

# TREN THE

## IN ENGINEERING

Spring 2004





#### Paul G. Allen Center **Opens to Acclaim**

More than 500 people — alumni, donors, members of the UW community, and friends filled the Microsoft Atrium on October 9 for the dedication of the superb new Paul G. Allen Center for Computer Science & Engineering. Delivering remarks were Paul Allen, Sen. Maria Cantwell, Mayor Greg Nickels, UW Regent Sally Jewell, President Lee Huntsman, Dean Denice Denton, and CSE Prof. Ed Lazowska.

Education and research are in full swing in the spacious laboratories, and CSE faculty and students are thrilled with the facility. Dollar by dollar and brick by brick, the Allen Center was built through the generous support of more than 250 donors (see page 5) whose contributions funded 58% of the construction costs. To take a virtual tour of the Allen Center and to view photos of the dedication events, visit the CSE website at: www.cs.washington.edu/.

## On the Rise: A New Home for Bioengineering

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Seven shovels wielded on August 12 by UW leaders, Sen. Patty Murray, and Rep. Norm Dicks broke ground for the new Bioengineering-Genome Sciences Building. When the \$150million, 265,000-square-foot facility opens in late 2005, two outstanding UW programs will capitalize on increased synergy and state-of-the art science to transform 21st century health care. The Bill & Melinda Gates Foundation contributed \$70 million to the new facility, the largest gift ever to the UW. For more information, visit the Bioengineering website at www. depts.washington.edu/bioe/.



#### **Letter from the Dean**

#### The message behind the money

Before diving into my message for the spring issue of *The Trend*, I want to share big news out of the Pacific Northwest. After a lengthy national search, we have a new president at the University of Washington. Mark Emmert, chancellor of Louisiana State University, a native of Tacoma and a UW alumnus, will officially begin his new role in July. He brings an impressive record of strong

leadership in higher education and securing funding for academic endeavors. We welcome him aboard, and are eager to begin a productive relationship as we continue to build excellence in teaching and research in the College of Engineering.

That brings me to the thrust of this message. In talking with an acquaintance the other day, the topic of funding came up. He mentioned that the College seemed to be doing quite well in that area, and he was right. From 1999 to 2002, overall funding rose from \$84 million to \$162 million, an increase of 94 per-

cent. How, he asked, did we do it? It's a complex question, and may not be the right question. A better one might be "What does it mean?" Answering it demands delving into what most people don't see — the stories behind the money.

To simplify, most of our funding can be divided into three categories: state and institutional, private gifts, and grants and contracts.

Let's start with state and institutional funding, which rose the least, from \$30.2 million to \$34.4 million. But it still rose during one of the worst economic recessions in state history. Our provost, our president, and legislators in Olympia recognize how vital it is to support high-demand fields like engineering, which will directly impact our region's competitiveness and our future.

Next are private gifts, which grew the most, from \$9.1 million to \$32.9 million, a more than three-fold increase. One story behind that rise concerns Steve Kramer, a professor of civil and environmental engineering and a top international authority on soil dynamics during earthquakes. When he received a serious offer from another institution, the private sector rallied. Area engineers didn't want to lose a valuable contributor to their professional community. They donated funds to remodel a space for expansion of Steve's research

program and to accommodate his graduate students. As a result, he stayed. This story isn't unique — other department chairs have similar anecdotes.

On a larger scale, our computer scientists and engineers recently moved into a new \$72 million facility, the Paul G. Allen Center for Computer Science & Engineering. Private donors contributed \$42 million, more than half the cost. Philanthropist and Microsoft co-founder Allen made the naming gift of \$14 million

People in the private sector are giving because they, too, see the importance of what we do for the region, the state, the country, and the world. They want us to be able to keep doing it.

Last, we have grants and contact awards, which rose from \$33.1 million to \$75.5 million. Here are several stories behind that funding:

- A National Institutes of Health Center of Excellence in Genomic Science, the first in the nation to be funded, is focusing on new techniques for doing genome research.
- A National Science Foundation-funded center, also the first of its kind, is exploring how engineering students learn and how best to teach them. The Center for the Advancement of Engineering Education puts the college at the point of a national thrust to find out how to best prepare tomorrow's engineers.
- A National Nanotechnology Infrastructure Network grant, also from the NSF, allies us with other institutions across the country in a \$70 million network.
- A new Federal Aviation Administration Composites Center of Excellence positions our researchers to help build the next generation of high-tech air and spacecraft.

The list could go on. It shows that the large funding agencies know our reputation, have seen our work, studied the results, and like our ideas. The money equals their confidence in us.

So there's no magic involved in the tremendous increase in funding for the College. It stems from great people, great programs, and innovative work. The money simply means that people see the value of what we do and are more than willing to give their support. Our promise back to them is that we will continue to justify their faith in us.

Sincerely,
Denice D. Denton



". . . there's no magic involved in the tremendous increase in funding for the College. It stems from great people, great programs, and innovative work."

# NEV/Snapshots

# Small Science, Big Potential UW wins role in \$70 million national nanotechnology network

The University of Washington is one of 13 major research universities teaming up under a \$70 million federal grant to form the world's largest network dedicated to studying science on the smallest of scales. The National Nanotechnology Infrastructure Network (NNIN) will support research and education in nanoscale science, engineering, and technology. "Being a member of this network is an incredible honor and a great opportunity for the UW," said Viola Vogel, founding director of the UW Center for Nanotechnology.



Viola Vogel, professor of bioengineering

# Want more details?

To read the articles on these pages and other stories, visit

#### Washington Engineer

our new online newsletter at

www.engr.washington. edu/enews/.

Send us your email address and three times per year we'll send you updates about engineering breakthroughs, fascinating research, and what's new at the college.

Send to: enews@ engr.washington.edu/.

#### **New Composites Center Takes Flight**

The College of Engineering recently won funding from the Federal Aviation Administration for a research center that will help build the new Boeing 7E7 airliner and other craft in the coming generation of lightweight, fuel-efficient air and spacecraft. The FAA will contribute as much as \$500,000 a year for three years to the new Composites Center of Excellence. Boeing has made an initial pledge of \$250,000 toward additional UW and private sector funding. The center will tap the skills of researchers in aeronautics, material science, electrical engineering, mechanical engineering, nanotechnogy, and other areas.

# Beware the Blow Dryer? Study of magnetic fields and DNA damage in the news

Two UW bioengineering researchers have captured the attention of the news media and of people around the world. Professor Henry Lai and colleague Narendra Singh have found that exposure to low-level magnetic fields similar to those emitted by such common household devices as blow dryers, electric blankets, and razors appear to damage brain cell DNA in rats.



Department of Aeronautics and Astronautics Chair Adam Bruckner (L) chats with U.S. Senator Maria Cantwell and Professor Kuen Lin at a press conference announcing the new FAA Composites Center of Excellence.

# Alumnus Selected as Next UW President

Mark Emmert, it would seem, has a thing for purple and gold. The Tacoma native has been drawn to those colors since his student days at the UW, where he earned a bachelor's degree in political science. Now the UW Regents

have offered him the presidency, drawing him away from the top job at Louisiana State University, where the school colors are ... purple and gold.

Emmert brings a reputation as an accomplished administrator with a passion for excellence in all endeavors. "Mark Emmert is a dynamic, forward-looking, energetic leader who has the skill, experience, and character to accelerate the University's already considerable momentum," said Board of Regents President Jerry Grinstein. He takes office as the UW's 30<sup>th</sup> president in July. At the news conference announcing his appointment, Emmert noted that he and his wife, DeLaine, "are delighted to be part of the University of Washington family once again."

For more details, visit: www.washington.edu.

# Researcher Explores Adoption of the Internet in Central Asia

It's not surprising that culture, politics, and economics affect Internet adoption in developing nations. Now a technical communication researcher has found that playing computer games has a big role in Uzbekistan and four nearby countries of Central Asia. She reports that Internet cafes are full of young people playing computer games and going online. A \$1.2 million grant from the National



Beth Kolko, associate professor of technical communication

Science Foundation allows Associate Professor Beth Kolko to continue her study of how game playing is the portal to the virtual community of the Web.

#### **Engineering Faculty Carry on an Award-winning Tradition**

Five faculty members have received National Science Foundation Career Awards, carrying on a tradition that has seen 38 career award winners at the College since 1995. Two faculty members have received Sloan fellowships, two have been named Fellows of the American Association of the Advancement of Science, and four have been elected Fellows of the Institute of Electrical and Electronics Engineers. Nine others have received prestigious honors ranging from professional society recognition for excellence in teaching to basic research and outstanding paper awards.

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#### Astronaut a Star in Space and at UW

#### **Dunbar To Be Honored with Top Alumni Award**



Bonnie Dunbar took a UW banner into space on the January 1998 flight of the shuttle Endeavor.

Bonnie J. Dunbar, former NASA astronaut and current associate director for biological sciences and applications at the Johnson Space Center, is the University's 2004 *Alumnus Summa Laude Dignatus*, to be presented in June. She logged more than 50 days in space over five flights between 1985 and 1998, including shuttle missions to the Mir Space Station.

Dunbar earned B.S. and M.S. degrees in ceramic engineering in 1971 and 1975, respectively, and a Ph.D. in mechanical/biomedical engineering from the University of Houston in 1983. She has maintained strong ties to the UW over the past two decades and has given time to the College's Women in Science and Engineering and the Mathematics Engineering Science Achievement programs. She is an inspirational speaker to student groups. A member of the Advisory Committee of the Department of Materials Science and Engineering, she received MSE's Distinguished Service Award in 1999 and the College's 1990 Outstanding Alumni Award.

With Dunbar's selection, three of the past five winners of the ASLD award have been alumni of the College of Engineering. Donald Baker (EE '60), a pioneer in ultrasound technology, won in 2002, and Joseph Sutter (AA '43), often referred to as the "Father of the 747," won in 2001.

#### Thank you, Bill Kipple!

Could studying mechanical engineering be as much fun as exploring intriguing places like East Africa, Afghanistan, and India? Yes, indeed, in the eyes of William Fred Kipple (BSME '46). In looking back over his nearly nine decades, Kipple says that his two greatest experiences have been traveling the world and his student years in Mechanical Engineering. "School was fun and I learned how to think and solve problems, skills I put to use all my life," he related. Memories still sharp 60 years later include building an air compressor in machine shop class. He put it to good use in his home construction business, and it still works!

Kipple holds his educational experience in such high regard that he will convey much of his estate to ME upon his death through a planned gift that will create an endowed scholarship fund. "It's time for me to give back to the department and to future students," Kipple said. He also contributes to his North Seattle retirement complex as "Mr. Fix It." Residents bring him toasters, radios, and other small items gone bad. It seems you can't take the shop, or the Dawg, out of the man.

For information on planned giving, contact: Albert Thurmond, 206-221-5671, thurmond@u.washington.edu/.



Bill Kipple (R), with Bruce Adee, Mechanical Engineering chair, and ME students.



#### **AA Grad Has a Mission on the Red Planet**

Aeronautics and Astronautics grad Rob Glover (M.S. '98) has a hand in the amazing success of the Spirit and Opportunity rovers now analyzing rocks on the surface of Mars. "I was watching a NOVA special on the Mars explorations and caught sight of him in Mission Control at JPL," said AA Chair Adam Bruckner, an expert on spacecraft design and propulsion systems.

A JPL descent and landing systems engineer, Grover described the landing night experience in mission operations as "an exciting, terrifying, and joyful night, all rolled into one," and an opportunity to be part of history. "It is not every job where Al Gore and Arnold Schwarzenegger stop in to shake your hand and the president phones his congratulations," Grover said. "Those of us who have the honor of carrying out the missions of our country know how lucky we are to find ourselves part of the team."

He looks back on his UW days as time well spent learning and honing his abilities, noting that "The transition to applying my skills both in industry and at JPL was nearly seamless." Bruckner is justly proud of the caliber of his AA students, four of whom have worked on various Mars projects. "Our graduates are among the best in the world, second to none," he said.

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#### whose extraordinary commitment and generosity helped open the doors

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Paul G. Allen

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Sincerely, Denice D. Denton, Dean

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#### Alumni ~ We'd love to hear from you!

The Trend would like to include a page or two of alumni news briefs. Let us know about your work, your honors, and anything of interest about your life and activities — or tell us about other engineering alumni who should be recognized.

We will print as many updates as space allows.

Send by email to: trend@engr.washington.edu or mail to: Editor, The Trend, at the UW College of Engineering.

# Engineering ▼ E V E N T S ▼

# **Engineering Toward a Better Tomorrow College of Engineering Open House**

Friday, April 30, 9 am - 3 pm; Saturday, May 1, 10 am - 2 pm

More than 100 exhibits and hands-on activities for students, teachers, parents, and the public. Free! For information: www.engr.washington.edu/openhouse/ or call 206-685-1785.

#### Behind-the-Scenes Engineering at Safeco Field

★ Special tour for ALUMNI and their families ★

Saturday, August 21 10–11:30 am Lunch follows at Pyramid Alehouse

Jon Magnusson ('75 BSCE), chairman of Skilling Ward Magnusson Barkshire, structural engineers for Safeco Field, will lead the tour. General Admission \$25, UWAA member \$20, children (to age 12) \$10. Registration begins July 10, www.UWalum.com/. For information, call the Alumni Association at 206-543-0540.

#### 2004 College of Engineering Lecture Series

Mark your calendars for October 5, October 26, and November 9. Watch for details in the summer issue of *The Trend*.

#### **Chemical Engineering Celebrates 100 Years!**

For information on 2004 centennial events, contact: Jan Labyak, 206-543-8779, labyak@engr.washington.edu/.

#### **Aeronautics and Astronautics Celebrates 75 Years!**

For information on 2004 celebration events, contact: Paul Julin, 206-685-1927, julin@engr.washington.edu/.

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