



most significant bits

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New Chair of UW CSE Hank Levy (pictured at far right), with former chairs (from left) David Notkin (2001-2006), Ed Lazowska (1993-2001), and Jean-Loup Baer (1988-1993)

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Professor Hank Levy named new Chair of University of Washington Computer Science & Engineering

Henry M. Levy, longtime University of Washington Computer Science & Engineering professor and expert in operating systems and computer architecture, has been named the next chair of UW CSE. Levy replaces David Notkin, who has held the position for the past five years. Levy's first official day as chair was (no fooling!) April 1.

Levy said he is honored to be following in the footsteps of "an incredible set of department leaders."

"CSE is well positioned to become even stronger over the next few years, building on the advantages of the University of Washington and the possibilities created by our wonderful environment in the Allen Center," he said. "My goal is to capitalize on these advantages to move us forward to the next level."

Mani Soma, acting dean of the College of Engineering, called Levy a great choice to build on what is already an excellent program -- the department has been consistently ranked among the nation's top 10 for more than two decades.

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from where I sit...



This spring I had the honor of becoming the 7th chair of UW Computer Science & Engineering, following in the footsteps of a great set of department leaders. I'd particularly like to thank David Notkin for his selfless dedication and service to the department over the last 5 years. As chair, David oversaw the end of the Sieg Hall era and the move into our wonderful new space in the Allen Center. David also helped to preserve CSE's people-oriented culture.

As for me, I'm thrilled at the opportunity to help move CSE forward into the future. This is an exciting time for CSE, for the College of Engineering, and for UW. There has recently been a change of UW leadership from top to bottom that signals significant new opportunities. At the top are our new President, Mark Emmert, and Provost, Phyllis Wise. Mark and Phyllis are terrific and are great supporters of CSE. At the bottom - well - I guess that's me! Most important, in the middle is Matt O'Donnell, who will soon assume the position of Dean of Engineering vacated by Denice Denton, who left last year to become Chancellor (President) of UC Santa Cruz. Matt joins us from the University of Michigan where he built a top-tier bioengineering department. Matt brings a wealth of experience across engineering and scientific disciplines, including physics, electrical engineering, computer science, and biomedicine. I expect Matt to provide new energy and direction to the College, and to significantly enhance the quality of all of the College's programs. For CSE, we hope to play a key role in making UW CoE one of the premier engineering colleges in the country.

One thing that makes UW Computer Science & Engineering successful is the great community of supporters we've developed over the years, particularly through the campaign for the Allen Center and our ongoing endowment campaign. I've met many of you over the years in my roles as a teacher, researcher, and Allen Center liaison to the architects and contractors. I'm looking forward to interactions with old friends and new friends in my role as chair.

Being involved in the design and construction of the Allen Center was one of the most satisfying experiences I've ever had. We had hundreds of dedicated people involved in the project at every level, all working towards a single goal. The result is a physical structure that already has the reputation of being the nicest computer science building in the country. A parade of CS departments considering new building projects has visited UW to tour the Allen Center and to see what we've accomplished - how the design of the building enhances our sense of community and our ability to do forefront teaching and research.

In May we held a wonderful event in the Allen Center's Microsoft Atrium - the College of Engineering Diamond Award ceremony honoring alumni of the College. Of the four honorees, we are extremely proud that two of them are CSE alums. Jeremy Jaech (M.S., 1980) received the Entrepreneurial Excellence Award for his success as a founder of three companies: Aldus (acquired by Adobe), Visio (acquired by Microsoft), and now Trumba, his latest venture. Jeremy also served as co-chair of the Allen Center capital campaign. Jeff Dean (Ph.D., 1996) was honored with the Early Career Award. Jeff was one of the first employees at Google and has helped to design and implement three generations of Google's Web crawling, indexing, and query serving systems. We congratulate Jeremy and Jeff on these awards - it was great to see their accomplishments recognized in this way.

Let me say again how proud I am to be chair of CSE. I joined the department in 1983 and it's been an incredibly exciting and rewarding experience to be working with so many great students and colleagues on advancing the state of our art. I look forward to an equally rewarding experience over the next five years in helping us to realize the enormous potential of this department and community.

Henry M. Levy
Chairman and Wissner-Slivka Chair

CSE displays Seahawk pride....



Ok, so the Seahawks didn't win the Super Bowl in 2006. But it's certainly not for lack of civic pride, as displayed on both the inside and outside of the Paul G. Allen Center for Computer Science & Engineering. At the suggestion of some CSE undergrads, the Seahawks owner and Allen Center namesake sent over a couple of banners for the building, and we're sure they'll come in handy again for Super Bowl XLI in 2007!

Tom Anderson wins Mark Weiser Award

UW CSE professor Tom Anderson has been honored as the fifth recipient of the Mark Weiser Award -- the second year in a row that a UW CSE faculty member has won the top international award in the operating systems field.

The Weiser Award was established in 2001 by ACM's Special Interest Group on Operating Systems. Recipients, who must have begun their careers no earlier than 20 years prior to nomination, are selected based upon "contributions that are highly creative, innovative, and possibly high-risk, in keeping with the visionary spirit of Mark Weiser." Weiser was a computing visionary recognized for his research accomplishments during his career at Xerox PARC. The foremost proselyte of Ubiquitous Computing, he was claimed by cancer in 1999 at the age of 46.

Anderson received his Bachelors degree from Harvard in 1983 and his Ph.D. from the University of Washington in 1991. He began his faculty career at UC Berkeley, where he received tenure in 1996. Shortly after, he returned to UW CSE as a faculty member.

Previous recipients of the Weiser Award include: Frans Kaashoek (MIT); Mendel Rosenblum (Stanford); Mike Burrows (Google); and Brian Bershad (UW CSE). Bershad received his Ph.D. from UW CSE in 1990, and returned as a faculty member in 1993, after three years on the faculty at Carnegie Mellon University.

we want to hear from you!

Have news you'd like to share with the CSE community? Have comments or suggestions for future issues of MSB?

Let us know! Email the editors at:

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and be sure to visit us online at:

www.cs.washington.edu

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Past and present issues of MSB can be downloaded from www.cs.washington.edu/msb

Hank Levy named new head of UW CSE

(Continued from front page)

"We're confident that Hank will provide the leadership to continue that tradition," Soma said.

Outgoing chair Notkin has known Levy since 1984, when Notkin first joined the department. During that time, Levy has been an integral part of department culture.

"Hank helped design a building that fits our culture and our needs," Notkin said, referring to Levy's service as department liaison for both the design and the construction of the Paul G. Allen Center for Computer Science & Engineering. "He's extraordinary in terms of his research, classroom teaching and mentoring as well. My greatest hope is that he will be able to take us to the next level, and I can't imagine anyone better than Hank to do that. He's a wonderful guy."

After earning a bachelor's degree in math and computer science at Carnegie Mellon University in 1974, Levy began his career at Digital Equipment Corp. There, he was a member of the company's original design and implementation team for the VMS operating system and a systems architect for VAXclusters, one of the first clustered computer system products.

Levy earned a master's degree in computer science from the UW in 1981 working with Ed Lazowska and joined the University in 1983, where he led several pioneering projects that helped lay the groundwork for modern object-oriented distributed systems and languages.

In the early 1990s, he helped develop new techniques for high-performance thread support, synchronization and communication that influenced a number of commercial operating systems. In the mid-1990s, Levy, along with CSE professor Susan Eggers and their students, invented simultaneous multithreading, which allows modern processors to execute multiple instructions from multiple programs in a single computing cycle.

This technology is used in several microprocessors, including the Intel Pentium-4 and the IBM Power-5.

Levy is a fellow of the Association of Computing Machinery and of the Institute of Electrical and Electronics Engineers, and recipient of a Fulbright Research Scholar Award.

datagrams

Tapan Parikh's research on cover of IEEE Pervasive Computing
Images from UW CSE graduate student Tapan Parikh's CAM project comprise the cover of the April-June 2006 issue of *IEEE Pervasive Computing*, and he is the author of one of three papers included in this special issue on "Pervasive Computing for Emerging Economies." Tapan's research focuses on designing computing systems that support sustainable rural development in low per-capita income economic conditions.

Michelle Banko wins Google Anita Borg Memorial Scholarship
The Google Anita Borg Memorial Scholarship was established to honor the legacy of Anita Borg and her efforts to encourage women to pursue careers in computer science and technology. For the 2006-07 academic year, Google received 324 applications from students at 90 different universities across the country, and selected 19 scholarship winners, including UW CSE grad student Michelle Banko. In addition, UW CSE's Annie Liu and Sunny Consolvo were among 28 runners up named by Google for this scholarship.

Gail Murphy wins NSERC Steacie Fellowship
The Natural Sciences and Engineering Research Council of Canada awarded UW CSE Ph.D. alumna Gail Murphy one of six Steacie Fellowships for 2006. The Fellowship is awarded to outstanding Canadian university scientists or engineers, who have obtained their doctorate within the last 12 years, and whose research has already earned them an international reputation. Murphy is a member of the computer science faculty at the University of British Columbia, and in 2005 she was the inaugural recipient of the first Dahl-Nygaard Prize for her achievements in software engineering research and teaching.

Lazowska receives ACM Presidential Award
At the ACM Awards Banquet in May, ACM President David A. Patterson named UW CSE's Ed Lazowska as a recipient of the 2005 ACM Presidential Award. Lazowska was recognized "For showing us how to advocate effectively for IT research and advanced education." The ACM Presidential Award has been conferred to only 7 people since it was instituted in 1985. Lazowska was one of three recipients this year: others were Andy Bechtolsheim of Sun Microsystems and Jan Cuny of the University of Oregon and NSF.

Mathieu Blanchette wins 2006 Overton Prize
2002 UW CSE Ph.D. alum Mathieu Blanchette, now a professor at McGill University, has received the 2006 Overton Prize from the International Society for Computational Biology. The prize is awarded "for outstanding accomplishment to a

scientist in the early- to mid-stage of his or her career who has already made a significant contribution to the field of computational biology through research, education, service, or a combination of the three.” UW Biochemistry’s David Baker received the 2002 Overton Prize.

Tom Anderson and Dan Weld elected ACM Fellows

CSE Professors Tom Anderson and Dan Weld have been elected Fellows of the Association for Computing Machinery, joining 11 other active or emeritus UW CSE faculty members. ACM is widely recognized as the premier organization for computing professionals worldwide. ACM has approximately 82,000 members, roughly 500 of whom hold Fellow rank. Congratulations to Tom and Dan on this substantial recognition.

Ahror Rahmedov pens book, “Finding Face and Faith in America”

2005 CSE Bachelors alum Ahror Rahmedov has recently completed a book based on his amazing life story. “*Finding Face and Faith in America*” tells the “true story about the exceptional challenges I faced in my personal life, including the loss of my mother to cancer while young, unjust persecution of my father in a soviet prison, and losing my face to a devastating injury caused by a signal rocket. In this book you’ll also read how ordinary, culturally Muslim, people of Uzbekistan live and go about their lives ... You will also learn about how I was discovered by two Americans while I was hopeless in a communist hospital following the massive injury I suffered, how ordinary citizens of the United States helped me recover and rebuild my face in Seattle ...”

Rob Short destroys a building at Microsoft...Really!

UW CSE M.S. alum Rob Short, vice president of Microsoft’s Windows core technology group, recently bid \$1100 in the company’s United Way auction to win an hour behind the controls of an excavator, tearing down an old storage building on the Microsoft campus in Redmond to break ground for the new headquarters of the Microsoft research group. “I’m seriously into it, but they don’t want me driving this around with all the dignitaries present; they’re afraid I’ll hurt someone,” said Rob. Those dignitaries included Governor Christine Gregoire and Redmond Mayor Rosemarie Ives.

Ed Felten to direct Princeton’s new Center for Information Technology Policy

Princeton University has appointed UW CSE Ph.D. alum Ed Felten to direct a new Center for Information Technology Policy, whose goal is to bring leading computer scientists and engineers together with economists, sociologists, lawyers and policymakers to issue recommendations on topics ranging from ensuring the privacy of medical records to creating fair regulations for Internet phone services.

CSE alum Geoff Voelker wins Chancellor’s Award for Teaching Excellence at our “south campus”



UC San Diego Computer Science & Engineering professor (and UW CSE alum) Geoff Voelker has been honored by UCSD with the 2006 Chancellor’s Associates Faculty Excellence Award for excellence in teaching. The annual awards highlight the important contributions of the university’s most exemplary faculty members. Voelker was cited for excellence in undergraduate teaching.

Voelker was selected for his “fresh teaching approach, tireless advocacy for student efforts and exceptional contributions” to his department.” Voelker has consistently received outstanding student reviews, especially from those who participate in his popular Software System Design and Implementation course, which teams up seniors in their final quarter on projects in order to build from scratch, over the course of ten weeks, a massively multi-player, networked computer game.

“Students love Professor Voelker’s classes because he has the uncanny ability to make extremely challenging curricula contemporary, fun and exciting,” said Jacobs School Dean Frieder Seible. “He truly inspires his students to experience the thrill of engineering. The vision, commitment and extraordinary efforts Professor Voelker demonstrates through his teaching make him an exemplary member of the UCSD faculty.”

In addition to Voelker, UW CSE alums on the UCSD CSE faculty include Fran Berman, Brad Calder, Bill Griswold, Sorin Lerner, Stefan Savage, and Dean Tullsen, plus an assist with Amin Vahdat.

Endowments from great friends support great faculty

CSE alumni and friends have established 24 endowments to date through Campaign UW. In this issue we turn the thank you spotlight on friends who recently established or inspired the creation of endowed chairs or professorships. Such support helps us reward and retain stellar faculty and gives a critical extra boost to innovation.

Frank & Wilma Bradley Endowed Chair

Holder: Professor David Notkin

A special friend of the University of Washington, Wilma Bradley established the Frank & Wilma Bradley Endowed Chair in Computer Science & Engineering to honor her late husband, who led a varied career in the U.S. Army, including service in Korea and Europe. Upon Frank's retirement in Seattle in 1964, the Bradleys became involved in real estate investment and property management. Wilma continues to manage her investments and also volunteers for UNICEF, is a patron of the arts, and continues a keen pursuit of knowledge and interest in science and technology by attending many University lectures and functions.



Wilma Bradley and David Notkin



Patti and John Torode

Torode Family Endowed Career Development Professorship

Holder: Associate Professor Steven D. Gribble

John and Patti Torode strongly believe that outstanding faculty create opportunity at major research universities. While John was earning his doctorate in computer science at the UW he established a company called Digital Systems. He subsequently founded several other companies, including IC Designs, later acquired by Cypress Semiconductor. He is corporate vice president and directs the Kirkland division. Patti holds an M.S. degree in electrical engineering and computer science from UC Berkeley and has held management positions in industry, most recently as CEO and chairwoman of D.W. Close.



Emer Dooley and Rob Short

Short-Dooley Endowed Career Development Professorship

Holder: Associate Professor Steven M. Seitz

Rob Short and Emer Dooley are long-time friends and generous supporters of UW CSE. Both earned graduate degrees at the UW — Rob an M.S. in computer science and Emer an M.B.A. and Ph.D. from the School of Business. They are natives of Ireland, where they did their early engineering training and worked for Digital Equipment Corporation. Rob is now corporate vice president for the Windows Core Technology group at Microsoft, where he leads a team responsible for the core components of the Windows operating system. Emer is a UW lecturer in Computer Science & Engineering and the Business School and also serves on several local business-sector boards.

Jerre D. Noe Endowed Professorship

Holder: Professor Gaetano Borriello

UW CSE is one of Jerre Noe's many legacies. Another is the endowed professorship established by friends in his honor. Recruited to the UW in 1968, Noe guided the Computer Science Group to departmental status and was chair until 1976. He then directed the NSF-funded Eden Project that was key to establishing CSE as one of the strongest computer systems research groups and top computer science programs in the world. Earlier he led the Stanford Research Institute technical team for the ERMA project, which first computerized banking in the 1950s, a remarkable engineering achievement that revolutionized the world banking system. Noe retired from CSE in 1989, but remained active in the life of the department until passing away in 2005 at age 82.



Jerre Noe



Receiving and giving back mark Shun-Tak Leung's journey from Hong Kong to UW to Google

Shun-Tak Leung bestowed a most distinctive title on his endowment fund for graduate students: "Faithful Steward Endowed Fellowship in Computer Science & Engineering." It captures his philosophy that those who receive much and are given a trust must prove faithful and give back in return.

Leung first stepped into Sieg Hall in fall 1990 to begin his doctoral studies in CSE. Barely a week before, he had left his home and parents in Hong Kong, where he earned his bachelor's and master's degrees in electrical and electronic engineering.

He landed at UW CSE through a combination of thoughtful selection and a "little bit of luck" — drawn by its ranking among the best in the world and its Pacific Rim location. "Even though I was a stranger from another country, I received nothing but kindness and help at the UW," Leung recalls.

His doctoral research under Professor John Zahorjan focused on compiler-driven techniques to restructure data to maximize cache performance. Leung remains grateful for Zahorjan's constant and ever-optimistic support and encouragement. Zahorjan remembers Leung as "the kind of graduate student we all hope for — intellectually curious, always prepared and heading in a productive direction, and focused on objectively finding the truth in ideas."

Professor Ed Lazowska also inspired Leung through his "contagious enthusiasm" and provided critical help in his early career. Following graduation in 1996, Leung headed to Palo Alto for a research position at Digital Equipment Corporation's Systems Research Center. He's now a software engineer at Google, working on distributed file systems for data storage. He enjoys his work, the company, the great California weather, and a life filled with many blessings.

Leung's opportunity at Google has enabled him to give back "in some small way" for all he has received. His inspiration for giving is rooted in his Christian faith and the example set by his parents. "They are not wealthy or highly educated, but they encouraged me to pursue my dreams and they sacrificed a lot for me," he said.

His appreciation for the fine education and encouragement he received at CSE now manifests in his endowment that will provide one-year fellowships based on merit. "I'm honored and humbled to establish a lasting legacy that will benefit generations of students to come," Leung said.

He trusts that they also will find the UW a welcoming and stimulating place to learn, to grow, and to pursue dreams. The name of his endowment hints at another dream — that these students will, in time, also become benefactors. "I hope that those entrusted with talents and opportunities and equipped with knowledge will live up to their calling and stay faithful in their stewardship — and that they will be the first to serve but the last to claim privilege or honor."

Annual Fund Gifts = "Angel" Investments

If you have made a donation to CSE this year — Thank you! If not, please consider contributing to the Computer Science & Engineering Annual Fund. Donations to this critical fund have immediate impact because they address areas of greatest need, allowing the chair to make small but powerful "angel investments" in innovative projects proposed by faculty, students, and staff.

When UW alumni Rob Short and Emer Dooley made a recent donation to the fund, their gift transformed the experience of undergraduates in one of our "Capstone Design Courses." A key component of the undergraduate program, these courses give students a chance to tackle complex hardware, software, and embedded system design and implementation projects of their own invention. Rob and Emer's gift helped us acquire advanced hardware components, enabling students to work on sophisticated projects that would not have been possible without private support. The annual fund also boosts resources for scholarships, graduate fellowships, and faculty recruiting.

Many companies will match employee contributions to the University of Washington. To learn more about making a gift, please visit our Web site: <http://www.cs.washington.edu/campaign>

Susan Eggers elected to National Academy of Engineering



UW CSE professor Susan Eggers, co-inventor of a revolutionary computer processing technology that changed commercial industry standards, has been elected to the National Academy of Engineering.

The NAE operates under the charter, signed in 1863 by Abraham Lincoln, which established the National Academy of Sciences. According to the academy, membership honors those who have made “important contributions to engineering theory and practice” and those who have demonstrated “unusual accomplishment in the pioneering of new and developing fields of technology.”

“This is among the highest of professional honors that an engineer can receive,” said former CSE chair David Notkin, “This recognizes Susan as not just a great researcher and teacher, but as a pioneer in the field.”

Eggers is one of 76 new members and nine foreign associates announced by the academy this year, and is among five active UW faculty who are academy members. In electing her, the academy cited her “contributions to the design and evaluation of advanced processor architectures,” for achieving what colleagues say is perhaps her greatest accomplishment to date when she teamed up with fellow UW professor Hank Levy and a group of students to invent “simultaneous multithreading” -- a way to make more efficient use of a chip’s processing resources. The research has influenced almost all recent microprocessors.

The concept of multithreading was first proposed in the 1960s and is used in supercomputers. Eggers and Levy’s

technique showed how the idea can be applied to mass-market computing. Modern computers are capable of doing a lot of work simultaneously. For example, some processors can perform 10 arithmetic operations (like adding or subtracting) every clock tick, which is every billionth of a second on a one-gigahertz processor. In practice, however, they do only two or three operations per tick, wasting the potential for much higher performance. That’s because modern computers work on only one program, or thread, at a time, and there’s a limit to the number of arithmetic operations a single program can present to the computer in one clock tick.

Susan joined the UW in 1989, after following a non-traditional career path. She earned a bachelor’s degree in economics in 1965 from Connecticut College. She worked various jobs, including a stint at Yale University as part of a research team that developed the first automated medical record system that captured medical semantics, and later at Lawrence Berkeley National Laboratory doing computer science research in database management. In 1983, she entered the graduate computer science program at the University of California, Berkeley, receiving her doctorate in 1989.

208 computer scientists and computer engineers are members of NAE, including UW CSE professors Susan Eggers and Ed Lazowska, and UW CSE affiliate professors Phil Bernstein and Burton Smith.

Wavescalar project hits prototype milestone



CSE’s Wavescalar Project achieved a major breakthrough recently with the successful prototyping of a 16-board FPGA dataflow engine. WaveScalar is a dataflow instruction set architecture and execution model designed for scalable, low-complexity/high-performance processors, a dataflow machine that can run “real-world” programs, written in any language, without sacrificing parallelism. For more info on the Wavescalar Project, see:

<http://wavescalar.cs.washington.edu>

CSE alums Jeff Dean and Jeremy Jaech win UW College of Engineering Diamond Awards



On May 5, 2006, the UW College of Engineering held its inaugural Diamond Awards Dinner in the Microsoft Atrium of the Paul G. Allen Center for Computer Science & Engineering. The Diamond Awards recognizes alumni and friends of the College to honor their outstanding achievements and to celebrate the ingenuity and entrepreneurship of all engineers.

UW CSE feels particular pride in the fact that two of the four honorees in this inaugural group are CSE alumni -- Jeff Dean, recipient of the Early Career Achievement Award, and Jeremy Jaech, recipient of the Entrepreneurial Excellence Award.

The Early Career Achievement Award recognizes outstanding graduates who have demonstrated exceptional achievement for the first ten years of an engineering career. Career accomplishments, contributions to the profession, excellence in research and education, and/or volunteer service are considered in making this award.

Millions of people satisfy their curiosity every day by using Jeff Dean's handiwork. Jeff has helped to develop and implement three generations of Google's Web crawling, indexing

and query serving systems—covering two and three orders of magnitude growth in number of documents searched, number of queries handled per second, and frequency of updates to the system. He is now a Google Fellow in the systems infrastructure group. Jeff earned a bachelor's degree in computer science and economics from the University of Minnesota, then went to work for the World Health Organization, developing software to help fight the HIV pandemic. After receiving a Ph.D. in computer science from the UW in 1996, he spent three years with Digital Equipment Corporation, working on projects including web-based information retrieval. Jeff joined Google in 1999.

The Entrepreneurial Excellence Award recognizes a graduates who best exemplifies the ideals of entrepreneurship in any or all of the following ways: been a founder of one or more entrepreneurial ventures; contributed to the engineering profession in ways that are an inspiration to others; used his or her engineering skills and creativity to enrich humanity.

In the past 20 years Jeremy Jaech has had a hand in the startups of Aldus (acquired by Adobe), Visio (acquired by Microsoft) and now Trumba. New ways of working have sprung from his revolutionary products: PageMaker ushered in desktop publishing and Visio was the first mass-market business drawing and diagramming software. Now Jeremy is president and CEO of Trumba, which provides shared online calendaring for subscribers and the groups to which they belong. A Richland native, he earned a bachelor's degree in mathematics and a master's degree in computer science at the UW. He co-chaired the capital campaign to build the Paul G. Allen Center for Computer Science & Engineering, and he currently chairs the Campaign UW communications committee. In addition, Jeremy serves on the boards of RealNetworks, Alibre Inc., and the Fred Hutchinson Cancer Research Center.

Also honored were Al DeAtley, Distinguished Service Award, and Chumpol Na Lamlieng, Distinguished Achievement Award.



Deans and Diamond Award Winners

Picture here (l-r) are Diamond Award Winners Al DeAtley, Chumpol Na Lamlieng, and CSE alumni Jeff Dean and Jeremy Jaech. Also pictured here are (back row) acting dean Mani Soma, incoming dean Matt O'Donnell, and former dean Ray Bowen.

Four UW CSE undergrads recognized in CRA awards competition

The 2006 Computing Research Association Outstanding Undergraduate Award competition has recognized 34 students from 27 different universities -- including four from UW Computer Science & Engineering. (Harvard, Columbia, Drexel, and Rochester each had two students recognized. Twenty two schools had a single student recognized.)

CRA's Outstanding Undergraduate Award program recognizes undergraduate students in US or Canadian universities and colleges who show outstanding research potential in an area of computing research. In addition to evidence of significant research contributions, the committee also considers the student's academic record and service to the community.



UW CSE senior Jenny Yuen was named CRA Outstanding Female Undergraduate for 2006

UW CSE senior Jenny Yuen received the Outstanding Female Undergraduate Award. Jonathan Su was named a Finalist for the Outstanding Male Undergraduate Award. Krista Davis and Ben Hindman both received Honorable Mention.

Jenny's research is on object and concept recognition for content-based image retrieval. This work has already led to one publication with several more on the way. In the past year her focus has been on a medical application of image analysis. In this project she is performing at the level of a graduate student, developing novel techniques of her own design and implementing them to produce a working system. Jenny has worked as a summer intern at both Microsoft and Google, and has received scholarships from both companies. Prior to attending the University of Washington, Jenny attended Escuela Nacional Preparatoria (the National High School of Mexico) where she was one of the top ten students in a class of 11,000. Next year Jenny will be a graduate student at MIT.

Jonathan Su's undergraduate research concerned educational technology, including 6 months spent at Microsoft Research's Beijing Lab. Next year he will be a graduate student at Stanford.

Krista Davis's undergraduate research also concerned educational technology; she is now working in the Center for Technology in Learning at SRI International.



UW CSE seniors (l-r) Jonathan Su, Finalist for CRA Outstanding Male Undergraduate, Krista Davis, Honorable Mention, and Benjamin Hindman, Honorable Mention, in the 2006 CRA Outstanding Undergraduate Awards

Ben Hindman's undergraduate research concerned advanced programming systems. After spending the summer at Microsoft Research, he will return to the UW to complete his studies.

Since 2000, UW CSE undergrads have been awarded a total of 16 Honorable Mentions, 3 finalists, 2 runners up for Outstanding Female Undergraduate, and 1 winner each for Outstanding Female and Outstanding Male Undergraduate.

Why Choose CSE?

Why do undergraduate students, graduate students, and faculty choose computer science & engineering as their field? What takes place during a day in the life of a CSE alum working in the software or Internet industry?

Two student recruiting videos from University of Washington Computer Science & Engineering address these questions. Take a look! And pass the link along to high school students and teachers!

<http://www.cs.washington.edu/WhyCSE/>



Motion-Capture meets Anthropology on a Jamaican dance floor

A new study recently featured on the cover of the journal *Nature* shows how motion-capture technology can be used to analyze and accurately recreate the movements of dancers, illustrating how people appear able to pick genetically superior partners based simply on the way they dance.

The research, done jointly by computer scientists from the University of Washington and anthropologists from Rutgers University, represents the first time scientists have been able to link skillful dancing to established measures of human desirability and attractiveness.

“This suggests a completely new way in which dance will be looked at and analyzed in the future,” said UW CSE professor Zoran Popović. “It’s the first time it has been shown that people can discern genetic quality from dance and movement itself.”

The project also opens a new chapter in the use of motion-capture technology and computer animation, Popović’s primary fields of study. The techniques have been used in rehabilitative and sports medicine and, more familiarly, in creating feature movie animations and special effects.

“But use of motion capture as a tool for analysis and archiving of movement in indigenous cultures has not been attempted -- this is the first time it’s really been taken into the field and used as an anthropological tool,” Popović said.

The researchers traveled to Southfield, Jamaica, where dance is culturally important to both sexes. That area also has a group of youths whose development has been tracked for body symmetry over the past decade. Evolutionary biologists have established close links between symmetry and such traits as longevity, strength and reproductive success in many animal species, including humans.

The researchers analyzed 183 members of that group, age 14 through 19, attaching infrared markers to the teenagers at 41 body locations. They filmed each teen for one minute, dancing to the same popular song, with special cameras that tracked the markers to record in detail how the dancers moved.

Popović and his colleagues processed that raw data to create animations that duplicated the movements of the dancers. They then asked teen peers to evaluate how well



UW CSE researcher Karen Liu gets a Jamaican teenager ready to dance wearing motion-capture markers for a recent study that linked dancing with attraction and genetic advantage.

the computer-generated figures danced. The figures were the same size, faceless and gender-neutral so evaluators had to base their answers on movement rather than other considerations, such as physical attractiveness. The study showed that the dancers who rated best tended to be those with greater body symmetry. And symmetry is correlated with better genes, study researchers said.

“At least since Darwin, scientists have suspected that dance so often plays a role in courtship because dance quality tracks with mate quality,” said Lee Cronk, associate professor of anthropology at Rutgers and project leader. “By using motion-capture technology, we can confidently peg dancing ability to desirability.”

Scientists also broke down the results by gender. They found that symmetrical men scored better than symmetrical women, and that female evaluators rated symmetrical men higher than male evaluators rated symmetrical men.

That’s not surprising, according to William Brown, Rutgers postdoctoral research fellow. “In species where fathers invest less than mothers in their offspring, females tend to be more selective in mate choice and males therefore invest more in courtship display,” Brown said. “Our results with human subjects correlate with that expectation. Attractive men are putting on a better show, and women are noticing.”

In addition to Popović, Cronk and Brown, co-authors of the study include graduate student Keith Grochow and recent doctoral graduate Karen Liu, of the UW; and professor Robert Trivers and graduate student Amy Jacobson of Rutgers.

The Dance Symmetry Project Web site, which includes video clips of dancing animations, can be found here: <http://grail.cs.washington.edu/projects/dance-symmetry/>

Matthew O'Donnell named new Dean of UW College of Engineering

Matthew O'Donnell, chair of the Biomedical Engineering Department at the University of Michigan and a researcher who explores imaging technologies in biomedicine, has been named new dean of the University of Washington College of Engineering, and first holder of the Frank and Julie Jungers Endowed Deanship in Engineering. The appointment, announced by Provost Phyllis Wise, is effective September 1.

"Attracting Matt O'Donnell to lead the college in the 21st century is a watershed moment in the history of engineering at the university," said Wise. "Matt is one of the leading visionary engineering educators who understands the changing landscape in engineering and how important it is to the future competitiveness of America in the global economy and what contributions engineering can make to improving the quality of life of people around the world. We are truly fortunate to be able to bring him to the UW."

UW President Mark A. Emmert said O'Donnell is an excellent choice to lead the college at a time when engineering as a discipline is rapidly expanding in scope. "This is a time for the university to stake out strategic investments in areas where we can truly make a difference, and the future of the whole

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field of engineering is one of them," Emmert said.

O'Donnell is eager to take the helm at UW Engineering. A physicist by training, O'Donnell is known among colleagues for his ability as a scientist-engineer to work across disciplines, his keen professional drive, and his engaging manner. After earning his doctorate at Notre Dame in 1976, he worked first as a graduate research and teaching fellow at Notre Dame, then as a senior research associate in physics and a research instructor in medicine at Washington University in St. Louis. Later, he took a post at Yale as a research fellow in electrical engineering.

In 1980, O'Donnell moved to the private sector as a physicist for General Electric. He joined the University of Michigan in 1990 as a professor of computer science and electrical engineering. In 1999, he became chair of Michigan's Biomedical Engineering Department. He holds 50 patents and has authored or co-authored more than 200 publications. His research prowess is balanced with talent in the classroom -- he won several engineering teaching awards at Michigan.



most significant bits

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