UNIVERSITY OF WASHINGTON
COLLEGE of ENGINEERING
A Community of Innovators

the Trend in engineering

Spring 2007: Volume 57, Issue 1

Pioneers of the Passenger Jet

2007 Diamond Award Honorees

The Engine in Engineering

The Diamond Award honorees we salute in this issue of *The Trend* and celebrate on May 18 are tremendous role models. They are business leaders, entrepreneurs, innovators, inventors, spark plugs for economic growth, and catalysts of societal change. Two are at the peak of professional achievement. Others have moved from full-time careers into consulting roles and community engagement. They are engines that don't quit.

Don Petersen headed a Fortune 500 stalwart of American industry. Frank Robinson's entrepreneurial vision created a new company and new market for the civilian helicopters he sells worldwide. Sally Jewell is CEO of a Northwest outdoor gear icon and a leader in many volunteer groups in our region. Ed Felten is a strategic thinker influencing the shape and direction of information technology, a economic catalyst of the twenty-first century. And is there anyone on the planet who hasn't taken off in a Boeing jetliner or at least watched one fly overhead?

These accomplished alumni drive home an important point about the educational mission of UW Engineering. We do not just train students to go out and find good jobs. We incubate innovators and shape future leaders, more than a thousand every year, who generate ideas and inventions and fuel economic growth in Washington and beyond. Some will take the entrepreneurial route by setting up new companies and creating high-level technical and management jobs; others will do the same within established firms. Economic leverage for an engineering graduate is huge.

UW Engineering alumni have created products and companies for generations. A few prominent examples are diagnostic ultrasound (ATL), cardiac treadmills (Quinton), cardiovascular instruments (Heart Technology), Aldus (now Adobe; desktop publishing software), K2 skis and sports gear, and Ping golf clubs. Our motto: Stay healthy, stay connected, and have fun.

Economic leverage for an engineering graduate is huge.

One recent startup example in the new materials sector is MicroGreen Inc., which develops processes for making recyclable products from microcellular plastics (featured in the fall 2006 issue of *The Trend*.)

Some enterprising students start companies even before reaching alumni status. In this issue you can read about electrical engineering graduate student Samuel Kim, who has formed Hybiscus Technologies to license a promising "lab on a chip" fluorescence detection device. Tapan Parikh, a computer science and engineering graduate student, designed mobile phone software for poor people in rural India who are struggling to grow small businesses. He set up a company there to handle distribution.

Faculty also are heavily engaged in technology transfer and business creation. On page 5 read about two computer science and engineering faculty recently recognized for their innovative technologies and companies: Chris Diorio, who co-founded Impinj to develop and manufacture RFID and semiconductor products, and Oren Etzioni, who established Farecast, the hot new air fare prediction website.

This list could go on and on. The point is that UW engineers contribute in a big way to the quality of our lives and the vitality of our economy.

As society evolves, so do words. Today we speak of search engines and engines of opportunity as often as we speak of internal combustion engines. In our IT-IP world, we are cycling back to the root of the word engine, the Latin *ingenium,* an innate quality, especially a mental power, that gives birth to a clever invention.

That is the true meaning of the engine in engineer. We have an idea, we turn it into an invention or solution to a problem, and we harness its power to transform the world.

Matthew O'Donnell
Frank and Julie Jungers Dean
of Engineering

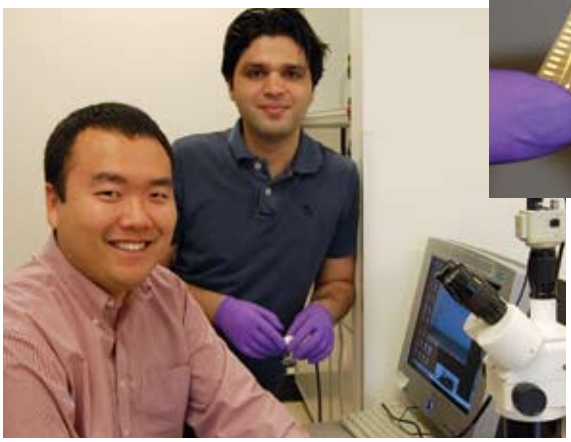
In This Issue

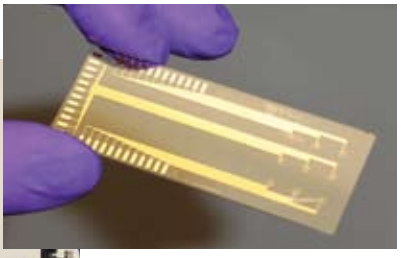
Congratulations to Our Newest AAAS Fellows

This year, two faculty members have been elected to fellowship in the American Association for the Advancement of Science (AAAS).

Susan Eggers, the Microsoft Professor of Computer Science & Engineering, was cited for her contributions to designing and evaluating advanced processor architectures. Eggers co-invented "simultaneous multithreading," which revolutionized commercial processor design by allowing single computer chips to juggle several tasks at once, boosting computer speeds by as much as 400 percent. Her current research aims to develop a "spatial dataflow computer" that executes instructions based on the data available, rather than simply following the order in a program.

Buddy Ratner, professor of bioengineering and chemical engineering and director of the UW Engineered Biomaterials (UWEB) program, was honored for his pioneering research and administrative leadership in the field of biomedical engineering, particularly in biomaterials and surface analysis. His distinguished career has focused on synthesizing, fabricating, and testing biomaterials for medical devices with particular emphasis on those that come into contact with the body. Ratner's current research aims to mimic living tissues.





Samuel Kim (seated) and Ehsan Saeedi share research interests in self-assembly processes for micro-systems. A template for the fluorescence detection system has electrical contacts along the edges of the left end and nine small, square sensor receptor sites at the right end.

Masters of Downsizing Win Best Paper Award

Yet another expensive, bulky laboratory instrument is destined for dinosaur status. So says Samuel Kim, an electrical engineering doctoral student who intends to shrink the standard benchtop fluorescence detection system down to a miniaturized "lab on a chip." Such a portable, easy to mass produce, and low-cost device could revolutionize diagnostics for diseases such as malaria, tuberculosis, and HIV/AIDS, as well as agents of bioterrorism. His proof of concept research bested hundreds of graduate student papers to win the top award at the recent IEEE Nanoelectronics and Molecular Systems conference in Bangkok. As one of 10 finalists, Kim presented his work to a panel of judges before a large audience of international scientists and researchers.

Co-author and EE doctoral student Ehsan Saeedi researches self-assembly techniques for display technologies. Kim and Saeedi linked up to develop a fluidic self-assembly process to fabricate plastic or glass templates embedded with free-standing and functional photosensors and LED elements. Assistant professor Babak Parviz advises the research and also co-authored the paper.

Kim, who worked in the biotech industry before coming to the UW, has received a provisional patent for his device and has formed a company called Hybiscus Technologies. UW TechTransfer is assisting with licensing arrangements for companies that want to spin off the technology.

"We expect the device will be find practical application in less than five years," Kim said. To learn more, email samkimuw@u.washington.edu.

TC Brings Home Major Honors

Technical Communication professor **Jan Spyridakis** will pick up three awards this spring. The Society for Technical Communication will recognize her career contributions with the first Ken Rainey Award for Excellence in Research. The society also chose one of Spyridakis' papers for the 2006 Frank R. Smith Outstanding Journal Article Award. Her winning article, co-written with graduate students Sandy Bartell and Laura Schultz, looked at how the spacing between headings affects the readability of Web text. And, Spyridakis will receive the University of Washington Distinguished Contributions to Lifelong Learning Award at a June 7 ceremony (see page 4).

TC's **Laboratory for Usability Testing and Evaluation** received the Diana Award from the Association for Computing Machinery's Special Interest Group on the Design of Communication. The lab uses cameras and *(Continued on page 4)*

Software Innovators Recognized

Chris Diorio, associate professor of computer science and engineering, received the 2007 Technology Innovator of the Year award at the Washington Software Alliance Industry Achievement Awards. Also recognized as "Consumer Product of the Year" was **Farecast.com**, the first and only airfare prediction website, developed by CSE professor **Oren Etzioni**. These awards celebrate innovation and excellence in technology that has made significant contributions to the way we work and live.

Engineering Shines on UW Turf

The UW's Annual Recognition Ceremony on June 7 honors alumni, faculty, staff, and students for exceptional achievement in 13 categories. Engineering shines this year with five winners! Read more about our engineering stars at: http://www.washington.edu/president/awards/2007recipients.html. The public is welcome to attend the June 7 event, 3:30–4:30 pm at Meany Hall.

Daniel J. Evans (CEE '48)
Alumnus Summa Laude Dignatus

Eve A. Riskin, Professor, Electrical Engineering
David B. Thorud Leadership Award

Jan Spyridakis, Professor, Technical Communication
Distinguished Contributions to Lifelong Learning

Deborah Flores, COE Human Resources Administrator
Distinguished Staff Award

Rajendra K. Bordia, Professor, Materials Science & Engr.
Marsha L. Landolt Distinguished Graduate Mentor Award

Thomas Robey, a bioengineering doctoral student, has won the *2007 Graduate School Medal*, which includes a $10,000 fellowship. It will be awarded at the fellowship recognition event on April 23.

TC Awards *(from page 3)*

eye-tracking equipment to study how people understand information on a computer screen. Engineering students and researchers use the facility, as do companies such as Microsoft and Amazon.com, to study the navigation of their Web sites. The Diana Award recognizes an organization, institution, or business for long-term contribution to communication design. Technical Communication chair Judy Ramey will accept the award in October.

◆ Winners ◆

◆ Student Honors

BIOENGINEERING **Shivang Dave**, **Rebecca Penkala**, and **Justin Shaffer** have won 2007 National Science Foundation Graduate Research Fellowships.

CIVIL ENGINEERING The UW student chapter of the American Water Resources Association won the 2006 Outstanding Student Chapter Award. **Chris James** is chapter president, Professor Anne Steinemann is faculty advisor.

COMPUTER SCIENCE & ENGINEERING **Julia Schwarz** and **Pavan Vaswani** have won 2007 Goldwater Scholarships, prestigious national awards for undergraduates in mathematics, the sciences, and engineering. **Nick Murphy**, **Kate Moore**, and **Ben Hindman** have received 2007 NSF Graduate Research Fellowships. **Martha Mercaldi** is one of 20 national recipients of the 2007 Google Anita Borg Memorial Scholarship for outstanding female students in computer science. **Aseem Agarwala** won honorable mention for his work in computer graphics as runner-up among 55 nominees for the Doctoral Dissertation Award from the Association for Computing Machinery.

ELECTRICAL ENGINEERING **Amy Dashiell** and **Robert Egbert** have won 2007 NSF Graduate Research Fellowships.

◆ Faculty Honors

BIOENGINEERING Assistant Professors **Xiao Hu Gao** and **Wendy Thomas** have won five-year National Science Foundation CAREER Awards. Gao also won a two-year New Investigator Award from the Congressionally Directed Medical Research Program.

COMPUTER SCIENCE & ENGINEERING Professor **Ed Lazowska** was named the inaugural chair of the Computing Community Consortium (CCC) Council of the Computing Research Association.

ELECTRICAL ENGINEERING Professor **Sumit Roy** has been elected a Fellow of the Institute for Electrical and Electronic Engineers. Assistant Professor **Maya Gupta** has won a 2007 Office of Naval Research Young Investigator Award. Assistant Professor **Babak Parviz** has won a 2007 CAREER Award from the National Science Foundation. Genome Technology magazine also recognized him as a "Rising Young Investigator."

MATERIALS SCIENCE & ENGINEERING Professor Emeritus **Thomas Stoebe** was honored with the 2006 George A. Roberts Award from ASM International for his educational work with K-12 students and teachers.

MECHANICAL ENGINEERING Associate Professor **Martin Berg** is a 2007 Boeing Welliver Faculty Fellow and this summer will work with engineers and other fellows at Boeing facilities across the country. Professor **Ann Mescher** was honored as the Puget Sound Engineering Council's 2007 Academic Engineer of the Year.

DIAMOND AWARDS 2007

The College of Engineering is excited to honor twelve eminent alumni with the 2007 Diamond Awards. These awards recognize outstanding professional and community achievement and celebrate the ingenuity and entrepreneurship of all engineers.

Please join us as we honor these exceptional alumni at the second annual Diamond Awards dinner on Friday, May 18. The program features brief video highlights of the careers of the honorees. UW President Mark Emmert and DeLaine Emmert join us as special guests.

Special thanks to this year's Diamond Awards selection committee: chair Tom Delimitros ('66), former dean Ray Bowen, Bonnie Dunbar ('75), Ark Chin ('52), Frank Jungers ('47), and Loren Carpenter ('76).

Please visit www.engr.washington.edu for more information about the awards and the recipients.

Second Annual
Diamond Awards Dinner

Friday, May 18, 2007
6~9 pm

Hotel DECA
University District, Seattle

Reception • Dinner • Program
$50 per person

For more information and to make a reservation, contact Nancy Anderson, 206-685-2422 by May 10.

Distinguished Achievement
Donald E. Petersen ('46)

Don Petersen built a 41-year career at the Ford Motor Company, becoming president in 1980 and chairman/CEO in 1985. Petersen changed the culture at Ford by focusing on inclusive teamwork and quality, leading the company through a spectacular turnaround that won him international recognition.

Entrepreneurial Excellence
Frank D. Robinson ('57)

Recognized as "the Henry Ford of helicopters," Frank Robinson established his own company in 1973 to build low-cost civilian helicopters. His models became hot sellers, and Robinson Helicopter has long held top ranking as the world's largest manufacturer of commercial helicopters.

Distinguished Service
Sally Jewell ('78)

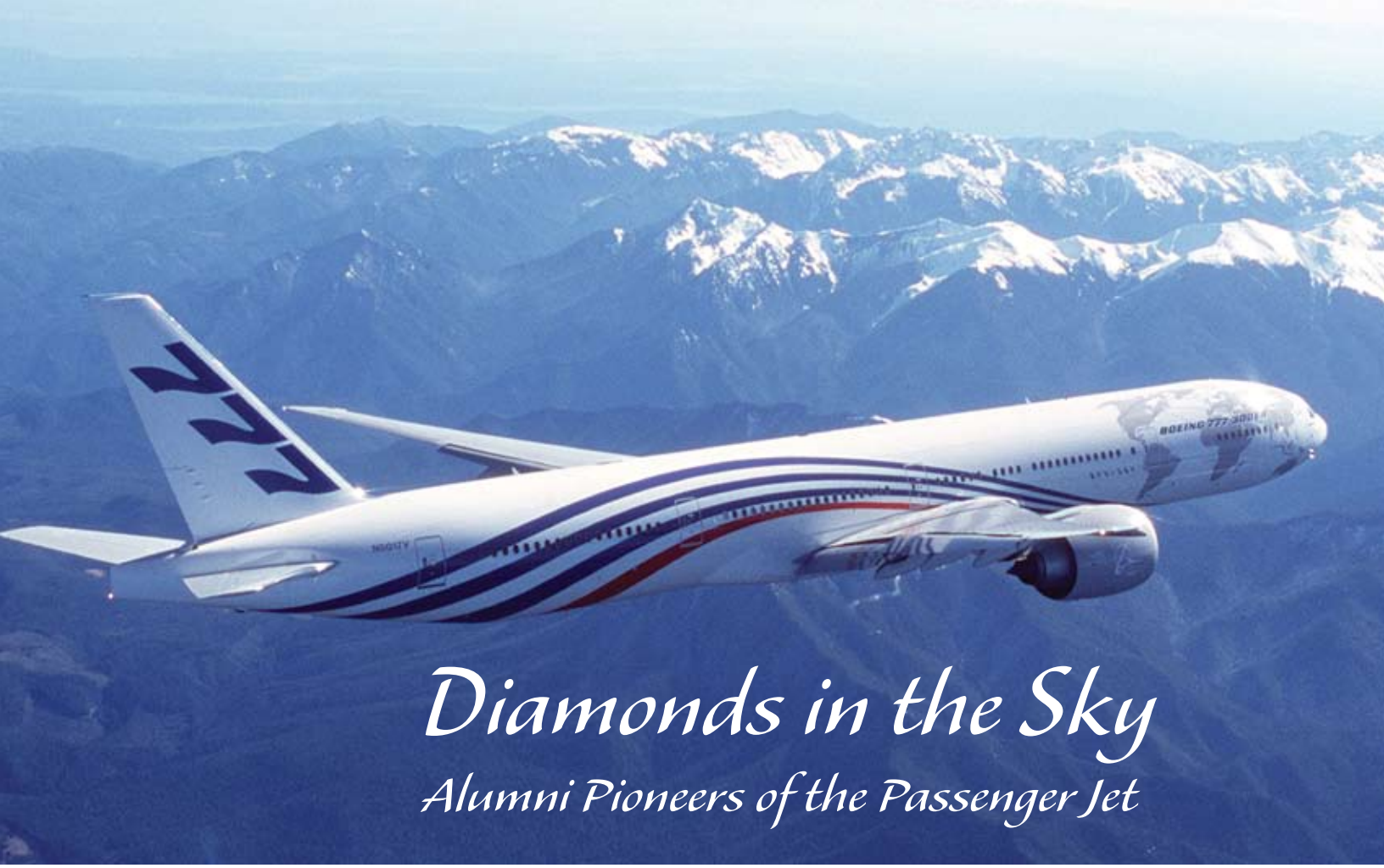
Sally Jewell is the CEO of Recreational Equipment, Inc. and a role model for civic involvement. She is a member of the UW Board of Regents and serves on the boards of the Mountains to Sound Greenway Trust, the National Parks Conservation Association, and the Initiative for Global Development.

Early Career Achievement
Edward W. Felten ('93)

Ed Felten is one of the nation's most effective public advocates for technical innovation and secure computing. As a professor of computer science and public affairs at Princeton University, his research spans operating systems, programming languages, Internet software, and consumer products.

Distinguished Group Achievement
Pioneers of the Passenger Jet

This special group award recognizes the achievements of eight alumni who greatly advanced the development of passenger jets at The Boeing Company. They are: Maynard Pennell, Robert Hage, John Steiner, Lynn Olason, Joseph Sutter, Robert Brown, Richard FitzSimmons, and John Roundhill.
See story on pages 6–7.



Diamonds in the Sky

Alumni Pioneers of the Passenger Jet

Just 40 years stretch between the first flight of the swept-wing "Dash 80" prototype that evolved into the 707 passenger jet and the first liftoff of the twin-engine, wide-body 777 in 1994. In that blink of history, half a human life span, the world changed more than anyone in 1954 could have imagined.

Today we take for granted that we can log onto the Internet and book a flight to Shanghai. Worldwide airline traffic now exceeds two billion passengers a year. Boeing jetliners fly three million passengers every day. Dial the time machine back to 1963, and it's quaint to picture 4,000 excited residents of Melbourne, Australia, waiting in long lines to glimpse the Boeing 727, the first passenger jet able to land on the airport's short runway.

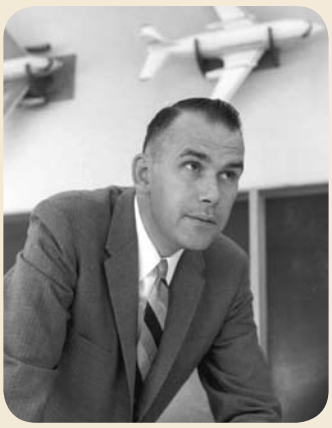
Just as ubiquitous computing is a driver of economic and social change in the twenty-first century, ubiquitous commercial air transport gave enormous thrust to economic growth and easy mobility of people and goods in the latter half of the twentieth century. It is a small world after all, thanks in large part to the visionary leaders and engineers at The Boeing Company.

Thousands of UW Engineering graduates have helped design and build Boeing's family of passenger jets, and in doing so have transformed the world and enriched our lives. The 2007 Diamond Award for Distinguished Group Achievement honors eight alumni whose vision, leadership, and engineering brilliance sent us soaring.

First among them, Maynard Pennell is still regarded as one of the most respected and influential engineers in Boeing history and a mentor to many of the Diamond Award honorees. He headed initial studies to determine the feasibility of commercial jets and then the design and construction of the long-range Dash-80 prototype and subsequently the 707. This project posed a huge financial risk, but its success set Boeing on the path to global leadership in commercial aviation. Pennell became director of engineering, then head of commercial airplanes and led the company to build a "family" of jets to serve diverse market needs.

Robert Hage and Richard FitzSimmons joined Boeing after World War II and worked in close partnership with Pennell to study the role of jet propulsion in civil aviation. Both became project engineers on the 707, and FitzSimmons later sold the planes throughout Europe and Africa.

Another member of the high-pressure Dash80/707 team, John "Jack" Steiner, was a lead aerodynamicist whose attention to detail and midnight-oil hours gained him a reputation as a legendary workaholic. Assigned to lead development of a medium-range jet, he first sketched out the design for the three-engine tail configuration of the 727 on a proverbial napkin while vacationing aboard his boat. Steiner led design and certification of the 737, which first flew 40 years ago and remains the world's all-time best-selling commercial jet.



Legends of the Jet Age

Left to Right:

Maynard Pennell got Boeing's first passenger jet off the ground and launched a whole family of models.

Hard-driving Jack Steiner earned his legend status as the "father of the 727."

Joe Sutter won worldwide aviation fame amd respect as the "father of the 747."

Photos © Boeing.

In this same generation of engineers, Robert Brown was an aerodynamicist and inveterate inventor who solved a serious pitch problem with the prototype for the B-47 Stratojet. His ingenious idea to install vortex generators literally rescued the plane and company from the brink of failure. Every plane since then has included vortex generators. Brown was chief designer for the commercial division during development of the 757 and 767, and retired in 1990 as a corporate vice president.

Two aerodynamicists, Lynn Olason and Joe Sutter, moved on parallel tracks through the 707, 727, and 737 programs. Sutter, admired as an outstanding organizer of people and projects, took on the enormous challenge of heading design for the world's first jumbo jet. He conceived the idea for the twin-aisle wide body, and guided the first 747 into production. Sutter then directed development of the 757 and 767 and retired as a senior vice president. Olason worked with Sutter on the early stages of the 747, designed the cross-section for the 767, and then managed the 747 program after Sutter.

A next-generation engineer, John Roundhill, was a highly regarded expert on noise mitigation. He worked on the first 747, then with the 737 and 757 programs. Roundhill headed product development, customer configuration, and marketing for the long-range 777, then served as vice president of product development and strategy in the commercial division.

All UW Engineering alumni can be proud of these exceptional leaders, who had pivotal roles in advancing aviation and the worldwide reach of Boeing and Seattle.

The 707 prototype, now at the Smithsonian, sweeps over campus and the engineering buildings.

2007 Diamond Award
Distinguished Group Achievement

Robert Brown (BSAE '47, MSAE '52)
Richard FitzSimmons (BSAE '46)
Robert Hage (BSAE '39)
Lynn Olason (BSAE '43)
John Roundhill (BSME '67, MSME '73)
Joseph Sutter (BSAE '43)

Posthumous

Maynard Pennell (BSAE '31)
John Steiner (BSAE '40)

Read more about these pioneers at http://www.engr.washington.edu/awards/diamond_winners.html#group

COVER PHOTOS:
Boeing 747-400 on the Tarmac at Sunset.
Inset: Jack Steiner, third from right, consults with engineers on the design of the 727. Joe Sutter is third from the left.
All photos © Boeing.

Engineering House Is Off to a Great Start

Generations of alumni might envy the class of 2010. Last fall more than 120 pre-engineering students moved into dorm rooms on two floors of McCarty Hall. "Engineering House" aims to improve the freshman experience by fostering a strong peer community. Students go to classes and study together, buy books from each other, commiserate over tough courses, and also find time for fun by playing games like Cranium or working out at the IMA.

"Engineering House is really useful because we are all ambitious people so there's less chance of getting sidetracked, as happens in other dorms," said Yu-ting Hsieh.

"We're expanding the house to include a third floor next fall," said associate dean Eve Riskin. "It should be a winner for student recruitment and boosting retention."

Pre-engineering frosh (L to R) Dennis Linn, Kathy Lee, Miranda Schmidt, Jeff Beorse (kneeling), Kyle Shoum, Michael McMillan, Yu-ting Hsieh, and Marita Rodriguez have found friends and study pals in Engineering House.

Global Outreach: Small Solutions with Big Impact

Photo by Mary Levin, UW Photography

Photo by ekgaon

Graduate student Tapan Parikh modified a cell phone for microfinance borrowers and fair-trade coffee growers. At right, Indian women record the day's transactions from their retail shops and other businesses.

Modified cell phone helps the poor build businesses

Tapan Parikh took a risk when he chose an unconventional topic for his doctoral work in computer science and engineering. "Now he is one of the leading researchers in creating information technology to meet the needs of the Third World," said his advisor, CSE Professor Ed Lazowska.

Parikh designed mobile phone software for use by members of grassroots microfinance banking cooperatives that offer very small loans to start or expand businesses. Recipients participate in a microfinance peer group to monitor the progress of their businesses. Previous efforts to move recordkeeping from ledgers to computers had failed in poor rural areas. Parikh, a New York native of Indian heritage, adapted a mobile phone to take photos of bookkeeping forms and prompt users to enter numbers and transmit data by text message to a central server. He founded a company in India, ekgaon, that contracts with CARE India to provide phones to more than 700 cooperatives.

Learn more about this work: http://www.cs.washington.edu/homes/tapan, http://ekgaon.com, and http://uwnews.washington.edu/ni/public/print2.asp.

It takes a stove to heal a village

It takes a wood-fired adobe cooking stove with a chimney that vents through a tin roof. Showing villagers how to install these low-tech but efficient stoves and roofs will help poor families in a remote area of the Andes overcome chronic lung ailments caused by smoke-filled houses, and heart disease triggered by an insect that thrives in thatched roofs.

Engineering students with the UW student chapter of Engineers Without Borders will bring materials and volunteer their skills this July in Yamayo, Bolivia. Learn about this project and the students' efforts to fund it by visiting http://students.washington.edu/ewbuw.

Katrina Aftermath a Life-changing Classroom

Electrical engineering student Charlene Reyes, operating a tile saw, and associate professor Denise Wilson (right) tackle the nitty gritty work of repairing a damaged home.

Hands-on learning and real-world experience are touted as keys to reforming engineering education and teaching skills needed in the global economy. And so much more, especially when "hands-on" and "real-world" encompass the devastation wrought by Hurricane Katrina.

Junior electrical engineering major Charlene Reyes found a passion and a career path. Mayra Garcia, who will receive her civil and environmental engineering degree this summer, embraced the importance of bringing people and their needs to the fore in project planning.

The transformative catalyst was a winter quarter course titled "Impact of Katrina on Technology and Infrastructure," led by Denise Wilson, associate professor of electrical engineering. She took five engineering students and seven from other disciplines to the Gulf Coast town of Bay St. Louis, Miss., to learn about natural disasters, emergency response, and infrastructure issues.

Reyes and Garcia signed up for similar reasons. "I had never traveled outside the West Coast and this was the closest I could get to the experience of studying abroad," Reyes said.

"Once you get out of your own bubble, you can't get back in."

Wilson had more in mind than an introduction to different regional culture. Her own life-altering experiences volunteering on the Gulf Coast in 2005 inspired her to develop an undergraduate course that immersed students in community service work and exposed them to the societal, economic, and technological issues entangling an epic environmental and human tragedy.

In Bay St. Louis, population 10,000, the students bunked in the small, stuffy classrooms of a church and washed in a make-shift shower tent. "We complained for the first week," Reyes said, "but we saw so many families still living in cramped FEMA trailers parked outside their wrecked homes. It was so humbling. I used to be all about 'poor me,' but now I appreciate everything."

For their community service, the students spent three to four days a week repairing homes, learning how to install dry wall and do plumbing, electrical repair, tiling, and painting. "The local people were so friendly, optimistic, and grateful," Garcia said. "One man whose house we worked on would bring us food like gumbo."

The academic component of the course included field trips to study the effects of wetland degradation, weak infrastructure, and the problems with government response. Students looked at flood control structures along the Mississippi and were briefed on rescue operations by the Coast Guard in New Orleans and on electrical grid restoration by Mississippi Power. Wilson led regular discussion sessions to reflect on their experiences, and the students completed weekly writing assignments and wrote a term paper.

In researching her paper on the effects of Katrina on the power grid, Reyes discovered her engineering passion and mission — large-scale power systems. She's eager to go to graduate school for training in this field. "The experience of this course changed my life," Reyes said.

"Once you get out of your own bubble, you can't get back in," Wilson affirmed. "I'm encouraged that some students came back with a strong, enduring desire to serve the community."

That's the power of hands-on, real-world learning.

The UW's Carlson Center assisted in designing the course. Wilson will lead another group of undergraduates to Bay St. Louis this summer.

Could Anything Top His Talking Toaster? Yes! Corey Anderson Has Created an Even Bigger Buzz with His Endowments

The "Talking Toaster" generated a hot buzz in Computer Science & Engineering's senior capstone design course in spring 1996. Voice-activated and programmed to respond to instructions and talk back (no need to set dials or push levers), the popular gizmo remains firmly and fondly embedded in CSE's cultural memory and in video format on the department's website.

Its co-designer, Corin ("Corey") Anderson, recently set off another buzz around CSE when he simultaneously established both fellowship and scholarship endowments with a substantial gift through the UW's new Students First program (page 7). Now a software engineer at Google, he is, at age 29, CSE's youngest donor at this level. With a 50 percent match from the UW, his endowments will support undergraduate and graduate students each year, in perpetuity.

Corey earned bachelor's degrees in math and computer science in 1996 and a PhD in computer science in 2002. As an undergrad he explored computer graphics, and his graduate research included machine learning, planning systems, data mining, and applying artificial intelligence to problems on the Web. His well-rounded training has made him a perfect fit for Google, where he works with a team improving its Web search property.

"Campaign UW topped its $2 billion goal on January 26 — cheers and thank you! Now onward to meet Engineering's goal and to support exceptional students through the new Campaign UW Students First initiative."

Steven R. Rogel, Chair, COE Campaign Executive Committee
Chairman & CEO, Weyerhaeuser Company

From his undergraduate days through his years as a grad student, Corey had heard about efforts to raise money for the new CSE building. It left an impression. "The idea just stuck that I wanted to give back to CSE someday," Corey says. "It's a friendly place and a lot of fun, too. Setting up a fellowship to aid future graduate students who also appreciate and contribute to this culture sounded like a great idea."

The Anderson Family celebrates graduation in 2002. From left are Craig, Casey, Cory, and Cathy.

Still, it felt a little odd to be creating an endowment in just his own name, so after consulting with his dad, Craig, he also decided to honor his family by establishing the Anderson Family Endowed Scholarship for undergraduates. "This idea was just perfect," Corey says, "because my entire family was involved with my education and my brother, Casey, overlapped with me at CSE. It would be wonderful, for example, if families with more than one member at the UW could benefit from scholarships so the recipients can have a richer college experience, shared with family."

Corey, Casey, and their mother, Cathy, started taking math classes together at Highline Community College when Corey was 12 and Casey was 13. "I thought they were too young to go on their own, so I enrolled too," says Cathy. By 1993 all three had AA degrees and had entered the UW. Their motto might well be, "The family that studies together, succeeds together."

Cathy earned her bachelor's degree in technical communication and works at Microsoft as a content release manager for its email and messaging server. She hails from a family full of engineers dating back to her great grandfather. Craig is an electronic technician, so Corey and Casey received technological encouragement from both sides. Casey earned a bachelor of science in computer engineering in 1996 and in 2002 completed his professional masters degree in CSE. Like Cathy, Casey works for Microsoft, as a software development programmer for K-12 products.

To announce the scholarship endowment to his family, Corey hatched a plan to present it as a surprise Christmas gift. "We were dumfounded," Cathy says. "Speechless," Casey adds. "It was absolutely cool and awesome. It's impressive to be able to give something back as a family, and we have a lot to be thankful for."

Engineering Leads UW in Students First Endowments

Engineering is running far ahead of the dawg pack in creating new endowments to provide support for deserving undergraduate and graduate students. Alumni and friends have established 17 endowments since the Students First Matching Challenge Initiative launched late last year — close to 40% of the endowments established campuswide as of March 31.

The new initiative addresses a critical university goal to increase access by removing financial barriers for deserving students. Corin Anderson (page 6) is an example of the engineering alumni and friends listed here who are front-runners in embracing this challenge.

Students First affirms the Husky Promise, a commitment that students from all economic backgrounds should have the opportunity to attend the UW. Beginning in fall 2007, the UW will bridge gaps in financial aid for qualified undergraduate students.

Students First helps build private support to make this possible. New endowments with a minimum contribution of $100,000 are eligible for matching funds of 50 percent on the principal. All departments need more undergraduate and graduate student endowments to draw exceptional students who otherwise could not afford to attend the UW. The challenge continues through the conclusion of Campaign UW in June 2008. Let's ensure Engineering remains the leader of the pack, and engineering students benefit from Students First.

To learn how you can establish an endowment, contact Jan Labyak, labyak@engr.washington.edu or 206-543-8779.

▶ Students First Endowments in Engineering

Fellowship Endowments

Corin Anderson Endowed Fellowship in Computer Science & Engineering

Hacherl Endowed Fellowship in Computer Science & Engineering

Purvis Family Endowed Fellowship in Mechanical Engineering

Scholarship Endowments

Anderson Family Endowed Scholarship in Computer Science & Engineering

Shelley and Jonathan Bagg Endowed Scholarship in Chemical Engineering

Crawford Family Endowed Scholarship in Engineering

Ron Crockett Endowment for Undergraduate Scholarships in Mechanical Engineering

Google Endowed Scholarship in Computer Science & Engineering

David and Cathy Habib Endowed Scholarship in Computer Science & Engineering

Verelynn M. Hewett Endowed Scholarship Fund in Engineering

Jewell Endowed Scholarship in Engineering

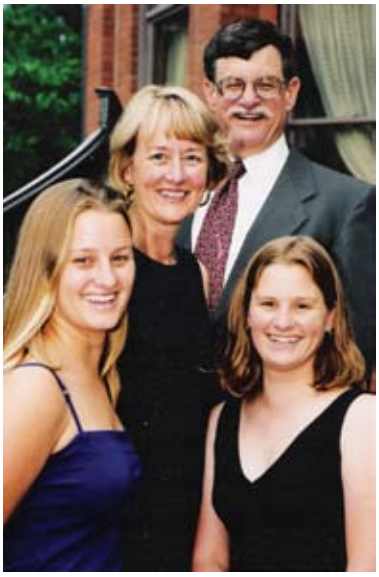
Robert B. Pearce Endowed Fund for Students in Civil Engineering

Pedrizetti Family Endowed Scholarship in Computer Science & Engineering

RealNetworks Endowed Scholarship in Computer Science & Engineering

Alfred C. Weaver Endowed Scholarship in Computer Science & Engineering

Craig and Gretchen Wittenberg Endowed Scholarship in Computer Science & Engineering



Shelley and Jonathan Bagg with daughters Suzy (left) and Eve.

They Bonded in Chem Lab and Now Catalyze a Legacy

A chemistry lab lit the spark between Jon and Shelley Bagg. Shelley (née Garrett) was one of just two women in her 50-member chemical engineering class. Jon was completing an MS in chemistry and serving as lab TA. They became closer lab buddies the next year when Jon stayed on to complete credits for a BS in chemical engineering. They graduated in 1971 and moved to California's Bay Area, Shelley becoming one of the first female engineers at Chevron's Richmond refinery and Jon signing on with General Electric's Nuclear Power Division and later working for several units of Chevron.

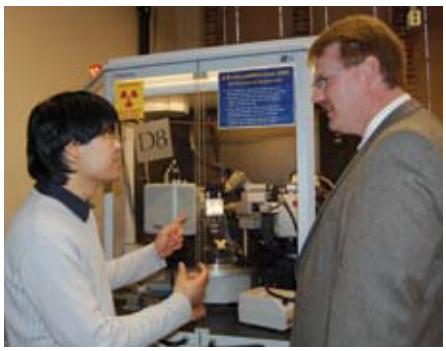
Fast forward 36 years through challenging engineering work, raising daughters, a career shift (Shelley), and a "failed" retirement (Jon). Shelley established a successful business offering financial planning and investment services. Jon consults on engineering design projects and enjoys part-time work at an independent bookstore.

Now they have forged a new bond with the UW by establishing the Shelley and Jonathan Bagg Endowed Scholarship in Chemical Engineering. The Students First Matching Initiative boosts their $100,000 gift with an additional $50,000.

"A scholarship enabled me to earn a degree that catapulted me to a better life," Shelley said. "We credit much of our success to our UW education, and the Students First initiative gives us the opportunity to pass this legacy on by helping deserving students obtain chemical engineering degrees."

MSE chair Fumio Ohuchi officially opens the lab with help from Scott DeBoer (left), Micron's director of process research and development, and Dean Matthew O'Donnell.

Postdoctoral fellow Kunakorn Poochinda talks with Scott DeBoer about use of the 2D micro-diffraction XRD purchased with Micron funding.



UW and Micron Launch Materials Testing Lab

A quest for ever faster and smaller semiconductor devices is driving the computer chip industry to develop and incorporate new materials in chip structure. As chip components shrink, nanoscale effects change the behavior of materials and affect performance. "Smaller devices will require new combinations of materials," said Fumio Ohuchi, professor of materials science and engineering and director of the new Micron Laboratory for Combinatorial Materials Exploration, officially dedicated on March 19. Boise-based Micron Technology, Inc. and the Micron Foundation helped launch the new lab with more than $400,000 in equipment and $500,000 in cash. "By collaborating with the UW, we have a unique opportunity to enhance research activities to drive material development efforts and digital technology innovation," said Scott DeBoer, Micron's director of process research and development.

New Systems Engineering Certificate Program Meets Industry, Education Needs

Eighteen UW students and four Boeing engineers completed a new certificate program in Global Integrated Systems Engineering (GISE) during the 2006 summer quarter. Funded with a grant from Boeing, the new program meets a growing industry need for engineers who can take a big-picture look at the interplay of technology, engineering, the business environment, management, finance, and other factors.

A collaboration of the College of Engineering, Boeing, and the Business School, the nine-week course encompassed lectures, case studies, and seminars presented by industry and academic leaders. Lead departments are Industrial Engineering and Aeronautics & Astronautics.

The program is accepting applications for fall quarter: www.engr.washington.edu/epp/gise/apply.html.

http://www.engr.washington.edu • Tel: 206.543.0340 • Fax: 206.685.0666

The Trend in Engineering

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