

UW COLLEGE OF ENGINEERING

2010 Community of Innovators Awards

June 1, 2010

Don James Center
at Husky Stadium

W COLLEGE OF ENGINEERING
UNIVERSITY of WASHINGTON



COMMUNITY OF
INNOVATORS
AWARDS

Dear College of Engineering Community,

Thank you for joining us today for the 2010 College of Engineering Community of Innovators Awards ceremony. This ceremony not only recognizes the recipients of the Innovators Awards, but also the Dean's Medalists, The Graduate School Medalist, and the UW Center for Commercialization, all significant contributors to the achievement and excellence of our community.

The College of Engineering Dean's Medal for Academic Excellence acknowledges students' achievement based on academic performance, research and industry experience, campus and community involvement, and faculty recommendation letters. This year, a number of excellent nomination packages were submitted and it was extremely difficult to award only two individuals. Both of our award recipients are outstanding students who have bright futures in engineering.

We acknowledge The Graduate School Medalist in our ceremony this year because we are fortunate that the recipient is a member of the College of Engineering Community. This medal recognizes "scholar-citizens," whose academic expertise and social awareness are integrated in a way that demonstrates active civic engagement and a capacity to promote political, cultural, and social change.

Over fifty percent of technology transfer activities at the UW are related to the College of Engineering. Given this, it seems only appropriate that we team with the UW Center for Commercialization to acknowledge the great contributions from College of Engineering faculty and students.

Recognizing excellence is vital for the college, especially in these difficult times. Today we acknowledge and celebrate faculty, staff, and students who are dedicated to our mission to achieve and maintain the highest levels of excellence in higher education, addressing the world's most pressing issues through research, and launching the careers of first-rate, 21st century engineers and leaders.

Thank you for your continued support and commitment to the College of Engineering.

Sincerely,



Matthew O'Donnell
Frank and Julie Jungers Dean of Engineering

◆ Dean's Medalists

*Presented by: Hank Levy, Chair, Department of Computer Science & Engineering
Richard Storch, Chair, Department of Industrial & Systems Engineering
Leung Tsang, Chair, Department of Electrical Engineering*

◆ The Graduate School Medal

Presented by: Gerald Baldasty, Vice Provost and Dean of the The Graduate School

◆ UW Center for Commercialization

Presenter: Linden Rhoads, Vice Provost

◆ Presentation of Innovator's Awards

Staff Innovator: Classified

Presented by: Tom Sparks, Financial Administrator

Staff Innovator: Professional

Presented by: Lisa Drechsler, Human Resources Administrator

Student Innovator: Research

Presented by: Mari Ostendorf, Associate Dean of Research and Graduate Studies

Student Innovator: Teaching

Presented by: Eve Riskin, Associate Dean of Academic Affairs

Faculty Innovator: Research

Presented by: Mari Ostendorf, Associate Dean of Research and Graduate Studies

Faculty Innovator: Teaching and Learning

Presented by: Dave Castner, Associate Dean of Infrastructure

Faculty Innovator: Junior

Presented by: Matt O'Donnell, Dean

◆ Reception

A special "Thank you!" is extended to those students, staff, and faculty who nominated the many candidates for this valuable recognition. In addition, we would like to extend our appreciation to the committee members who selected this year's recipients from the many excellent nominations.

Nominees for the 2010 Community of Innovators Awards

STAFF

Staff Innovator: Classified

Wanwisa Kisalang, ME
 *Carol Matsumoto, CSE
 Pam Pogemiller, Dean's Office
 Diane Ronsano, ChemE
 Laura Wright, Bioe

Staff Innovator: Professional

*Sue Chen, ME
 Dave Drischell, ChemE
 Tracy Erbeck, CSE
 Michael Glidden, Dean's Office
 Mary Heusner, Dean's Office
 Julianna Jones, HCDE
 Andrei Stabrovski, EE
 Aileen Trilles, Dean's Office

STUDENTS

Student Innovator: Research

*Jon Froehlich, CSE
 Grant Marchelli, ME
 Michael Nash, Bioe

Student Innovator: Teaching

Tsz Kin (Marco) Au, EE
 Brian Hutchinson, EE
 Victoria Kirst, CSE
 *Leo Lam, EE
 Renuka Prabhakar, ME

FACULTY

Faculty Innovator: Research

*François Baneyx, ChemE
 Dawn Lehman, CEE
 Mamidala Ramulu, ME
 Eric Seibel, ME
 Mark Zachry, HCDE

Faculty Innovator: Teaching and Learning

*John Berg, ChemE
 Uy-Loi Ly, AA
 Barbara Mones, CSE
 John Stanton, CEE
 Marty Stepp, CSE
 Jennifer Turns, HCDE

Faculty Innovator: Junior

Jeffrey Berman, CEE
 Jae-Hyun Chung, ME
 *Xiaohu Gao, Bioe
 *Christine Luscombe, MSE
 Brian Otis, EE
 Danilo Pozzo, ChemE

**Indicates Award Recipients*

2010 Dean's Medalists



Eric Arendt

Computer Science & Engineering and Electrical Engineering

Eric was born in California, but lived in a number of places while growing up. His family moved to Ethiopia when he was ten, living there for the next four years. On their return to the U.S., his family spent one more year in California before moving to Spokane, Washington. He graduated from Mead High School in 2004.

When he moved to Seattle to begin studying at the University of Washington, Eric originally intended to major in the

humanities, specifically in English literature. However, after taking introductory courses in mathematics and computer science, he discovered a passion for engineering. He decided to pursue a degree in electrical engineering as a sophomore, and as a junior decided to add an additional degree in computer science and an African studies minor.

During his junior and senior year, Eric served as activities coordinator and president of the HKN Electrical Engineering Honor Society. He also spent three years working as a teaching assistant in the Department of Computer Science & Engineering, teaching classes and assisting in managing the undergraduate teaching assistant staff.

During his senior year, Eric was awarded the Bonderman Travel Fellowship by the University Honors Program. Over the 2008-2009 academic year, Eric spent nine months traveling solo through Turkey, Eastern Europe, Russia, Mongolia, China, India, Ethiopia, Israel, and Italy to study indigenous Christian churches, returning in Autumn 2009 to finish his studies.

While he has not made any concrete plans following his graduation, Eric plans to go into the computer software industry and hopes to return to school for graduate studies in the future.



Shan (Susie) Lu

Industrial & Systems Engineering

Susie is graduating with a bachelor of science in industrial & systems engineering and a bachelor of arts in painting and drawing. She believes the combination of art and engineering has nurtured an essential balance within her life. Through engineering, Susie has had the opportunity to work with many students, faculty, and staff, as well as several companies including, The Boeing Company, Avana Inc., and Starbucks Coffee Company. One of her favorite experiences at UW

was the Honors Rome Program; she highly recommends students pursue study abroad opportunities. In the fall Susie will be heading to California to work as a consultant in Accenture's Technology Labs. She attributes much of her success to her parents' support and sense of humor.

The Graduate School Medal 2010



Anna Cavender

Computer Science & Engineering

Anna Cavender is a Ph.D. candidate in computer science and engineering at the University of Washington. She graduated with a B.S. in computer and information science from the University of Oregon in 2004. Her research interests lie in human-computer interaction, specifically accessible technology for people with disabilities. She was the recipient of the Computing Research Association (CRA) Outstanding Undergraduate Award in 2004

and is a National Science Foundation (NSF) Fellow.

She has worked on projects that enable children with mobility impairments to draw pictures with only their eye movements (EyeDraw) and has studied web accessibility for blind web users (WebInsight). She is currently working on projects that encourage communication and educational access for deaf and hard of hearing students (specifically, MobileASL for enabling real-time sign language video over cell phones; ASL-STEM Forum for on-line video discussion about signing for Science, Technology, Engineering, and Math; and ClassInFocus to provide better visual access to mainstream classrooms including remote interpreting and captioning resources). Her work on MobileASL and ClassInFocus has earned two best student paper awards at ACM's SIGACCESS conference (ASSETS).

Anna is also a staff member in UW's Summer Academy for Advancing Deaf and Hard of Hearing in Computing, a 9-week summer enrichment program for deaf and hard of hearing high school and first- and second- year college students. The program allows students to take introductory computing courses and learn about the field of computer science.

A New Approach to Commercializing University Research

Technologies created at the University of Washington can change the world, but only if they are embraced by thousands or millions of people. To this end, our office has been exploring models to go beyond simply transferring UW technology into industry. The launch of our new name, the Center for Commercialization, signals the university's commitment to broaden and deepen the services we offer to facilitate commercial opportunities for our researchers.

Our vision is bold. We are deepening the working relationships of our innovation ecosystem, both within and outside the university. We have enhanced our level of service at every stage of commercialization and we have dramatically increased the support we offer during company formation.

We encourage College of Engineering researchers to put their innovations into everyday use. We look forward to working with you to make this happen.

Featured Commercialization Opportunities from COE Research

MATERIALS SCIENCE & ENGINEERING

New material extends the life of touch screen devices

Alex Jen, professor and chair of the Department of Materials Science & Engineering, is developing new technology to extend the durability of touch screens. Jen and his team's transparent organic electrode film would replace indium tin oxide (ITO), a brittle and expensive material now used in about 90 percent of touch screens, flat panel displays and TVs, and portable electronics. His hybrid electrode unites conductive organic polymer with a metal grid of silver or copper.

In 2009, the Center for Commercialization (C4C) granted Jen a Commercialization Gap Fund award to conduct a market analysis. The C4C has filed patent applications, connected Jen with potential investors and manufacturers, and is guiding establishment of a spin-off company.

"The UW Center for Commercialization has been very helpful in providing seed funding and connecting us with the business world, especially helping us to identify potential target markets and advisors who can help steer the company. Technology Manager Bolong Cao was critical in putting together a team of advisors that has enabled us to move from research to start-up. The team identified the first application among the many potential directions and brought clarity to the strategy," Jen said.

MECHANICAL ENGINEERING

UW start-up company MicroGREEN Polymers takes recycling to a new level

MicroGREEN Polymers is on a mission to create a greener cup for your coffee and more environmentally friendly containers for your food. The patented technology, created in the lab of Department of Mechanical Engineering associate professor Vipin Kumar, creates billions of microcellular bubbles in solid thermoplastics to produce an expanded material that uses only about 20 percent of the original source plastic.

With support from C4C and additional investor support, co-founder and CTO Krishna Nadella, who helped Professor Kumar refine the solid-state microcellular foaming process, has guided the company through its start-up phase. Important milestones include technology patent protection in the US, Europe, and Japan, and joint development agreements with electronics, defense, and consumer package goods companies. C4C Vice Provost Linden Rhoads introduced the company to Atlas Accelerator, which helped MicroGREEN close its most recent round of funding.

"The UW Center for Commercialization has had a big hand in getting us to this point and continues to add value and encouragement even after a license has been signed." Nadella said. "And a portion of the royalties paid to UW go back to fund continuing research by Vipin Kumar and his students."

Staff Innovator: Classified



Carol Matsumoto

Department of Computer Science & Engineering

Carol Matsumoto is “the behind the scenes person who everyone in the Department of Computer Science & Engineering relies on.” She “often goes the extra mile, over and beyond what is required, or necessary, to be thorough and to do her job well.” In her role as a budget/fiscal analyst, she developed a system to manage the graduate student quarterly appointment process for over 200 graduate students. As part of this system, she created a web page with templates, instructions, and reference information that helps the graduate program advisor, payroll manager, and the grant

coordinators. These tools have streamlined the entire process and have cut down on paperwork and redundancy. Carol also works part-time as the editorial assistant for the Association for Computing Machinery’s (ACM) Transactions on Software Engineering and Methodology (TOSEM) editorial board, of which professor and graduate program coordinator David Notkin serves as the editor-in-chief. She has been recognized by the board for her “reliability, high quality of work, follow-through, initiative, integrity, willingness to tackle tough problems, and her ability to be persistent in a very pleasant way when action is important.” Carol “eagerly takes on new challenges and is always ready to pitch in and do what needs to be done.” Her “competence, professionalism, and calm demeanor impact all of those around her on a daily basis.”

Staff Innovator: Professional



Sue Chen

Department of Mechanical Engineering

Sue Chen, administrator for the Department of Mechanical Engineering, is “one of the most driven, high energy, and effective staff members in the department.” When something is wrong or needs attention, “she is the person that everyone goes to for assistance or to be pointed in the right direction.” If something needs attending to, Sue makes it happen in an “efficient and effective manner.” She routinely handles “mini-emergencies, day or night, promptly, professionally, and cheerfully.” There are many examples of Sue going beyond the call of duty. Some of these

include driving a newly hired faculty member around Seattle on a weekend to help start their housing search; being a listening ear and support system for a struggling student; and personally walking a new faculty member around campus to get a UW ID, U-Pass, complete benefits enrollment, and even open a bank account. These are just a few examples of how she goes out of her way to help others. Sue is the heart of the department’s staff and is always looking for training opportunities to allow the employees to grow and gain additional skills. She is very careful to couple this training with new responsibilities for the employee. Sue has also cross-trained some of the front office staff and rotates job assignments among these employees as a way to minimize boredom and create a well-trained group who can fill in for each other when necessary. Anyone who comes in contact with Sue “immediately recognizes her as a very special person.”

Student Innovator: Research



Jon Froehlich

Department of Computer Science & Engineering

Jon Froehlich, research assistant in the Department of Computer Science & Engineering, has “positioned himself as one of the leading researchers in the field of environmental sensing.” In his research, Jon looks at studying, building, and deploying technology for high value and socially meaningful applications. He is well known in the research community for building the MyExperience toolkit, which enables researchers to easily study human behavior in the field using a mobile device. More recently, he has focused on building low-cost sensing systems for water in

the home (HydroSense) and studying effective methods to convey water usage information to people in a way that encourages conservation behaviors. This work has been featured in a variety of high level media outlets, received a number of clean-tech awards, and was recently licensed for commercialization with expected licensing and royalty fees to reach \$15M. Recently, three of Jon’s research papers have been nominated for best paper awards at top-tier computer science conferences. Jon possesses “a rare mix of extremely strong technical skills, good design aesthetics, a deep grasp of human-computer interaction and environmental psychology, and an entrepreneurial spirit.” His work “has helped to put UW on the map for research in environmental behavior change and sustainability sensing.”

Student Innovator: Teaching



Leo Lam

Department of Electrical Engineering

Described as “an energetic person, genuinely interested in supporting his students and fellow TAs,” Leo Lam has earned a reputation as an exemplary teaching assistant (TA) in the Department of Electrical Engineering. Leo has a remarkable record as both a TA and as an instructor, typically receiving student ratings comparable to those of some of the best faculty instructors. He has been the TA for almost all of the under-graduate level analog circuit classes and has been the instructor for four of the department’s most demanding courses. Student comments indicate outstanding

content delivery, personal attention to all students in the class, and a conveyance of the pleasure and responsibilities of the engineering profession. Leo is the model that the best TAs try to emulate and he was the department’s prototype for the lead TA position, with many of his suggestions significantly shaping the position. As lead TA, Leo established the syllabus, wrote the first formal course description, and taught the TA seminar. He has also created a weekly e-newsletter called tEEch to update current TAs with relevant news, reminders, etc. According to one of Leo’s students and fellow TAs, “Leo’s teaching feels truly focused on the students, captivating them to the materials with interaction, an invitation to inquire, and discussion. He actively engages us to contribute our own ideas and makes sure that everyone gets involved.”

Faculty Innovator: Research



François Baneyx

Department of Chemical Engineering

François Baneyx, professor in the Department of Chemical Engineering, has great expertise in both chemical engineering and microbiology. His research is "at the forefront of what both the department and college want to accomplish in molecular engineering." Professor Baneyx's focus is on protein engineering, folding, expression, structure-function relationship, genetic engineering of cellular pathways, and in the use of these tools and techniques in the bionanotechnology arena.

François has improved the campus research climate through his roles as acting director for the Center for Nanotechnology, site director for the NSF-supported National Nanotechnology Infrastructure Network, and co-director of the Genetically Engineered Materials Science and Engineering Center. At the Center for Nanotechnology, Professor Baneyx has written and been awarded many grants to expand the center's available technologies. With this money, the center has been able to purchase a transmission electron microscope, an atomic layer deposition tool, a scanning probe microscope, as well as many other important pieces of equipment. François is always looking for new ways to apply his research knowledge and his lab was recently awarded a seed grant from the Gates Foundation to "apply their unique expertise to the problem of creating inexpensive, stable, and effective vaccines." Professor Baneyx is "constantly expanding his knowledge into new areas and blending traditional disciplines, which make his lab a unique and exciting place to do research."

Faculty Innovator: Teaching and Learning



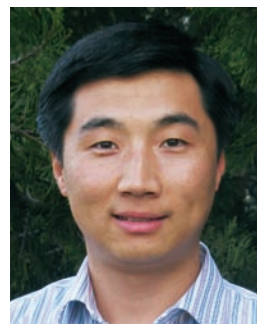
John Berg

Department of Chemical Engineering

John Berg, professor in the Department of Chemical Engineering, is "truly a master educator" with an "unmatched commitment to building a comprehensive teaching and learning experience for students." Professor Berg is widely recognized for developing Chem E 455, a laboratory/lecture class on surface and colloid science, which, at the time, was one of just a few courses of its kind in the U.S. This course initiated the transformation of the chemical engineering undergraduate experience to a new curriculum that emphasizes molecular and nanoscale concepts in addition to

the macroscopic continuum approach. Additionally, John used this course as a vehicle for undergraduate and graduate student internships and the writing of a textbook. Internships have been created, specifically for students who have taken this course, at well known companies such as Proctor & Gamble, Lyondell Corp., Hewlett-Packard, etc. These internship opportunities have come about as a result of Professor Berg's thoughtful tailoring of the course material to address fundamental issues important to industry and his contacts in those industries. Although his text book, "An Introduction to Interfaces and Colloids: the Bridge to Nanoscience", was just published in January 2010, it has already been adopted by Washington State University, University of Pennsylvania, and Duke University. Professor Berg has touched the lives of countless students and many chemical engineering alumni view him as the most influential person in their education at the UW.

Faculty Innovator: Junior



Xiaohu Gao

Department of Bioengineering

Xiaohu Gao, assistant professor in the Department of Bioengineering, is "driven by both his passion for research and his strong commitment to training the next generation of researchers." His research group is renowned for their work in molecular engineering, nanotechnology, molecular imaging, and drug delivery. Professor Gao is one of the key inventors of an optical barcoding technology using multicolor, quantum dot nanoparticles for massive and parallel analysis of genes, proteins, and cells. This technique harnesses the special optical properties of nanomaterials,

using both color and intensity to allow for the tagging of millions of proteins and genes at once, compared with the 100 tags possible using current technology. In the past four years, Xiaohu has received three R01 awards from the NIH (2 as PI and 1 as co-PI). This is a particularly significant achievement considering both the current economic climate and the fact that he is still in the early stages of his career. Professor Gao is deeply involved in working with and mentoring undergraduate and graduate students, as well as postdoctoral researchers. Over the past few years, Xiaohu has revamped the bioengineering seminar series and developed two new courses for the department. As one nominator stated, "he has a wonderful, original approach to solving problems, and I consider him to be one of the most creative young faculty that I have encountered recently, both here and at other universities around the world."

Faculty Innovator: Junior



Christine Luscombe

Department of Materials Science & Engineering

Christine Luscombe, assistant professor in the Department of Materials Science & Engineering, is "recognized internationally as a leader in the areas of polymer design and synthesis for organic photovoltaic and organic thin film transistors." In her work, she is developing materials for use in organic photovoltaic (OPV) and organic-inorganic hybrid devices that hold significant advantages over current inorganic-based technology. The ease of fabrication and potential use in a wide variety of applications make OPVs an attractive target for next-generation solar-energy technology.

While Professor Luscombe's lab works on developing these new materials, they also emphasize new methods to create these materials. Additionally, Christine has been "successful in creating a classroom environment where students are encouraged to think deeply about the subject matter presented" and she is consistently "innovating new approaches in her teaching to explore the best ways to communicate ideas to students." Professor Luscombe "possesses all the traits one would expect of an excellent assistant professor- she is bright, creative, hard-working, highly motivated, well-organized, personable, and articulate." Christine is also seen as "a complete educator- she is an internationally recognized scientific leader, has developed a well-funded and highly productive research group, is focused on student learning, and has made significant contributions to enhancing the reputation and image of the department."