

the Trend

in engineering

Summer 2005: Volume 55, Issue 1

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This new graduate wants to put cleaner fuel in your tank. Page 6



Message from the Dean

"A Community of Innovators"

The transition from spring to summer is an upbeat time at the university. We are basking in the reward of sending another wave of eager graduates out into the world.

Our intense academic pace drops a few notches during summer, giving us a chance to reflect on the year's accomplishments and to prepare for new challenges coming with autumn.

The College of Engineering is itself experiencing a transition, venturing into new and exciting territory over the past few months. For one, I'm new — in February I took over the helm as acting dean when our former dean, Denice Denton, became chancellor at the University of California–Santa Cruz. We were sad to see her go, but the opportunity was excellent and we wish her the best.

Another change is the new look of the *Trend in Engineering*, the first redesign in quite a few years. It reflects one component of an overall new image for the college intended to bring our public persona in line with how we really see ourselves. This college-wide evaluation process

took more than a year of hard work, initiated and shepherded nearly to completion by Denice. It included research, focus groups, and sessions of self-reflection. The experience has been a journey that has fostered awareness. As a college, we thought hard about what we do, why we do it, and what is important. Here's what we've affirmed:

- **We're a community of innovators.** UW Engineering has a rich history of discoveries, inventions, and heroes. Alum Joseph Sutter, for example, is considered the father of the 747. Another, Bonnie Dunbar, broke gender barriers as a materials scientist and explorer to become one of the world's most experienced astronauts. Wayne Quinton, a bioengineering pioneer, crafted a shunt to allow long-term kidney dialysis, which has saved millions of lives. Building on this history, our faculty daily challenge each other to think big, to take risks, to innovate.

- **We work as a highly interdisciplinary team.** Traditional boundaries segregating engineering disciplines



Mani Soma, Acting Dean

are becoming increasingly meaningless in the twenty-first century. Our people and our work reflect that.

- **We're here for the students.** This point is foundational and foremost. It may come as a surprise to some because the college and the university are so accomplished in research. In federal grants and contracts, the UW is No. 1 in the country among public universities and No. 2 overall. Our researchers have international reputations as leaders in their fields. We create tools that help solve the world's problems, and we revel in that, but the best part is that we get to take students along for the ride. We feel the most pride in shaping and inspiring young engineers who will leave the UW ready and excited to make immediate contributions to the profession and the community.

So, welcome to the new *Trend*. Please also take a moment to browse our college website and see the changes there. And stay tuned. Denice Denton left the college on an upward trajectory, and that's a course we are maintaining during the search for a new dean. ■

Meet Mani Soma

After Mani Soma became acting dean, he received hundreds of emails asking what happened to his Electrical Engineering website photo showing him in favorite gear — a chef's toque and apron. "I promised them it would return in a year," Soma says. His role as acting dean requires a more serious visage, but by no means is humor on hold in his life. "My philosophy has been to do things that are fun. It's a philosophy that works very well," he says.

With a wide smile, he infuses high energy into everything from administrative duties to his research designing integrated circuits and bioelectronic systems, and his favorite pastimes — cooking, gardening, hiking, and folk dancing. He knows more than 1000 dances from cultures worldwide.

A native of Vietnam, this man of many talents earned BS degrees in electrical engineering and math at California State University–Fresno and his doctorate in electrical engineering at Stanford. A faculty member since 1982, he is an internationally recognized researcher and respected administrator.

Moving Up in the Rankings

The latest *U.S. News & World Report* rankings of graduate engineering programs, released in April, show the College of Engineering moving up to 24th in the nation. The college has risen steadily in the rankings in recent years; just four years ago it was 33rd. Among specialty areas, UW Bioengineering holds the No. 4 spot and Computer Science & Engineering No. 12. Other departments with top 20 rankings are Civil Engineering (16), Electrical Engineering (16), and Aeronautics & Astronautics (17).

International Stamp of Approval for UW

The University of Washington stands mighty tall on the global front. A study announced in September 2004 ranks the UW 20th in the world based on academic and scientific achievement. The Institute of Higher Education at Shanghai Jiao Tong University gathered data on 1000 universities worldwide and published rankings for the top 500. The researchers rated them based on "internationally comparable data that everyone could check," such as faculty and alumni Nobel Laureates, numbers of articles cited in *Nature* and *Science*, and entries in *Science Citation Index* and *Social Science Citation Index*.

Of the top 25 universities, 18 are in the United States (Harvard and Stanford rank 1st and 2nd), five are in the United Kingdom (Cambridge is 3rd), two are in Japan, and one in Canada. The goal was to find the gap between Chinese universities and world-class universities in academic or research performance. Study results are available at: <http://ed.sjtu.edu.cn/ranking.htm/>.

Kids Have a Blast at 2005 Open House

A record 7500 students, teachers, and parents interacting with 100 hands-on exhibits detonated a high-energy explosion of fun and learning at the April 21–22 Engineering Open House. Saturday drew many families and alumni. For more details and photos, visit: <http://www.engr.washington.edu/eneews/2005-05/15.html>.



LEFT: Static electricity creates a bad hair day at Electrical Engineering.

ABOVE: Counting down to blastoff of a water-bottle rocket. This popular Aeronautics & Astronautics demo always draws big crowds.

RIGHT: Where can you take the wheel of a spiffy new Kenmore rig or check out a human-powered submarine? At Mechanical Engineering, of course.



Allstot Named Chair of EE

After leading Electrical Engineering for eight months as acting chair, David J. Allstot was appointed to a five-year term as chair on May 1.

"David enjoys a strong reputation in the department for his integrity and focus on excellence in education, research, and service," said Acting Dean Mani Soma.

Allstot joined the EE faculty in 1999 after working widely in industry and academia, including positions at Tektronix, Texas Instruments, Oregon State, Carnegie Mellon, and Arizona State.

Allstot holds the Boeing-Egtvedt Chair in Engineering and conducts research on radio-frequency integrated circuits and low-power systems. He has won many honors for his work and is a Fellow of IEEE. He earned his BS from the University of Portland, his MSEE from Oregon State, and PhD from UC Berkeley.

Radiation Danger from Cell Phones?

Largest "Experiment" in the World Is Under Way



Professor Henry Lai

article by Rob Harrill reveals the threats to researchers — and scientific inquiry — when a powerful industry intervenes. Read the full story on the Columns website at <http://www.washington.edu/alumni/columns/march05/wakeupcall01.html>.

Henry Lai had received a disturbing phone call asking what was going on with his studies on the effects of microwave radiation on the DNA of brain cells. An official of the National Institutes of Health, which was funding his work, informed him that someone had reported that Lai was misusing his research funds by doing work not specified in the grant (which did not mention DNA). Lai responded with a fax explaining how his work fell within the parameters of the grant. The NIH concurred and assured him that all was well.

This incident, Lai says, was the beginning in a David-and-Goliath conflict pitting him and other scientists against an emerging technology that would rapidly become one of the most lucrative and powerful businesses: the cell phone industry.

The controversy goes back to a study by Lai and colleague Narendra Singh, published in a 1995 issue of *Bioelectromagnetics*. They found an increase in damaged DNA in

A magnetic storm of media publicity swirled about Bioengineering's Henry Lai in March after Columns magazine published a feature on his groundbreaking studies of the possible dangers of radiation from cell phones. An Associated Press wire story triggered more than 100 media hits in just one day. Lai was quoted in the Washington Post and his findings were featured on CNN's Daybreak newscast.

Lai is a research professor in Bioengineering who earned his PhD from the UW in 1977. The Columns

the brain cells of rats after a single two-hour exposure to microwave radiation at levels considered "safe" by government standards.

While Lai is the first to say there are "no solid answers" to the controversy over cell phones and DNA damage, there is "cause for concern" and more work needs to be done. Instead, Lai says, he and his research colleagues have been the focus of a campaign to discredit their work:

- Internal Motorola documents in the 1990s point to an organized plan to "war-game" Lai's work.
- At one point, the director of a group created to manage \$25 million in research money donated by the cell phone industry sent a memo to then-UW President Richard McCormick urging him to fire Lai and Singh.
- Federal money for research in this field has dried up, supplanted by funding from the industry, which Lai and others say can come with restrictions so oppressive that they hamper scientific inquiry.

The stakes, both in potential ramifications and industry profits, are high. An overall dollar figure for the cell phone industry would easily be in the hundreds of billions of dollars, according to Louis Slesin, who as editor of *Microwave News* has followed the ins and outs of research in the field of bioelectromagnetics for more than 20 years.

"It's all about science, politics, and money, and not necessarily in that order," Slesin says.

Lai says there have been about 200 studies on the biological effects of cell-phone-related radiation.

"When you look at the non-industry sponsored research, about three out of every four papers show an effect," Lai says. "Then, if you look at the industry-funded research, it's almost opposite — only one out of every four papers shows an effect."

The problem, he adds, is that there is no funding available in the United States that isn't attached to the industry. Lai, for one, refuses to take any more industry money.

Slesin notes that "We are making fundamental changes to the electromagnetic environment in which we live. ... What that means is we will all be exposed to electromagnetic radiation 24/7. I don't know if there is a problem, but I think we owe it to society to find out."

Either way, the answers will come, given time, says Lai. "We see the effects, but we don't know the consequences. With so many people using cell phones, we will eventually know. The largest experiment in the history of the world is under way. We will know, in about 10 or 15 years, maybe." ■

Robo-Doc to the Rescue on Battlefields of the Future

On the battlefield of the future, medical personnel won't be on the front lines dodging bullets as they try to reach fallen soldiers to render aid. Instead, tough, high-tech robotic pods will be in the thick of battle with human soldiers, acting as the eyes, ears, and hands of surgeons situated hundreds or even thousands of miles away.

These "robo-docs" could save soldiers' lives by getting them the expert care they need sooner after being hit. That's the vision of a multidisciplinary team of researchers in the Electrical Engineering and Surgery departments.



Checking robotic surgery equipment are, from left: EE faculty members Jacob Rosen and Blake Hannaford, EE graduate student Mitch Lum, and ME graduate student Denny Trimble.

Professor Blake Hannaford and Research Assistant Professor Jacob Rosen, in Electrical Engineering, with Professor Mika Sinanan, in Surgery, are leading a group of students in the UW's Biorobotics Lab in a consortium with partner universities and companies to create a "trauma pod" for the military. The consortium has received a \$12-million, two-year grant from the Pentagon.

To learn more about this work, visit: <http://www.enr.washington.edu/eneews/2005-05/09.htm>. The fall engineering lecture series also will feature this research (see page 12). ■

◆ Winners ◆

This column highlights just a few of the many awards won by our outstanding students, faculty, and staff. See Washington Engineer at www.enr.washington.edu/ for more detail about some of these awards and to learn about others.

◆ Student Honors

Annè Koutz, civil engineering (BS '05), won the prestigious 2005 Structural Engineering Traveling Fellowship from Skidmore, Owings & Merrill Foundation. She will study the design of buildings and bridges in Egypt, Turkey, and Europe.

Joel Nishimura, bioengineering sophomore, was honored on February 25 with the 2003–2004 President's Medal for High Scholarship during his freshman year.

Jason M. Parker, electrical engineering senior, is a 2005 Barry M. Goldwater Scholar. He plans to focus his doctoral work on spin-based electronic devices.

Jenny Yuen, computer science & engineering (BS '05), is one of 10 students nationwide to receive the 2005 Google Anita Borg Memorial Scholarship for outstanding female undergraduate and graduate students in computer science.

Six engineering students are the core of an interdisciplinary UW team that won honorable mention in the 2005 Hydrogen Systems Design Contest sponsored by the National Hydrogen Association, ChevronTexaco, and the Department of Energy. They are: Timothy Chao (bioengineering), Liyang Chen and Justin Reed (electrical engineering), Clint Nelson (civil engineering), and Brandon Renfrow and Alex Zheng (computer science & engineering). They were recognized for "brilliant innovation" in design of a next-generation hydrogen power park.

◆ Faculty Honors

Richard Ladner, Boeing Professor of Computer Science & Engineering, was honored at the White House on May 16 with a 2004 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring.

Allan Hoffman, professor of bioengineering, has been elected a Fellow of the National Academy of Engineering, a prestigious honor that brings the number of members in the college to 12. He initiated the UW biomaterials program.

Deirdre Meldrum and **Mari Ostendorf**, professors of electrical engineering, have been elected Fellows of the Institute of Electrical and Electronic Engineers. IEEE cited Meldrum for her contributions to genome automation and Ostendorf for contributions to statistical modeling of speech signals.

Mehran Mesbahi, professor of aeronautics & astronautics, has been honored with a 2005 University of Washington Distinguished Teaching Award.

Venkatesan Guruswami and **Mark Oskin**, associate professors of computer science & engineering, received 2005 Sloan Research Fellowships. Guruswami focuses on theoretical computer science and Oskin on distributed computation.

Mark Tuttle, professor and chair of mechanical engineering, was inducted as a Fellow of the Society for Experimental Mechanics on June 8.

Engineering faculty received six of seven 2005 Technology Gap Innovation Fund awards from UW TechTransfer. They are Les Atlas, Maya Gupta, and Vikram Jandhyala (EE), Vipin Kumar (ME), Wei-Chih Wang and Per Reinhard (ME), and Miqin Zhang (MSE, UWEB). See: <http://www.uweek.org/> (Vol 30:22, 6-2-2005).

Biodiesel Fuels His Mission

New grad taking the express lane to global entrepreneurship

Unlike most members of his June graduating class, Ravi Mikkelsen hasn't been sending out résumés and looking for a job. This recent materials science and engineering (MSE) graduate already holds the title of president — of TruDiesel Fuels — a company he founded last September.

Mikkelsen may be starting at the top, but he and his business partner are building their renewable energy company from the ground up. They want to help wean people from dependence on fossil fuels drawn from the depths of the earth. Of much greater interest to them is what grows on, blows across, and shines down on our planet's surface.

The company's first focus will be producing and distributing biodiesel, a fuel derived from vegetable oil. It has held a minuscule percentage of the fuel market for some years, but rising oil prices are stoking interest in this cleaner-burning alternative. Witness singer Willie Nelson's high-visibility entry into the market with "Bio-Willie Diesel Fuel" sold at Texas truck stops.

Go big or go home

Move over Willie. Mikkelsen intends to put pedal to the metal and zoom ahead. "Our goal is to be the first company to produce one billion gallons a year," he states, undeterred that current total world production is just a billion gallons.

Mikkelsen has a firm grasp of the merits of economy of scale. "Go big or go home" and "You need it, we've got it," are the drivers of

TruDiesel's business plan. Another ambitious goal is to build a biodiesel plant in Beijing so buses can run on clean fuel for the 2008 Olympics.

He and his partner, a Princeton graduate and financial analyst in Los Angeles, have secured seed funding from an investor in San Diego, are lining up bank loans, and are in contract discussions with several West Coast trucking firms and municipalities interested in fueling buses with biodiesel.

They are also eyeing large-fleet customers such as school bus companies, and even sailboat owners, whose diesel engines produce notoriously polluting, foul-smelling emissions. As a vegetable oil product, biodiesel combustion would leave a faint odor of popcorn wafting over the water (or interstate).

Mikkelsen's warm smile and friendly, relaxed persona don't hint at his captain of industry ambitions until he starts talking about his



Mikkelsen runs his own car on pure biodiesel.

life and his passions. From his birth in India, Mikkelsen has seemed destined to follow the road less taken. His parents' spiritual teacher bestowed the name Ravi. It means "sun" — fitting and perhaps also prophetic for a renewable energy entrepreneur who radiates optimism and confidence.

He spent his early childhood in upstate New York, where hiking in the mountains instilled a love of nature. His parents, who both attended the UW, brought the family back to their Puget Sound roots when Mikkelsen was 10.

As a teen he knew he wanted to start his own company and assumed he should study business in college. He scrapped that idea when someone urged him to "do what you like to do" and suggested that his love of building things and interest in math and science pointed to engineering.



Ravi Mikkelsen (right) and Ryan Bowman, who just graduated with a BS in mechanical engineering, have been working with a group of UW students to make 100% pure biodiesel fuel. A UW PhD graduate and biodiesel advocate who lives north of campus offered his garage as a laboratory.

societal challenges of developing eco-friendly industrial parks there reinforced that goal.

The next “eureka” moment came when Mikkelsen returned to Seattle. His dad was talking about buying a truck that runs on biodiesel. Intrigued, Mikkelsen did some Web research and quickly realized the market was ready to take off now, whereas fuel-cell-powered vehicles are still 20 years into the future.

As a fifth-year senior, Mikkelsen juggled classes with launching his company, volunteering with a community group of biodiesel advocates, and serving as president of a materials science honor society.

He also founded a UW student group, French Fry Fuel Fools. Its members collect waste oil from fast-food restaurants and run it through

operations. His passion for his mission and contagious confidence should help him “catch the wave” of the biodiesel boom, or even be a force in propelling it to new heights.

“It’s the right time, the right place, and I’m the right person,” he says. “A lot of others who are interested in biodiesel don’t have the motivation to do anything serious. I really connect with this idea. And I am putting all my energy into it.”

College of Engineering faculty are committed to training today’s students to be problem solvers, leaders, and innovators who can succeed in the global marketplace.

“Ravi is a stellar example of the new breed of engineers we are training,” says MSE Professor and Chair Raj Bordia, his research mentor and advisor. “As a student Ravi developed

Year in China reinforces goals

Just before enrolling at the UW, Mikkelsen learned about the educational partnership with Sichuan University. It meant committing to three years of intense Chinese language study, cross-cultural seminars, plunging into research as a freshman, and spending his junior year at Sichuan University, plus taking the usual load of rigorous science, math, and engineering courses.

“I thought it sounded amazing,” Mikkelsen says. As a freshman he joined a team of faculty and graduate students studying ways to improve the efficiency of PEM (polymer-electrolyte-membrane) fuel cells.

“That was it,” Mikkelsen recalls. “I knew right then what I wanted to do with my life — work to improve the environment.” Experiencing the severe air pollution in China and studying the technical, resource, and

“Ravi Mikkelsen is a stellar example of the new breed of engineer we are training. ... He is set to use his education to solve big problems in the areas of energy and the environment.”

a biodiesel processor they built in the garage of a UW alum. The media have taken note. An NBC News program in Tucson ran a spot on June 8. You can see the video at: <http://www.kvoa.com/Global/story.asp?S=3443241>.

Mikkelsen believes his engineering training has prepared him well for the problem-solving and technical aspects of running TruDiesel’s

his technical abilities and leadership skills, and took advantage of rich learning opportunities. He is set to use his education to solve big problems in the areas of energy and the environment.”

Keep an eye out for Ravi Mikkelsen. If you have questions about his biodiesel ventures, you can reach him at: ravi@truediesel.com/. ■



CAMPAIGN UW: CREATING FUTURES

Fellowships Provide Thrust for Recruiting Top Grad Students to Chemical Engineering

With \$8 in his pocket, the clothes on his back, and a BS degree in hand, Jeet Bindra arrived in Seattle on a cold, gray day in September 1969. A research assistantship in chemical engineering drew this native of Varanasi, India, to the UW. Along with the rigors of fluid mechanics, advanced heat transfer, and mathematical modeling, he juggled a job cooking at India House Restaurant to supplement his assistantship income and cover living expenses.

Today Bindra (MS '70) is president of global refining for Chevron. "The University of Washington has been very good to me," Bindra says. "The lessons I learned have been the foundation on which I've built my career, and that enabled me to excel and thrive."

Now he and his wife Janice, also a UW graduate, are helping a new generation of students thrive by establishing the Jagjeet and Janice Bindra Endowed Fellowship. Each year a meritorious graduate student

will receive funding to help cover tuition and other educational or living expenses.

At the Chemical Engineering centennial celebration last fall, Bindra noted that a person must be nimble, quick, smart, aggressive, and globally minded yet locally aware to succeed in a fast-changing global economy. "Those critical skills are difficult to master if a student is not supported with the proper educational foundation," he says.

The Bindras' fellowship, and one established by Pat and Beverly Miller, will give the department significant thrust in the fierce competition to draw top graduate students.

Through the Campaign UW Matching Initiative, the University is boosting both \$100,000 endowments with an additional \$50,000.

"A generous fellowship can be the tie breaker in convincing a heavily recruited student to enroll at the UW," says Eric Stuve, chair of chemical engineering. "We thank



Jeet Bindra spoke last fall to chemical engineering alumni.

the Bindras and Millers for their foresighted generosity."

Pat Miller shares the Bindras' reasons for helping today's students. "I'm grateful to ChemE for giving me the training that has led to a productive and happy life," he notes.

After Miller earned his PhD ('52), he worked for Westinghouse on contracts for an atomic-powered submarine and aircraft carrier.

Miller later ran a family business, The American Distributing Fuel Oil distributorship in Everett. "Now I'm retired and hope this endowment will give similar opportunities to deserving students," Miller says. ■

New Fellowship Endowment Links the UW with Taiwan



At the June 8 reception announcing the new endowment, Dr. Paul B. Liao (right) chats with Ark Chin, an old friend and fellow Civil & Environmental Engineering alumnus. Chin served on the UW Board of Regents from 1998 to 2004.

Paul B. Liao is an environmental engineer whose career spanned the globe. By the time he retired in 2001 as chairman and CEO of Tetra Tech/KCM, he had been responsible for projects in more than 35 countries.

Now Liao is bridging the Pacific Rim and the academic missions of two alma maters by establishing a fellowship endowment linking the University of Washington, where he earned his doctorate in civil and environmental engineering, and National Cheng Kung University (NCKU) in Taiwan, where he received a bachelor's degree in civil and sanitary engineering.

The Dr. and Mrs. Paul B. Liao Endowed Regental Fellowship will primarily support students from NCKU who wish to do graduate work in the UW Department of Civil & Environmental Engineering. The endowment also will support UW students and their advisors in study and research at NCKU and its neighboring science park.

Liao designed innovative systems for water recycling and reuse for aquaculture, aquariums, and fish hatcheries. His work for the Taiwan National Museum of Marine Biology/Aquarium won the Grand Award in the American Council of Engineering Consultants Engineering Excellence Contest. ■

Weyerhaeuser Support Widens Doors to UW

The doors to the UW for students from groups underrepresented in the engineering and science professions have just widened, thanks to a scholarship endowment recently established by the Weyerhaeuser Company Foundation. This fund will generate the first endowed scholarships to the UW targeted for talented students who have participated in Washington MESA (Mathematics, Engineering, Science Achievement) during high school.

MESA's K-12 programs start early to engage African American, Native American, Hispanic students, and females in the excitement of hands-on math and science. Middle and high school students stay on track for college with rigorous classes and encouragement from teachers and mentors who help make connections to college and career. Washington MESA annually serves more than 5000 students and more than 350 teachers in 80 schools statewide.

"Weyerhaeuser has supported MESA since its establishment 23 years ago, and the generous \$250,000 endowment for UW scholarships demonstrates a long-term commitment to providing opportunities for deserving students," says Patricia MacGowan, MESA director. ■



Scholarships could turn these students into UW graduates and engineers of the future.



"I am proud to lead the campaign for UW Engineering. Exciting things are happening in classrooms and labs as a result of private giving. Thanks to the generosity of alumni and friends, we are two-thirds of the way to our goal."

STEVEN R. ROGEL, CHAIR, COE Campaign Executive Committee
Chairman & CEO, Weyerhaeuser Company

Campaign UW Highlights

- "Come Together Washington," a community celebration on October 15, 2004, marked the midpoint of the 8-year Campaign UW goal to raise **\$2 billion** by 2008 to support the University's educational, research, and community missions. One hundred percent of donations supports the work of students and faculty.
- Support for the University topped **\$1.34 billion** by March 31, 2005.
- Nearly **7000 faculty and staff** (current and retired) have shown their enthusiasm with support topping \$5.72 million. **Students give too!** 1,574 members of the 2004 senior class contributed \$34,099.
- The **College of Engineering** is two-thirds of the way to meeting our goal of raising **\$250 million** for student scholarships, fellowships, professorships, capital projects, and programs.

The Power of Matching Funds

Alumni and friends such as the Bindras and the Millers magnified their support for students and faculty in the department of their choice through the Campaign UW Matching Initiative. Such funds augment donor gifts by 50% (1:2). To learn more about the matching initiative, contact Jan Labyak.

We invite you to help create futures in engineering.
Contact Jan Labyak at 206.543.8779 or labyak@engr.washington.edu



Quinton Honored as a Pioneer in Biomaterials and Devices

Wayne Quinton has invented more than 50 medical devices, including a light-weight cardiac treadmill and a cannula system that enabled kidney dialysis, and is credited with coining the term bioengineer. "He was the first bioengineer, not just at the UW, but anywhere," says Yongmin Kim, chair of UW Bioengineering.

While earning his mechanical engineering degree during the 1950s, Quinton ran the UW's Medical Instrument Lab. His collaborations with physicians, such as Dr. Robert

Rushmer, led to the establishment of UW Bioengineering in 1967.

For these accomplishments, Quinton is the inaugural recipient of the Northwest Pioneers of Biomaterials and

Medical Devices Award presented by the UW Engineered Biomaterials (UWEB) Research Center. Dr. Buddy Ratner, UWEB director, bestowed the award at a conference in February. ■



Behind the Scenes at Boeing

Participants on the College of Engineering/UW Alumni Association May 18 tour of the Boeing Everett plant gather in front of a recently completed 777. A highlight of the VIP tour around the factory floor included a visit to the catwalk surrounding a 777 under construction. During this up-close and personal inspection, participants asked the assembly workers questions about the plane. The group also enjoyed lunch and a presentation on the new 787 Dreamliner by David Reese, Boeing government affairs officer and alumnus of UW Aeronautics & Astronautics.

Noteworthy ~ Newsworthy

Don J. Bradley has been named director of Pacific Northwest National Laboratory's Coastal Security Institute in Sequim. A 1973 masters graduate in nuclear engineering, Bradley is a leading authority on radioactive waste management in the former Soviet Union and authored a book on that topic. Earlier in his career he represented the United States at the International Atomic Energy Agency in Vienna.

Amy J. Haugerud, an alumna of Civil & Environmental Engineering (BS '77), was named the 2005 Engineer of the Year by the American Council of Engineering Companies of Washington. Haugerud is president of RoseWater Engineering, Inc., a full-service consulting firm she founded in 1983 when it was rare for a woman to be an engineer, let alone own her own company.

Computer Science & Engineering alumna **Gail Murphy** (PhD '96) has won the first annual Dahl-Nygaard Prize, an award named for software pioneers Ole-Johan Dahl and Kristen Nygaard. Murphy, an associate professor of computer science at the University of British Columbia, will receive the award from the Association Internationale pour les Technologies Objets (AITO) at a conference in Glasgow, Scotland, in July.

Enlightenment, a painting donated to the UW Art Collection by **John and Camille Patha**, enlivens Loew Hall for students, faculty, and staff. John is an alumnus of Aeronautics & Astronautics. Camille, the artist, has UW degrees in fine arts. If you are visiting campus, you can see the painting on the second floor of Loew Hall.

Electrical Engineering alumnus **Donald Wunsch** (PhD '91) has been elected a fellow of the Institute of Electrical and Electronics Engineers (IEEE). He is the Mary K. Finley Missouri Distinguished Professor of Computer Engineering at the University of Missouri-Rolla, where he directs the Applied Computational Intelligence Laboratory. Earlier in his career he was a senior scientist and research engineer in various units at The Boeing Company.

We welcome your news!

Send by email to trend@engr.washington.edu or by mail to:
The Editor, The Trend in Engineering, UW Box 352180, Seattle WA 98195-2180.

Call for Nominations

To honor the achievements and contributions of our alumni and friends, the College of Engineering has established four new annual awards to be given for the first time during the 2005-2006 academic year.

Distinguished Achievement

For alumni who have made outstanding professional contributions to the field of engineering.

Entrepreneurial Excellence

For a graduate who has founded one or more ventures and/or has applied engineering skills and creativity to enrich humanity.

Distinguished Service

For a graduate or friend in recognition of exceptional service to students or faculty, or public service to advance engineering.

Early Career Award

For alumni who have demonstrated exceptional achievement in the first 10 years of their engineering career.

For details and a nomination form, visit the college website in July: <http://www.engr.washington.edu>. To request a form to submit by mail or fax, please call Nancy Anderson at 206.685.2422. The nomination deadline is September 15.

Yum! Family Fun at Open House



CSE alum (BS '83) Kirk Glerum, wife Melissa, daughter Jennifer, and son Roger take a break at the April 23 Open House to indulge in sundaes at Computer Science & Engineering's ice cream social.

25 75 100 Celebrating Milestones



Chemical Engineering • 100 Years
Aeronautics & Astronautics • 75 Years
Technical Communication • 25 Years

100 Years in 2006
Electrical Engineering • Mechanical Engineering

Anniversary celebrations for Chemical Engineering on September 17–18, 2004, and Aeronautics & Astronautics on October 8–9 included presentations (above), visits to research labs (ChemE at top left), anniversary banquets (AA at lower left), and Husky football games.

Technical Communication celebrated its 25th Anniversary with a dinner on September 10, 2004.

JOIN THE CLUB!

► *The College of Engineering Dean's Club*

The Dean's Club is a select group of alumni and friends whose support helps the college achieve its goals of world-class teaching, research, and public service. Donors who contribute \$1000 or more in one year to any area of the college become Dean's Club members. All gifts received during the fiscal year (July 1 to June 30) count toward recognition.

Dean's Club members receive:

- Invitations to special Dean's Club events
- *Dean's Update* — a new biannual report offering an inside view on college happenings and on the latest engineering research
- Coming soon — Dean's Club member portal (password access) on the COE website (<http://www.engr.washington.edu>) — with event announcements and special programming such as video streaming of campus presentations
- Annual recognition in *The Trend in Engineering*

Dean's Club donors make a **fundamental difference** in the quality of our engineering programs. Your commitment and support are important today and for the future.

For information about the Dean's Club and other philanthropic opportunities at the college, please call Danny Geiger at 206.616.1231. **Thank you!**



Civil & Environmental Engineering



Mechanical Engineering

Scenes from Graduation 2005



Bioengineering

◆ Events Calendar ◆

Save the dates for these exciting events!

Watch for details at www.enr.washington.edu/.

2005 Engineering Lecture Series

"Engineering the Unexpected"

A series of Tuesday evening lectures, 7–8 pm in Kane Hall 110, reception 8–8:30 in Walker Ames Room. Watch for program details in the fall *Trend in Engineering*.

November 1 Engineering Disaster Relief

From African famines to the tsunami in Southeast Asia, engineering has a role in the logistics of relief efforts.

November 8 Engineering Answers When Failure Happens

From the World Trade Center collapse to a pipeline fire, an alum's engineering team investigates.

November 15 Engineering Rescue: Robotic Battlefield Medics

Robot pods directed remotely by surgeons will save the lives of injured soldiers.

UWAA/COE Behind the Scenes Engineering Tour of the New Tacoma Narrows Bridge

Friday, October 28

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