is an electrical engineering consultant for the Flat Rolled Products Engineering Department at Alcoa in Bettendorf, IA.

Leon Tarr (BSEE '71) of El Segundo, CA, is principal engineer in the Electro-Optical Systems Engineering Center of Raytheon Systems Company.

1972

C. Keith Essency (RSEE '72) of Austin, TX, is VP and GM in the Crystal Audio Division of Cirrus Logic, Inc. Previously, he held Operations Management positions in DSP and Video and he created the Digital Audio market in the early 90s at Motorola.

1973

Charles Alajajian (BSEE '74) resides in Williston, VT, where he is a visiting assistant professor in the Department of Electrical and Computer Engineering at the University of Vermont.

Gregory D. Hill (BSEE '73) was awarded two U.S. patents, one for an optical corrugated sheet counter, and the other for an optical counting system for stacked corrugated sheets. He is president of Control Engineering Corporation and makes his home in Indianapolis, IN.

A resident of Olathe, KS, *Dennis S. Howell (MS '93)* is chief technology officer at Dynamic Voice.

Phil Munro (PhD '73) resides in Youngstown, OH, where he is a professor of electrical engineering at Youngstown State University.

1975

Carl C. Cowen (MSEE '75, PhD '76) is retired and living in Indianapolis, IN.

David Dries (BSEE '77, MSE '77), a resident of Woodbury, MN, is a professor in the Department of Surgery at the University of Minnesota. He investigates lung injury that is associated with mechanical ventilation and blunt and burn trauma.

1976

A resident of Sunnyvale, CA, *Mark Bartholomew (BSEE '76)* is director of hardware engineering at Adpet Technology, Inc. He is responsible for the design of the electronic robot control and robot vision guidance systems.

Robert Deutsch (BSEE '76) of Gaithersburg, MD, is senior director for the Broadband Carrier Networks department with Hughes Network Systems.

1977

Jack D. Hysong (BSEE '77) retired from Vitro Corp and resides in the desert.

1979

For the past 20 years, **David A. Baier** (**BSEE '79)** from Centerburg, OH, has worked in Technical Sales for the Arthur Baier Company, of which he is a partner.

Martin B. Mark (BSEE '79) retired from the U.S. Air Force as a lieutenant colonel in August 2000 and began work at SAIC as senior scientist. Mark provides technical support to DARPA program managers, and resides in Silver Spring, MD.

Chris Tapas (BSEE '79) is a registered professional engineer and is a senior project manager/estimator for Maron Electric Company. He resides in Prospect Heights, IL.

1980

A resident of Simpsonville, SC, **Michelle Stadler Gray (BSEE '80)** is a senior electrical engineer in the Chemicals and Life Science Department of Fluor Daniel.

Kevin E. McClain (BSEE '80) of Indianapolis, IN, is a senior engineer with Thomson Consumer Electronics.

1981

Thomas L. Ether (RSEE '81) is principal engineer at IBM in the Consumer Electronics National Consulting Practice Division in Boca Raton, FL.

Fayetteville, GA, resident *Mark E. Haag* (*RSEE '81*) is manager of systems operations for Delta Technology.

Patty Kruse (BSEE '81) of Overland Park, KS, is a manager of production in IT Systems in the Business and General Aviation Division of Allied Signal Inc.

David W. Osburn (BSEE '81) of Richmond, IN, is general manager, CEO, of Richmond Power and Light. He serves on the Board of Directors-EPRI and the Board of Commissioners-Indiana Municipal Power Agency. He is chair of the APPA Engineering and Operations Section. He is a board member for United Way and the Chamber of Commerce.

Ralph J. Power (BSEE '81) of Indianapolis, IN, is vice president, director of production at Gibralmer Design and also an electrical engineer for Purdue's CERIAS Project.

1982

William "Bill" F. Kraus (BSEE '82) resides in Palmer Lake, CO, with his wife and two children where he is a FRAM design manager for Ramtron International Corporation. He has eight U.S. patents in 1c circuit design.

Lori Bergmann Marquez (BSEE '82) resides in Golden, CO, and is president of Marquez Environmental Services, Inc.

Francis J. Weil (BSEF '82, MSEE'84, PhD '88) of Arlington Heights, IL, is a principal staff engineer at Motorola Labs.

1983

Brian Harris (BSEE '83) of Phoenix, AZ, is president of Essential Components.

James F. Huffaker (BSEE '83) is manager of Avionics Systems with The Boeing Company. Huffaker is a private pilot, coach of youth baseball and soccer teams, president of the North Bothell Little League, and Boeing associate technical Fellow. He resides in Bothell, WA.

Mark Neargarder (BSEE '83) of Dayton, OH, is senior manager at KPMG.

A resident of North Oaks, MN, *Richard M Voyles (BSEE '83)* is an assistant professor in Computer Science at the University of Minnesota. He serves on the Program Committee of the IEEE Robotics and Automaton Conference and has been elected senior member of the IEEE.

1984

Robert A. Lehman (BSEE '84) of Carmel, IN, is associate information consultant at Eli Lilly and Company.

William R. Marbaker (BSEE '84) resides in Colorado Springs, CO.

A resident of Providence, RI, *Scott A Tillotson (BSEE '84)* is vice president of business development at Spectra Science Corporation and is in the IBM Hundred Percent Club.

Jeffrey X. Yin (BSEE '84) of Milwaukee, WI, relocated from Shanghai to Beijing to head up Rockwell Automation Marketing and Industry Sales Activities for China.

1985

John N. Allen (MSEE '85) is project manager in the Cable Communications Division of Lucent Technologies.

Shaun Shangi Ho (BSEE '85), a resident of Troy, OH, manages a wholly-owned manufacturing operation in China.

While completing his MSEE in Systems and Information Processing at Florida Institute of Technology, *Norman Lay Price* (*ISSEE '85*) of Orlando, FL, is a software task lead at Lockheed Martin Missiles and Fire Control. He was in the Lockheed Martin Strategic Talent Pool, leads the RADAR/signal processing algorithm development and is a RADAR systems engineer on MMW(35-94 GHz) RADAR seekers.

Roger D. Reiss (BSCEE '85) is a resident of Long Beach, CA.

W. Keith Skinner (BSEE '85) of

Richfield, MN, is a network consultant at Born Information Services. For three years, he taught TCP/IP classes, which he developed, for a local community technical college.

1986

Goshen, KY, resident Brian Glenn (**BSEE '86)** is director of product development at Radio Sound, Inc.

Hiromu Inoue (MSEE '86) resides in Yokohama, Japan.

Sylvia C. Liles (BSEE '86) is project manager at Premier Solutions, Inc. and resides in Indianapolis, IN.

A resident of Freehold, NJ, *Margaret J. Lyons (BSCEE '86)* is the director in the East Region of RCC Consultants, Inc.

David Stocker (BSEE '86) of Roanoke, VA, is a technology leader at General Electric, Toshiba Automation Systems.

R. Brian Troyer (BSEE '86) resides in Palmetto, FL.

1987

Austin, TX, resident *Barry Boes (BSEE '87)* is the Bluetooth products manager in the Wireless Communications Division for Motorola, Inc.

Kurt I. Hedinger (BSCEE '89) of Jasper, IN, is a CAD/CAM engineering and document control manager with Kimball Electronics Group. He is founding member and treasurer of the Purdue Club of Dubois County Area.

John Justus (BSEE '87) is an engineering manager at Bay-Tec Engineering, a control systems integration company in the San Francisco Bay Area. Previously, he worked 13 years for Exxon. He resides in Martinez, CA.

Thomas R. Mathews (BSEE '87, MSEE '94) of Indianapolis, IN, is a staff field applications engineer at National Semi-Conductor.

Scott V. Pufahl (BSEE '87), executive VP of manufacturing for Heller Industries, resides in Florham Park, NJ. He married Denise Richardson on December 16, 2000. He is a board member of the Lake Mohawk Golf Club.

Lea Ann Reitzig (BSEE '87) is an account manager in the Information Technologies department at Qwest. The Software Engineering Institute (SEI) certified her as lead assessor in the Capability Maturity Model (CMM). She resides in Denver, CO.

Michael "Mad Dog" Sanie (BSCEE '87, MSEE '88) is the director of marketing and business development for Numerical Technologies. He and his wife were blessed with a baby girl named Victoria in January 1999.

1988

Anderson, IN, resident *Abid Din (BSEE '88)* is an instrumentation lab supervisor at Delphi Automotive Systems. He joined IEEE and received his MBA from Ball State University.

Brian Dipert (BSEE '88) of Sacramento, CA, is a technical editor at EDN Magazine.

A senior engineer in the T&D Planning Department of Cinergy, **James F. Doell** (**BSEE '88**) lives in Danville, IN.

Gavin Furtado (BSEE '88, MSIE '91) is a manager at Ernst and Young LLP in Chicago, IL.

Robert Ward Getty (BSEE '88) resides in Ann Arbor, MI.

Michael A. Pitzer (BSEE '88) resides in Fort Wayne, IN.

Darrel W. Randall (BSEE '88) lives in Danville, IN.

C. Matthew Witte (BSEE '88) is director of information technologies for Silgan Containers Manufacturing Corporation. He is a resident of Oconomowoc, WI.

Yau-Mun Yip (BSEF '88, MSEF '89) is the Asia Pacific market development manager for Agilent Technologies based in Hong Kong. He has focused on Market Wireless Communications Testors since early 2000. Yip resides in Singapore.

1989

James Chao (BSCEE '89, MSEE '91, MBA '99) is marketing director in the Switching Solutions Division of Lucent Technologies and resides in Naperville, IL.

Boston, MA, resident *Daniel D. Friel* (*BSEE '89*) is director of research and development at Power Smart, Inc.

Jasper, IN, resident *Kurt L. Hedinger* (*BSCEE '89*) is a CAD/CAM engineering and document control manager for Kimball Electronics Group. He leads global teams in Indiana, California, Mexico, Thailand, and Poland. He is also founding member and treasurer of the Purdue Club of Dubois County Area.

Victor T. Hou (MSEE '89) is the chief system architect for Pacific Broadband Communications in San Jose, CA.

William Samuel Luck, Jr. (MSEE '89) is an electrical engineer with the NASA Langley Research Center. He works for the Electro-Optics and Controls Branch and resides in Newport News, VA.

The director of engineering in the Universe Engineering Department of Ardent Software, Inc., *David Meeks (BSCEE '89)* lives in Ashland, MA.

Susan V. Rutter (BSEE '89) of Columbus, OH, is a staff engineer in the Honda Engineering Division of North America.

David J. Varnes (BSEE '89) of Chesapeake, VA, was awarded a MS in Aeronautical Engineering from the Naval Post Graduate School in September 1999. As lieutenant commander in the U.S. Navy, he works in Helicopter Combat Support Squadron Eight.

Masoud Vaziri (BSEE '89, MSEE '91, PhD '94) lives in Boca Raton, FL, where he is manager in the Optical Transport and Technology Division of Siemens Optical Networks.

David Ward (BSCEE '89) is president of SenQuest Incorporated and resides in Colorado Springs, CO.

I. Douglas Wells (BSEE '89) received his MS from the school of Management in 1991. He is a lithography commodity manager at Intel Corporation and is pursuing a law degree at Lewis and Clark College. Wells enjoys spending time with his wife, kids, and family in Portland, OR.

1990

Dave Cummings (BSCEE '90) of Kansas City, MO, is CEO at Tradebot Systems.

Christopher M. Lange (BSEE '90) resides in New Hope, MN, where he is a design engineer at Honeywell, Inc.

Christopher L. Lewis (MSEE '90, PhD'**94)** is employed with Sandia National Labs and is a resident of Tijeras, NM.

Scott A Nixon (BSEE '91, BSCmpE '92) lives in Phoenix, AZ.

James "Jim" Parsons (BSCEE '91) resides in Kokomo, IN, where he is president of Parsons Mortgage Corp. He is a certified residential mortgage specialist, president of the board of directors for the Berkley Homeowners Association, and member of both the Kokomo Chamber of Commerce and the Indiana Association of Mortgage Brokers.

Mark Walker (BSEE '91) is an engineering specialist in the Computer Systems Division for The Aerospace Corporation. He lives in Venice, CA.

Michelle (Belusar) Zoncick (BSEE '91) of Santa Clara, CA, is director of marketing at Conexant Systems.

1992

L Allen Arnett (BSEE '92) of Atlanta, GA, works at Pricewaterhouse Coopers LLP. He recently returned from a one-year assignment in Kazakstan.

After graduating from Purdue, *Mark Bishop (BSEE '92)* obtained his MBA with honors from the University of Florida in May 1997. He is a resident of Chestnut Hill, MA, and has been promoted to vice president of sales and marketing at Graphix Incorporation.

Andrew Grey (BSCEE '92) of Thousand Oaks, CA, is a lieutenant of the Submarine Officer Advanced Course in the U.S. Navy. He earned his MSEE at Stanford

After nine years of service with General Motors, Powertrain Division, *Kenny Grimes* (*MSE '92*) is director of a high school-aged program at Spring Hill Camp. Grimes is a program team member.

After graduating from Purdue, *Scott Johnson (BSEE '92)* of Lewisville, TX, earned a MSCSE from Michigan in '94. His latest product "Fly!," is a flight simulator for personal computers and is in stores. "Fly II" was out by Christmas 2000.

Timothy K. Marker (BSEE '92) of Fort Wayne, IN, is engineering manager at GE Industrial Systems.

Jim Nall (BSEE '92) of Marion, IN, is a network design engineer for Verizon Communications.

John G. Rauch (BSEE '92) moved to Chicago, IL, where he works as a patent attorney for Brinks Hofer Gilson and Lione.

Robert G. Soderholm (BSEE '92) makes his home in Virginia Beach, VA.

Angus Tin (BSEE '92) resides in Shibuya-ku, Tokyo, Japan.

1993

Sanjiv Bavishi (MSEE '93) lives in Malden, MA, and is a senior software engineer at Barry Controls.

Yi-Feng James Chen (BSEE '93, MSE '95) of Irvine, CA, is a senior project manager II at Quantum I ATL Products

David L. Fowler (BSEE '93) of Noblesville, IN, is a senior manufacturing engineer at Delphi Energy and Engine Management Systems. He spends his evenings trying to keep up with his 2-year-old son. He also participated in his church's annual Passion Play, which is held for 4 consecutive nights at Noblesville High School.

Andrew D. Griffith (BSCEE '93) resides in Naperville, IL.

Kathryn Isaksen (BSEE '93, MSEE '95) resides in Gurnee, IL.

A resident of Atlanta, GA, *David Jansen* (*BSCEE '93*) is a software engineer at the National Engineering Technology Corporation.

Cory Kihlstrom (BSEE '93) of Carmel, IN, works for America Trans Air as a systems engineer.

John Rouse (BSCEE '93) of Columbus, OH, is a member of the Technical Staff at Lucent Technology.

Sajjan Sharma (RSEE '93) is a minister in Somersville, MA.

Naveed Qazi (MSEE '93) of San Diego, CA, is a staff engineer at Qualcomm Inc.

1994

A resident of Trenton, MI, **Joseph A. Cesarz, Jr. (BSEE '94)** is area manager trainee at Daimler/Chrysler Corp.

John G. Kuschewski (PhD '94) resides in Wheaton, IL, and is MIS manager at AMETEK NCC and PANALARM.

Kevin R. McKeown (BSCEE '94) lives in Austin, TX, where he is a consulting engineer at Motive Communications.

Patrick Mooney (BSEE '94) is a resident of Austin, TX.

Shirielle D. Williams (BS) of Arlington Heights, IL, was named an officer in the RPS Systems Division of Worldwide Operations and Technology at The Northern Trust Company.

1995

Righter E. Kunkel (BSCmpE '95) is a network security engineer for Cyber Guard Corporation in Fort Lauderdale, FL.

Michael R. LaGue (BSEE '95) of Indianapolis, IN, is an RF design engineer at BellSouth Cellular Corporation.

Soomee Lee (MSEE '95) lives in Irvine, CA, where he is a law student at UCLA.

John A. Samis (BSEE '95) is director of communications at Teng and Associates, Incorporation in Chicago, IL.

Philip S. Valent (MSE '95) is a physician and practices in Pembroke Pines, FL.

Biao Xu (MSEE '95) resides in Itasca, IL.

1996

Sharon Beall (BSCEE '96) of Rancho Santa Margarita, CA, received an MBA from Saint Mary's College of California in June

Hon Wai Chow (MSEE '96) resides in Beaverton, OR, and is a test/product engineer for Intel.

David Chevalier (MSEE '96) resides in Muskego, WI.

Jennifer Dray (BSEE '96) of Mukilteo, WA, is a system engineer in the Air Transport Flight Control Department of Rockwell-Collins. She also works on the autopilot for the 737NG Boeing airplane.

A resident of Columbus, IN, **Jason Dukes** (**BSEE '96)** is a senior engineer for Cummins Engine Company.

Geoffrey S. Thompson (BSEE '96) of San Francisco, CA, is a systems engineer for Parker Hannifin. He is head programmer for the U.S. Post Office's DBCS Mail Sorter Robot, which is Parker Hannifin's biggest single contract ever.

Detroit, MI, resident *Nikia Williams* (*BSEE '96*) works for Ford Motor Company as a Multimedia Applications Engineer in the RVT/Electrical Electronic Systems Engineering department.

1997

Scott A. Baker (BSEE 97) resides in Carpentersville, IL.

Kevin Iverson (BSEE '97) of Chicago, IL, is a senior software engineer with Diamond Technology Partners.

Kyle E. Kingery (BSCmpE '97) resides in Round Lake Beach, IL.

S. Jordan Kisner (BSEE '97) has moved to West Lafayette, IN.

Harshad P. Sardesai (PhD '97) of Elkridge, MD, is the lead engineer in the Lightwave Systems Department of Ciena Corporation.

Ilya Shmulevich (PhD '97) resides in Tampere, Finland where he is a researcher/coordinator in the Tampere International Center for Signal Processing at Tampere University of Technology.

John D. Spivy (BSEE '97, MSECE 00) of Lafayette, IN, is a software engineer at SEP Inc.

David Suess (BSEE '97) is employed with NLX Corporation as a software engineer and resides in Sterling, VA.

continued on next page

In Memoriam

Robert E. Dungan (Former student) of Kokomo, IN.

Arthur W. Schwenk (Former student '33).

Burton Kuck (BSEE '43) of Escondido, CA.

Edmund Kuleck (BSEE '48) of Cranford, NJ.

Ben Olsen, Jr. (BSEE '38) of Indianapolis, IN.

Charles H. Rockwood (PhD '53).

Albert W. Yovanovich (BSEE '49) of Portage, IN.

Timothy A. Aliff (BSEE '98) is a principal engineer for Main, Inc. and makes his home in Merrillville, IN.

Thomas J. Maroney (BSEE '98) of Milton, VT, is a test applications engineer in the AISC Test Division of IBM.

Ryan McIntyre (BSEE '98) is a sales engineer in the Controls Group/Sales division at Johnson Controls. He resides in Medford, MA

Ryan Melville (BSEE '98) of Fridley, MN, is a design engineer in the Optical Networking Division of Tellabs Operations, Inc.

Daniel Pfunder (BSEE '98) of Renton, WA, is a hardware design engineer in the Performance Microprocessor Division of Intel Corporation.

1999

Clint Ecoff (BSEE '99) of Indianapolis, IN, was part of the development team for the 2nd generation HDTV receivers. He is associate member of the technical staff in the TV Product Development Department of Thomson Consumer Electronics.

Kristin Furrie (BSEE '99) of El Dorado Hills, CA, is a product marketing engineer in the Telecom Components Division/DSL Access Operations at Intel Corporation.

Residing in Colorado Springs, CO, *Carl Gygi (BSCmpE '99)* is a field applications engineer at LSI Logic.

Karin Alise Kraus (BSEE '99) resides in Cincinnati, OH, where she works as a field systems engineer for Buschman Corporation

Christopher Leisner (MS '99) is a research associate in the Department of Mathematics at Dartmouth College in Hanover, NH.

William J. O'Brien (BSEE '99) resides in Woodbridge, VA.

Jason R. Thomas (BSCmpE '99) of Carlsbad, CA, is employed at Motorola as a wireless systems engineer.

Annual ECE Turkey Contest Funds Holiday Meals for the Less Fortunate

In November 2000, members of Eta Kappa Nu, the ECE student honor society, held their fourth annual "Turkey of the Year" contest to raise money for Thanksgiving meals for needy families in the Greater Lafayette community. Professors Ragu Balakrishnan, John Nyenhuis, and Stanislaw Zak (left) competed against Jo Gelfand (right) for the "honor" of wearing a turkey costume for a day. Students, faculty, and staff supported their favorite candidate through donations, and the candidate collecting the most money was declared the winner. After extensive campaigning, Zak won the contest by a narrow margin over Gelfand, and twenty-seven families benefited from the work of the ECE students. Also shown is Matt Hageman (center), a May 2001 graduate and former HKN officer. The 2001 recipient of the "Turkey of the Year" award was Professor Tom Talayege.



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Calendar

2002

July 20	Purdue Day in Chicago
	Chicago, IL
August 4	August Graduation
	MSEE Atrium
August 14	Purdue Day at the
	Indiana State Fair, Indianapolis, IN
•	Fall Semester Begins
September TBA	Industrial Roundtable
	Purdue Mall
September 14	Parents Day
	MSEE Atrium
September 28	Homecoming
	Purdue vs. Minnesota
October 7-8	October Break
November 7	OECE Convocation and Dinner
December 15	December Graduation
	MSFF Atrium

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Address Correction Requested