University of Washington
Computer Science & Engineering

Recognizing Faculty Achievement and Saluting Donors and Friends

Spring 2006

UNIVERSITY OF WASHINGTON
COLLEGE *of* ENGINEERING
A Community of Innovators

Recognizing Faculty Achievement and Saluting Donors and Friends

Henry M. Levy, *Wissner-Slivka Chair*
Incoming Department Chair

David Notkin
Awarded the Frank & Wilma Bradley Endowed Chair

Gaetano Borriello
Awarded the Jerre D. Noe Endowed Professorship

Steven D. Gribble
Awarded the Torode Family
Endowed Career Development Professorship

Steven M. Seitz
Awarded the Short-Dooley
Endowed Career Development Professorship

Susan Eggers, *Microsoft Professor*
Elected to the National Academy of Engineering

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The College of Engineering officially welcomes Matthew O'Donnell as dean on September 1.

Outstanding engineering programs and the people who lead them expect excellence. That expectation leads to innovations that radically improve our world and to new engineers who dare to change the world around them.

UW Computer Science & Engineering has created such a culture of excellence. We see it in the achievements of faculty members honored this spring. We also see it in the impressive professional accomplishments of the alumni who perpetuate that culture by so generously giving back to CSE.

As incoming dean, I look forward to meeting all of CSE's faculty, students, staff, alumni, and community friends. I need to hear your ideas because a culture of excellence celebrates achievements while at the same time mapping the next goals.

As the new dean I'm also acutely aware of resource constraints. That's why the endowed faculty positions — human capital — are so important.

I salute CSE's exceptional faculty honorees and wholeheartedly thank our loyal and generous alumni and friends.

Matthew O'Donnell

Frank and Julie Jungers Dean of Engineering

Chair, Computer Science & Engineering

Hank Levy, the Wissner-Slivka Chair in Computer Science & Engineering, became the department's seventh chair in April 2006.

Levy's research involves operating systems, computer architecture, distributed computing, and the Web. His publications include two books and 11 best-paper award winners from top systems conferences. With his UW colleagues, he invented Simultaneous Multithreading, which is used in the Intel Pentium-4 ("Hyperthreading") and IBM Power-5 CPUs. Levy is a Fellow of the ACM and the IEEE, and recipient of a Fulbright Research Scholar Award. He was closely involved in design and construction of the Paul G. Allen Center for Computer Science & Engineering, and is curator for the building's UW-focused art collection.

Levy assumes the leadership of a program that is ranked among the top ten in the nation today, active in most of the principal areas of the field, and engaged in a broad range of interdisciplinary initiatives. UW Computer Science & Engineering includes some 40 faculty members, 40 staff members, 275 graduate students (150 in the doctoral program and 125 in the Professional Masters Program), and 450 undergraduate majors. CSE is privileged to belong to one of the nation's leading research universities, located in a national and international technology center situated in the midst of the beauty and diversity of the Pacific Northwest. CSE is housed in the new Paul G. Allen Center for Computer Science & Engineering at the heart of the UW campus.
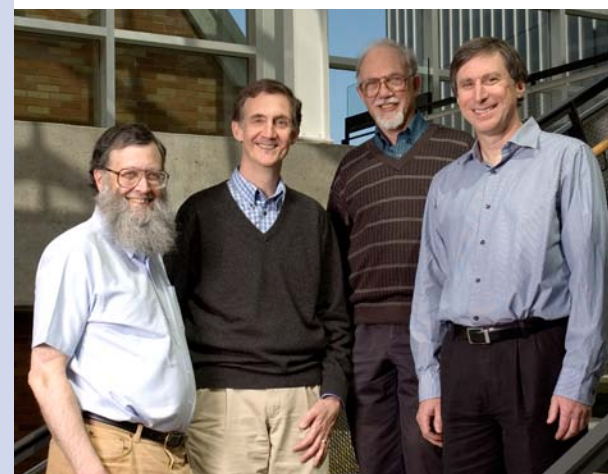
Chairs of CSE since 1988:
L-R: David Notkin, Ed Lazowska, Jean-Loup Baer, and Hank Levy

David Notkin

Frank & Wilma Bradley Endowed Chair in Computer Science & Engineering

David Notkin joined the faculty of UW Computer Science & Engineering in 1984, after receiving an Sc.B. in computer science from Brown University and a Ph.D. from Carnegie Mellon University. He served as chair of UW CSE from 2001–2006. His many research and education contributions to software engineering focus on understanding why software is hard and expensive to change and on how to reduce those difficulties.

Notkin has supervised or co-supervised 17 doctoral students. They hold positions at universities across the nation including MIT, Carnegie Mellon, and University of California–San Diego, and at companies such as Apple, Cray, Intel, and Microsoft. Notkin is justly proud of his students. Two, William Chan and Mike Ernst, received honorable mentions in the 2000 ACM Doctoral Dissertation Award competition. Four of his students — Ernst, Gail Murphy, Vibha Sazawal, and Kevin Sullivan — hold named positions intended for outstanding junior and mid-career faculty.

As a graduate student under Nico Habermann, Notkin was one of the primary drivers of the Gandalf project, one of the first syntax-based programming environments. Glimmers of this work can be seen in modern software development environments such as Eclipse and Visual Studio.

Notkin has held visiting faculty positions at Tokyo Institute of Technology and Osaka University and was a visiting researcher at IBM's Haifa Research Laboratory. He received an NSF Presidential Young Investigator Award in 1988 and was named an ACM Fellow in 1998. In 2000, he was honored with the Marsha L. Landolt University of Washington Distinguished Graduate Mentor Award. He has been an associate editor of the *ACM Transactions on Software Engineering and Methodology* and of *IEEE Transactions on Software Engineering*. He was program co-chair for the 17th International Conference on Software Engineering and program chair for the 1st ACM SIGSOFT Symposium on the Foundations of Software Engineering. Notkin chaired ACM's Special Interest Group on Software Engineering from 1997–2001 and now serves on the board of the Computing Research Association.
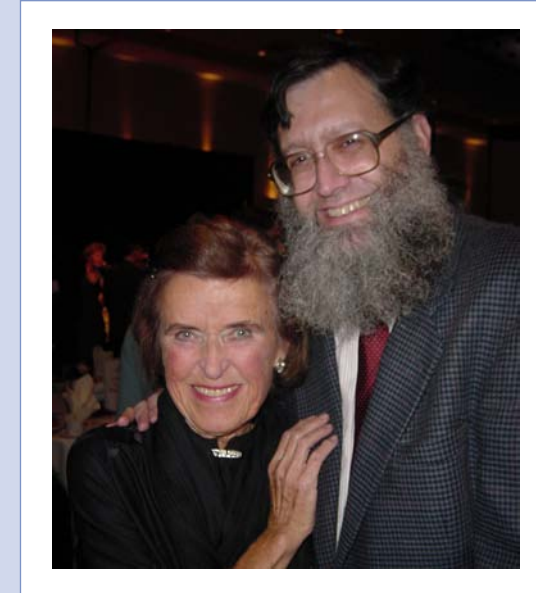
WILMA BRADLEY AND DAVID NOTKIN

A special friend of the University of Washington, Wilma Bradley established the Frank & Wilma Bradley Endowed Chair in Computer Science & Engineering to attract and retain outstanding faculty. The chair honors her late husband, Frank, who led a varied career in the U.S. Army, including service in Korea and participation as an Army observer with the U.S. Navy expedition to the South Pole in preparation for the International Geophysical Year in 1957. The Bradleys met in Europe when both were working for NATO — she as an interpreter for the American Forces in Germany, and he as a liaison officer. Upon his retirement in Seattle in 1964, the Bradleys became involved in real estate investment and property management. Wilma Bradley continues to manage her investments and also volunteers for UNICEF, is a patron of the arts, is active in several local clubs, and continues a keen pursuit of knowledge and interest in science and technology by attending many University lectures and functions.

Gaetano Borriello

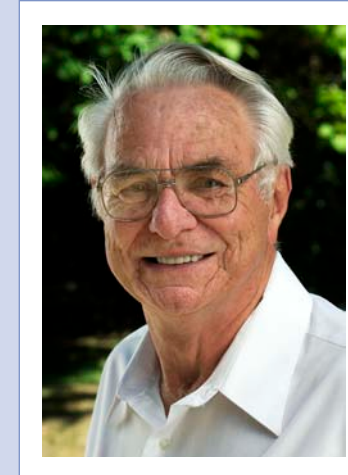### Jerre D. Noe Endowed Professorship in Computer Science & Engineering

Professor Gaetano Borriello's career has followed a trajectory from custom integrated circuit design, through computer-aided design, development of new architectures for reconfigurable hardware, tools for developing complex embedded systems, and most recently, to designing new devices and applications to support ubiquitous computing.

Borriello was a member of the research staff at Xerox's Palo Alto Research Center while earning an M.S. in electrical engineering from Stanford University and a Ph.D. in computer science from the University of California–Berkeley. He was a major contributor to the team that developed the first fully integrated Ethernet controller. He joined the University of Washington faculty in 1988 and, together with Carl Ebeling, led the development of the computer engineering program after CSE's move to the College of Engineering. Together they also shared a UW Distinguished Teaching Award in 1995.

Borriello is known primarily for his work in automatic synthesis of digital circuits and embedded systems. He received a Fulbright Research Scholar Award at the Scuola Superiore Sant'Anna in Pisa, Italy. More recently, he was principal investigator for the Portolano Expedition, a DARPA-sponsored investigation on invisible computing. From 2001 to 2003 Borriello took a partial leave from the UW to found and direct Intel Research Seattle, which has matured into one of the premier laboratories in the world for ubiquitous computing research.

Borriello's current research interests focus on location-based systems, sensor-based inferencing, and tagging objects with passive and active tags. He was a key contributor to a National Research Council study on networked systems of embedded computers. He is co-author of a leading textbook titled *Contemporary Logic Design*.

JERRE D. NOE

University of Washington Computer Science & Engineering is one of Jerre Noe's many legacies. Another is the endowed professorship established in his honor.

Recruited to the UW in 1968, Noe guided the Computer Science Group to departmental status and served as chair until 1976. He then directed the Eden Project, the first award in the National Science Foundation's Coordinated Experimental Research program. This project was key to establishing UW CSE as one of the strongest computer systems research groups, and one of the top computer science programs, in the world.

Educated in electrical engineering at the University of California–Berkeley and Stanford, Noe led the Stanford Research Institute technical team for the ERMA project, which first computerized banking in the 1950s for Bank of America. This remarkable engineering achievement revolutionized the world banking system and made the automation of checking accounts practical and reliable.

Noe retired from the CSE faculty in 1989, but remained active in the life of the department until passing away in November 2005 at the age of 82.

Steven D. Gribble

Torode Family Endowed Career Development Professorship in Computer Science & Engineering

Steve Gribble is an associate professor whose research encompasses many facets of computer systems design, including scalable Internet infrastructure, operating systems, virtual machine monitors, security, content distribution, and mobile computing.

In the Denali project, Gribble and his students developed a technique called paravirtualization for implementing high-performance virtual machine monitors. Denali has influenced several commercial platforms such as VMware and Xen. Together with Hank Levy and students, he conducted the first large-scale, rigorous studies of peer-to-peer file-sharing systems and their workloads. The publications from this work were among the top-cited articles in computer science in 2002 and 2003. Most recently, Gribble and his colleagues have been tackling emerging Web-borne security threats such as drive-by download attacks and spyware.

Gribble joined the CSE faculty in November of 2000 after receiving his B.S. in computer science and physics from the University of British Columbia and his M.S. and Ph.D. from the University of California–Berkeley. He was a co-founder of ProxiNet, Inc., which was acquired by PumaTech. Steve has published over 45 articles on computer systems, and is a recipient of the Alfred P. Sloan Research Fellowship and the National Science Foundation CAREER Award. He is an avid cyclist, adventure racer, and triathlete, and has competed in several marathons and Ironman distance races.

JOHN AND PATTI TORODE

John and Patti Torode strongly believe that outstanding faculty create opportunity at major research universities. They established the Torode Family Endowed Career Development Professorship to recognize, reward, and retain exceptional mid-career faculty in Computer Science & Engineering.

John entered graduate school at the University of Washington after receiving his B.S. in physics from MIT. At UW he earned an M.S. in physics and then M.S. and Ph.D. degrees in computer science. After three years on the faculty of the Department of Electrical Engineering and Computer Science at the University of California–Berkeley, he left in 1975 to devote full time to Digital Systems, a company he founded as a UW graduate student. John subsequently founded Digital Microsystems, Inc., Ioline Corporation, and IC Designs, which was acquired by San Jose-based Cypress Semiconductor in 1993. He is vice president of the corporation and directs the Kirkland division, which designs specialized timing circuits for personal computers.

Patti earned her B.S. in computer science from Iowa State University and M.S. in electrical engineering and computer science from UC Berkeley. Over the course of her career she was a member of the technical staff of Bell Laboratories, chief operating officer of Digital Microsystems, Inc., and chairwoman and CEO of D.W. Close, a major Seattle-based electrical contractor.

Steven M. Seitz

Short-Dooley Endowed Career Development Professorship in Computer Science & Engineering

Steve Seitz is an expert in computer vision and computer graphics. His research focuses on the problem of computing the three-dimensional structure, appearance, and behavior of the real world from digital photographs. Notable outcomes of his work include pioneering voxel-based techniques for reconstructing 3D objects from multiple camera viewpoints; capturing high-precision geometry of faces as they move; inventing panoramic images that can be viewed stereoscopically; and creating immersive 3D visualizations of scenes from photos on the Internet.

Following undergraduate work at the University of California–Berkeley in 1991, Steve completed his Ph.D. at the University of Wisconsin–Madison in 1997. He then spent one year as a postdoctoral fellow in the Vision Technology Group at Microsoft Research, followed by two years as an assistant professor in the Robotics Institute at Carnegie Mellon University. He joined the UW CSE faculty in July 2000.

Steve was twice awarded the David Marr Prize for the best paper at the International Conference of Computer Vision, and has received a National Science Foundation CAREER Award, an Office of Naval Research Young Investigator Award, and an Alfred P. Sloan Research Fellowship.
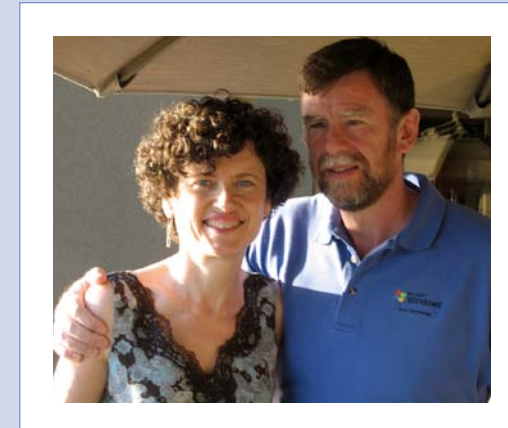
EMER DOOLEY AND ROB SHORT

Rob Short and Emer Dooley are long-time friends and generous supporters of UW Computer Science & Engineering and established the Short-Dooley Endowed Career Development Professorship to enhance CSE's ability to attract and retain exceptional faculty.

Both earned graduate degrees at the University of Washington — Rob an M.S. in computer science and Emer an M.B.A. and doctorate from the School of Business. They hail originally from Ireland, where Rob graduated from the Cork Institute of Technology and Emer received a B.S. in electrical engineering and an M.S. in computer engineering from the University of Limerick. They worked for Digital Equipment Corporation in Ireland before moving to the United States and ultimately to Seattle.

Rob is now corporate vice president for the Windows Core Technology group at Microsoft, where he leads a team responsible for the design, development, and testing of the core components of the Windows operating system. Emer is a UW lecturer in Computer Science & Engineering and the School of Business and also serves on the boards of the Northwest Entrepreneur Network and Social Venture Partners.

Rob and Emer have two children. Mountain climbing is a favorite outdoor passion and they have scaled both Mt. Rainier and Mt. McKinley.

Susan J. Eggers

**Microsoft Professor of Computer Science & Engineering**

Elected to the National Academy of Engineering

Susan Eggers was honored with one of the highest distinctions for an engineer with her election in May to the National Academy of Engineering. The academy cited her "contributions to the design and evaluation of advanced processor architectures."

Eggers performed the first application-driven studies of data sharing in shared-memory multiprocessors. This work established the superiority of write-invalidation cache coherency protocols, leading to their widespread adoption in commercial multiprocessors. In 1994, with Hank Levy and their students, Eggers invented Simultaneous Multithreading (SMT), which converts thread-level parallelism into instruction-level parallelism, a general-purpose solution to the single-threaded processors' low performance. SMT became the first commercially viable multithreaded architecture, adopted by Intel (as Hyperthreading), IBM, Sun, and others. The original 1994 paper on SMT was selected for the 25th Anniversary Anthology of the International Symposium on Computer Architecture. Eggers is now working with Professor Mark Oskin on what could become the first viable dataflow processor, known as WaveScalar.

Eggers earned her doctorate at the University of California–Berkeley and joined UW Computer Science & Engineering in 1989. Among past honors are an IBM Faculty Development Award and an NSF Presidential Young Investigator Award. She is a Fellow of the ACM and IEEE, and now is one of just six active UW faculty who are members of the National Academy of Engineering.
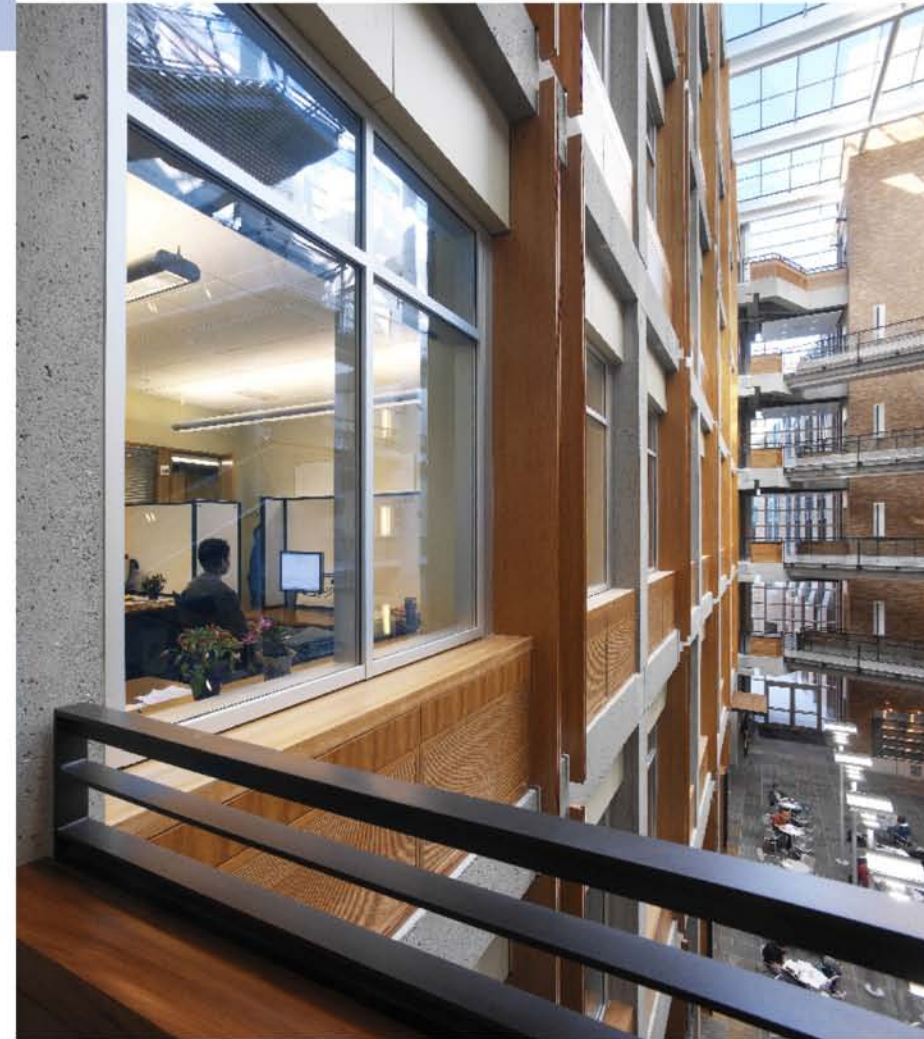
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