

most significant bits

newsletter of uw computer science & engineering

volume 14, number 1, summer 2003



university of washington



Karen Orders, University of Washington

contents

Letter from the Chair	2
Datagrams	3
Intel Research Seattle	4
Special Allen Center Coverage	
• A Salute to Our Supporters	
• CSE Through the Years	
• A Peek Inside The Allen Center	
CSE Prof co-founds silicon	
startup Impinj	5
More Datagrams	6
CSE's San Diego Campus	7
Jerre Noe turns 80!	7
Bob Wallace: The Soul of the	
New Machine	8

Paul G. Allen Center for Computer Science & Engineering opens this fall

As this issue of MSB goes to press, we have begun the move to our new home -- the magnificent Paul G. Allen Center for Computer Science & Engineering.

The Allen Center is the result of a wonderful public/private partnership: \$30 million from the University of Washington and the State was augmented by \$42 million from more than 250 CSE friends and alumni to create this incredible facility. The Allen Center's seven stories nearly triple the space available to CSE in overcrowded and crumbling Sieg Hall. A dramatic six-story glass atrium serves as an inviting "student commons." On the top floor, a view deck overlooks Lake Washington. Lab space, office space, conference rooms, and informal interaction spaces are plentiful. LMN Architects and M.A. Mortenson have designed and built a truly spectacular facility that will launch CSE into the 21st century with remarkably enhanced capabilities.

The Allen Center will be dedicated on October 9, 2003. We hope you will plan to join us for this very special event in the history of UW CSE. A four-page special section in this issue of MSB will serve to whet your appetite for this event, and to remind you of the days of Roberts Hall, Sieg Hall, punched cards, and 9-track tapes.

Please join us for the Allen Center dedication on October 9, 2003 at 1:30 p.m.!

from where I sit...



Dear members of the CSE community,

A common question I've been asked over the past while is, "So, how do you like being chair of UW CSE?" I have a set of stock answers, but the bottom-line is it has been a remarkably rewarding and exciting time for me. As you know, our new building - the Paul G. Allen Center for Computer Science & Engineering - is real: really, really real! It's impossible to convey how exhilarating this is and how important it is to CSE's future.

But an even more gratifying aspect of being chair has been the degree to which I now more deeply understand how the entire CSE community - students, staff, faculty, alums, and friends - is collectively committed to leadership and impact in information technology education, research, and service. Every person in this community contributes to UW CSE's excellence, helping drive us to even greater achievements, in ways both explicit and implicit. I understood this intellectually before I was chair, but my understanding is now visceral. Talking to people, visiting varied constituents, exchanging email with tons of people, and seeing a number of activities and achievements firsthand has given me a completely different perspective. One thing is clear: it would be impossible for CSE to continue to graduate fantastic students and to create ideas that transform the world without the continuous help, support, and energy provided by our whole community.

Over the next months, as we move, we'll be able to push our mission in entirely new ways. There are a set of known ways

in which we'll advance: laboratories to host special equipment (for robotics, graphics, vision, and other areas); laboratories and amenity areas to enable richer collaborations among faculty, students, and staff; and additional office space for visitors, post-docs, and professional staff that will allow us to continually bring in new ideas, an essential way to supplement and augment our faculty in our exceptionally rapidly moving field. What I find most enticing about the new building, however, is not the physical space that it will provide us, but rather the mental space it will provide us. After decades of "sorry, we have no space", we have a chance to blossom in dozens of unpredictable ways. Our community will, as it always has, step up to this challenge of the unknown and find ways to push our missions beyond what we are able to comprehend at present.

Of course, it's been a fun time, too. For instance, little did I know when I became chair that my beard (and my occasional wearing of a tie) would become a focus of much of the department's spirit: on my first Halloween as chair I walked into the departmental party and found myself facing several dozen Notkin masks, which was a truly frightening experience; for the next Halloween grad student Harlan Hile carved a "Notkin pumpkin" that entertained the front office for a few fleeting days; for one of the weekly TGIFs, some grad students produced posters that had various foods (grapes, donuts, etc.) strategically placed over my face; and during a rare Seattle snowstorm last winter Gary Yngve spearheaded the production of a bearded snowman! We've always been a "work hard, play hard" department, and that piece of culture definitely persists and will surely follow us to our new digs!

Let me finish by reiterating the importance of the entire community - you - on UW CSE. It's simply impossible to separate the achievements of CSE from the achievements of the community: they are one in the same. We don't produce Rhodes Scholars and Packard and Sloan Fellows without you. We don't produce ideas like simultaneous multithreading and UrbanSim without you. We don't provide Intel and Microsoft





Five Chairs... One Tie
 Robert Ritchie (1977-83), Jerre Noe (1968-76),
 Ed Lazowska (1993-2001), David Notkin (2001-present),
 Jean-Loup Baer (1988-93).

datagrams

Ph.D. alumna Fran Berman named to endowed chair at UCSD

1979 Ph.D. alumna Fran Berman has been appointed first holder of the Endowed Chair in High Performance Computing at the University of California, San Diego. Berman is a professor of Computer Science & Engineering and directs the San Diego Supercomputer Center (SDSC) at UCSD. "Fran Berman is a pioneer in grid computing and a leader in the international effort to build a comprehensive information infrastructure to support 21st century research in science and engineering," said UCSD Jacobs School Dean Frieder Seible.

Lazowska to co-chair President's Information Technology Advisory Committee

Ed Lazowska, Bill & Melinda Gates Chair, has been appointed by the White House as co-chair of the President's Information Technology Advisory Committee (PITAC). "PITAC will help guide the Administration's efforts to accelerate the development and adoption of information technologies vital for American prosperity in the 21st century," according to the White House press release.

CSE senior Erin Earl featured in Seattle Times

Erin, a June 2003 UW graduate at age 18, is a triple major in Computer Science, Music Theory, and Applied Music (piano). She received the 2003 Arts & Sciences Dean's Medal for the Arts, and will pursue graduate work in music at Indiana University in the fall -- computer science is her backup plan!

UW teams take top honors in Mathematical Modeling

Two University of Washington teams were among 11 awarded "Outstanding Winner" status -- from among 638 total entries -- in this year's Mathematical Contest in Modeling, an annual competition administered by the Consortium for Mathematics and Its Applications. Both of UW's 3-person teams included a Computer Science undergraduate major: sophomore Simon Pai (whose team additionally received special recognition from the Mathematical Association of America), and senior Sam Coskey (whose team additionally received special recognition from the Institute for Operations Research and the Management Sciences).

with a significant number of their best hires without you. We don't provide an environment that allows our faculty to create companies like Impinj and Performant without you. We don't succeed in interdisciplinary scholarship with Genome Sciences, Statistics, the Information School (and others) without you. And we can't continue to reach greater heights without you. So please accept my personal thanks for the multitude of ways in which each of you makes CSE a truly outstanding and special place.

This letter would be incomplete without one final observation: Ed Lazowska's eight years as chair took the department's exceptional fundamentals and culture and pushed us to a new level - Ed saw what we could be, and pushed us to new heights that provide tangible benefit to the department, to the college, to the university, and to and beyond the region. So, on behalf of the entire CSE community, "Thanks Ed!"

David Notkin
 Bradley Professor and Chair

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:

msb@cs.washington.edu

and be sure to visit us online at:

www.cs.washington.edu

(more datagrams on Page 6)

Intel and UW CSE form Innovative Collaborative Laboratory

A short walk from campus, on the NE corner of 45th Street and 11th Avenue, an innovation in industry-university collaboration is taking root: Intel Research Seattle. Although Intel has a long history of funding academic research, with more than 250 grants underway at universities throughout the world, this initiative branches out in a new direction. Intel Research Seattle is an environment where University faculty, students and Intel researchers can openly work together on problems of common interest.

The Seattle laboratory is part of Intel Research's network of university labs, the brainchild of David Tennenhouse. In 1999, Tennenhouse joined Intel and was charged with launching a new internal organization, Intel Research, to explore the disruptive and emerging technologies that could advance Intel's business and create new markets and opportunities.

After exploring possibilities, Intel Research launched a new model of industry-university collaboration in the form of the Intel Research Network of university labs. These project-focused labs, wholly owned and funded by Intel, are located near major universities. The universities were selected for their expertise in specific areas of computer science and information technology research that support Intel's proactive computing research agenda, and for their willingness to experiment with an open collaborative model of joint research.

The network of university labs currently consists of four labs each located adjacent to a major research university: the University of Washington, UC Berkeley, Carnegie Mellon University and Cambridge University. Each lab explores a different aspect of proactive computing, in which billions of devices embedded throughout the environment will anticipate people's needs and take action on their behalf, from new technologies for mobile and ubiquitous computing environments to software for widely distributed storage systems. Intel's investment in the Seattle laboratory reflects the breadth and depth of top CSE faculty in areas such as embedded systems, networking, distributed systems and artificial intelligence.

The ties to UW CSE at Intel Research Seattle are strong. The Laboratory director is CSE's own Gaetano Borriello who has taken a partial leave from his faculty position. Tennenhouse sought out Gaetano to be the founding director because of his stature in the research community and long history with DARPA research, most recently, leading the Portolano

Expedition. Gaetano says "If this vision of proactive computing is to become a practical reality, the devices must fade into the background, where they will assist people without distracting them from the task at hand."



The Seattle Lab is already attracting top talent and getting visibility in the research community. Not long after it was formed, Gaetano was able to bring on board a prodigal son, Anthony Lamarca (UW CSE Ph.D. 1997), who after graduating from UW spent three years at Xerox PARC and then joined a small research team at Yahoo! led by Udi Manber (who recently also returned to Seattle as Chief Algorithms Officer at Amazon.com). Anthony is working on some interesting ubiquitous computing projects such as Plantcare (an autonomous, intelligent robot plus sensor-net system for watering house plants) and Rain (a super-lightweight XML-based messaging system). Of the former, Anthony says "we realize that watering plants is not Intel's next big business opportunity. Rather we chose Plantcare because it has a number of key characteristics. First, it involves both sensing and actuation in a non-contrived physical environment. It also has no explicit human users, eliminating the temptation to ask users for help. Finally, it has very clear evaluation criteria: if the plants stay green, we got it right, if they turn brown and die, we did it wrong."

Lamarca is part of a growing team that consists of Ph.D. researchers, affiliated faculty, and a growing number of students who find a supportive environment in the Lab. Intel plans to have approximately 20 Intel researchers and an equal number of university researchers when the lab reaches its steady-state. They will collaborate closely in an environment that promotes sharing of knowledge, a commitment to timely publication of results and their broad diffusion.

Students are one of the most important parts of the lab. Most top industry research labs run a summer intern program that

(continued on Page 7)

Paul G. Allen Center for Computer Science & Engineering

Join us for the
Dedication and Open House
October 9, 1:30 to 4 pm



Karen Orders, University of Washington

"The technology community recognizes that University of Washington Computer Science & Engineering is an important asset. This project is a wonderful example of the private community working with a great public institution to accomplish a significant goal."

Tom Alberg
Madrona Venture Group
CSE Campaign Co-chair

Support for the Paul G. Allen Center

\$42 million private
\$20 million UW
\$10 million state funding
10 private donations of
\$1 million or more
75 additional donations of
\$25,000 or more
More than 250 donations in total

College of Engineering



Section Editor: Sandra Marvinney
UW College of Engineering



Mary Levin, University of Washington

At a reception honoring their contributions to the new CSE building, Paul Allen and Bill Gates share tales of their youthful exploits on UW computers. L to R: Dean of Engineering Denise Denton, UW Regent Ark Chin, Governor Gary Locke, Bill Gates, Paul Allen, and Professor Ed Lazowska.

A Salute to Our Supporters

A building dedication is a celebration of completion and of anticipation for the future. When the doors open for the October 9 dedication of the Paul G. Allen Center for Computer Science & Engineering, the celebration will be rousing on both counts. After four years of design, fundraising, and construction, this state-of-the-art facility for Computer Science & Engineering has finished on time and on budget.

The department, the College of Engineering, and the University of Washington will celebrate the completion of the \$72 million project and salute the many friends and alumni who laid the foundation for this success. Private donations contributed \$42 million of the total funding, including leadership gifts of \$14 million from Paul G. Allen, \$7.2 million from Microsoft Corporation, and \$6.5 million from the Bill & Melinda Gates Foundation. Seven additional gifts of \$1 million or more were received, and more than 250 donors in total contributed to the campaign, which was led by Tom Alberg, managing director of Madrona Venture Group, Jeremy Jaech, CSE alumnus and co-founder of Aldus and Visio, and faculty member and Bill & Melinda Gates Chair Ed Lazowska.

"Our friends and alumni recognize the importance of having a top computer science program in the region," said David Notkin, Bradley Professor and department chair. "The support we have received is incredibly gratifying. We are so proud to celebrate a public/private partnership that is unprecedented in UW history."

Major categories of donors include department alumni, friends in the state's technology industry, and venture capitalists who recognize CSE's significant role as a catalyst for startup companies and as a source of superbly trained graduates for staffing. Corporations such as Microsoft, Intel, and Dell also have made significant in-kind equipment and software donations.

As one of the nation's top 10 computer science and computer engineering programs, the combination of exceptional faculty, great students, dedicated staff, and now a building worthy of the twenty-first century, bodes well for the future. "The computer science field is exploding in importance, and student demand and intellectual opportunity are greater than ever," Lazowska said. "This wonderful new building is the tool we need, not just to remain competitive, but to reach our full potential."

Computer Science & Engineering

CSE Buildings

In the beginning . . . was **Roberts Hall** in the southeast corner of campus, CSE's home from 1967 to 1975.

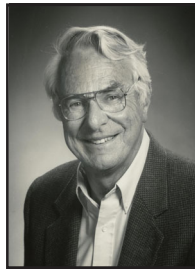


Sieg Hall

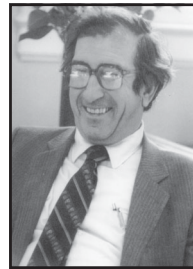
Home from 1975 to 2003, prime central campus location and rallying ground for 1970's era antiwar protests The building was dispersed nationwide as prospective grad students took home "a piece of the rock."



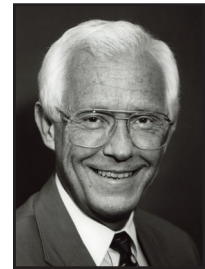
CSE Leaders



Jerre Noe
1968–1976



Hellmut Golde
1976–1977



Bob Ritchie
1977–1983

1967

1967– Computer Science Group formed; M.S. & Ph.D. programs approved.

1973

1974 – CSE achieves department status.

1975 – B.S. program approved; move to Sieg Hall.

1983

1982 – National Academies rank CSE program among nation's top 10.

The Computer Revolution



From the late 1960s to early 1970s, the UW Academic Computer Center had a Control Data Corporation (CDC) 6400 computer (similar to the model at left), programmed by punch cards and featuring 10MHz clock speed. Around the time of the move to Sieg Hall in the mid-1970s, CSE had its own Xerox Data Systems (XDS) Sigma 5 like the model shown above.



~ The Journey from 1967 to 2003



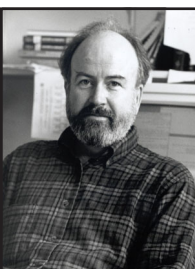
Mark Murray, UW CSE

Paul G. Allen Center for Computer Science & Engineering

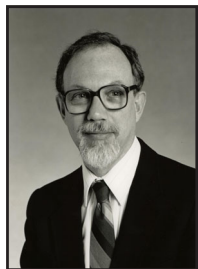
CSE's home for the
21st century ~
Dedication Ceremony
October 9, 2003



Karen Orders, University of Washington



Paul Young
1983–1988



Jean-Loup Baer
1988–1993



Ed Lazowska
1993–2001



David Notkin
2001–

1993

2003

1989 – CSE moves to College of Engineering and adds computer engineering undergraduate program.

1996 – Professional Masters Program added to degree offerings.

2003 – Dedication of the Paul G. Allen Center for Computer Science & Engineering.



In 1979 CSE acquired an early VAX-11/780 like the model at left. Shortly thereafter CSE acquired a DECsystem 2060 (above), a powerful system for its day.



A grad student in the early 1980s works on the Eden Node Machine, a multiprocessor with several Intel iAPX-432 processors. CSE built prototypes of personal workstations under the first National Science Foundation grant to create a “building-sized computer” from a federation of personal workstations.



The HP/Compaq is the most common tablet PC used by faculty and students today.

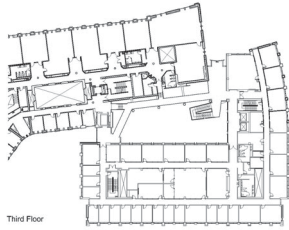
“The Paul G. Allen Center is a world-class facility for an outstanding computer science and engineering program. It will further the excellence that is an essential cornerstone of our region’s growth and leadership in the information technology sector.”

Rob Short
Microsoft Corporate Vice President,
UW CSE Alumnus, and Allen Center Donor

The Allen Center ~ Dream to Reality ~

July 1999

LMN Architects begin
design development



May 2000

Fundraising launched

June 2001

Demolition of old EE building

October 2001

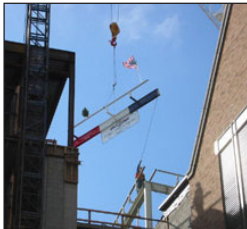
Construction begins

February 2002

Naming gift received
from Paul G. Allen

October 2002

“Topping Out” of new building
(last piece of structural steel placed)



February 2003

Roof on, windows in, building “closed”

July 2003

Fundraising goal achieved
First phase of move-in



September 29, 2003

Doors open for the start of
the academic year

October 9, 2003

Dedication Ceremony

A Peek Inside The Allen Center

*Seven stories
85,000 square feet
Soaring atrium
Spectacular views
State-of-the-art labs
A place for people
A catalyst for innovation
Honoring of history
Reaching for the future*

**Come explore
on October 9!**

Karen Orders, University of Washington



Welcome! A soaring, light-infused, six-story glass atrium invites visitors, students, faculty, and staff into the Paul G. Allen Center for Computer Science & Engineering. The 5,000 square-foot Microsoft Atrium, reaching 100 feet high, is a key architectural element and prime building amenity. A cafe will draw department members during the day, while on evenings and weekends the flexible space can be transformed for conferences, workshops, receptions, and dinners. On four levels open sky bridges connect the atrium to the adjacent Electrical Engineering building to encourage cross-disciplinary interactions.

The Allen Center's seven stories (including basement laboratories) nearly triple the space available to CSE in overcrowded and crumbling Sieg Hall. The atrium, administrative offices and student services spaces comprise the first floor. Floors two through six intermix laboratories, offices, conference rooms, and formal and informal areas for interaction. On the sixth floor, the Bill & Melinda Gates Commons, a meeting and conference area with outdoor terrace, offer sweeping views of Lake Washington and the Cascade Mountains – a fine setting for seminars, meetings, and social events.

Dramatic and contemporary, the Allen Center also is warm, welcoming, and people-oriented with inviting gathering spaces for the sorts of spontaneous exchanges that catalyze great ideas. CSE and UW history are honored by the reproduction of the Steam Powered Turing Machine mural from Sieg Hall, and views from south-side offices onto the Sylvan Grove and the four columns from the original UW building dating to 1861. An eye to the future is evident in the Mobile Robotics and the Real Time Motion Capture laboratories.

“The Allen Center meets all our goals for a twenty-first century facility,” said Hank Levy, Microsoft Professor and spearhead of department planning for the building. “We wanted a pleasant, flexible, and efficient working environment to facilitate teaching, learning, collaboration, and experimental research. The fiber and wireless networks so critical to computer work are an integral part of building design. Just as important as these inner elements, the windows are large and they open! Working in a building filled with light and connected to the outside world will be invigorating. We are excited to get in and get to work. The true measure of this building will be what we do inside that takes our programs to the next level of excellence.”

The Allen Center design is the work of LMN Architects, the Seattle firm that designed two of the city's most acclaimed cultural facilities, Benaroya Hall and McCaw Hall. The general contractor was M.A. Mortenson.

CSE Professor founds silicon startup in Seattle

Three winters ago, Computer Engineering major Chad Lindhorst recalls, he had a hole in his schedule -- a lucky hole, as it turned out. As Chad tells it, "I looked through the catalog and found (Professor) Chris Diorio's *Introduction to VLSI Design* course. I didn't know anything about it, but it was the only course that fit my schedule."

Chad loved the course. "We got to do detailed design of integrated circuits from scratch -- from the very bottom, the simplest primitives. It was a totally different level of circuit design from what's done in other classes, much closer to the physics involved."

In another stroke of luck, Chad graduated from the University of Washington just as Chris Diorio and his own mentor from the California Institute of Technology, Professor Carver Mead, were putting together a new company called Impinj™. Impinj's Self-Adaptive Silicon™ technology uses silicon-device physics to continuously fine-tune the performance of individual MOS transistors (FETs) in CMOS circuits during normal usage.

The self-adaptive technology originated during the 1990s, in Carver Mead's laboratory at Caltech. Carver's challenge, to Chris Diorio and his other graduate students, was "Can we find a way to build adaptation directly into individual transistors, thereby enabling large-scale adaptive signal-processing circuits?" The goal at that time was to mimic the adaptability to local conditions (or 'plasticity') exhibited by neural synapses, to enable the implementation of silicon neural networks.

Chris achieved the first breakthrough in 1995, and went on to garner ten patents for his graduate research. Several years later, Chris, by now a Professor with UW CSE, together with graduate student Miguel Figueroa, used the self-adaptive technology to build a high-performance mixed-signal filter in logic CMOS. This application showed the promise of Self-Adaptive Silicon in mixed-signal circuit design, by improving a circuit's performance after chip fabrication without resorting to mechanical techniques such as laser trimming.

In May 2000, Carver and Chris founded Impinj, Inc. to commercialize the technology. George Gilder, author of *Microcosm* and *Telecosm*, wrote in his investment newsletter; "Impinj can make mixed-signal systems-on-a-chip that are 30 times smaller, use ten times less power, cost much less to build, and by some metrics perform two orders of magnitude better than today's leading-edge products."

Diorio invited Chad and a fellow UW VLSI student, Adnan Sulejmanpasic, to join Impinj. "I had another job all lined up, but Chris said, 'Come on, it'll be fun.' I think I was actually Impinj's first employee. And it has been fun. There's so much interesting work to do here, it's amazing. We're taking a technology that hasn't even been proven yet in industry, and thinking up a lot of new uses for it. It's an adventure."

Over the next two years, Chad was joined at Impinj by fellow UW students and grads (pictured): Evan Fein (BS Math 93, MBA



00), Kam Rahimi (BSEE 89, MSEE 92, currently a PhD student), Seth Bridges (MSCS 02, currently a CSE PhD student), Troy Gilliland (BSEE 95, MSEE 96), Ryan Thurston (BSCE 01), Karina Miller (BA English Literature 89), Jaideep Mavoori (currently a CSE PhD student), Russell Byrd (BSEE 92, MSEE 94), Steve Salazar (BSCE 01), Casey Hagen (BSCE 02), Man Chun Liu (BSCE 02), Matt Rosencrantz (BSCS 01), Adnan Sulejmanpasic (BSCS 01), Miguel Figueroa (currently a CSE Ph.D. student), and Yanjun Ma (Ph.D. Physics 88).

Impinj has raised nearly \$30M in funding to date from local VCs: ARCH Venture Partners, Madrona Venture Group, and Polaris Venture Partners. The company's main office is two blocks northwest of the Fremont Bridge, which crosses the Lake Washington Ship Canal.

To learn more about Impinj's 'cool' technology, check out <http://www.impinj.com>.

datagrams

UW CSE startup Teranode licenses Labscape

Teranode, co-founded by Larry Arnstein from UW CSE, provides software technology for biotech laboratories. "People think of universities as places where you develop technologies, but we also develop people and relationships," said Charles Williams, director of the UW Office of Software & Copyright Ventures. "It's very telling that Teranode was formed from faculty and students of the University. UW is a great place to meet other talented people with a broad range of interests, and find others who share your vision for the future."

Jean-Loup Baer, Wen-Hann Wang win first annual "ISCA Influential Paper Award"

The ISCA Influential Paper Award will be presented annually by ACM SIGARCH and IEEE-CS TCCA at the jointly-sponsored International Symposium on Computer Architecture, to recognize the paper from the ISCA symposium 15 years earlier that has had the greatest impact on the field of computer architecture in the intervening years in terms of research, development, products or ideas. The inaugural ISCA Influential Paper Award was presented at the 2003 ISCA symposium to CSE professor Jean-Loup Baer and his then-graduate-student (now Intel architect) Wen-Hann Wang, for their 1988 ISCA paper "On the Inclusion Properties for Multi-Level Cache Hierarchies."

Domingos, Popovic win CSE's 9th and 10th Sloan Research Fellowships

Assistant Professors Pedro Domingos and Zoran Popovic have been named to the 2003 class of Sloan Research Fellows. The Sloan Research Fellowship program recognizes the nation's most outstanding young faculty members in the sciences. Domingos and Popovic are CSE's 9th and 10th Sloan recipients, joining Tom Anderson, Brian Curless, Chris Diorio, Alon Halevy, Raj Rao, David Salesin, Steve Seitz, and Dan Suciu. Domingos and Popovic each have been recognized previously with NSF CAREER Awards.

Raj Rao wins Office of Naval Research Young Investigator Award

CSE professor Raj Rao has been named one of 26 FY03 Office of Naval Research Young Investigators. The ONRYIs come from all fields of science and engineering; this year two were awarded nationally in the Mathematical, Computer and Information Sciences Division and two in the Cognitive, Neural, and Biomolecular Science and Technology Division. Rao is CSE's sixth ONRYI Award recipient. He joins Brian Bershad, Chris

Diorio, David Salesin, Steve Seitz, and Dan Weld. Rao has previously been recognized by a David and Lucille Packard Foundation Fellowship for Science and Engineering (CSE's 2nd), a Sloan Research Fellowship (CSE's 8th), and a National Science Foundation CAREER Award (CSE's 29th, including predecessor programs).

CSE Alum Albert Greenberg named AT&T Fellow

Since 1982, AT&T has acknowledged publicly those individuals in AT&T's technical community who have made continuous, outstanding and unique contributions to AT&T and the world through their technical and scientific achievements. In 2002, CSE Alum Albert Greenberg was named an AT&T Fellow for groundbreaking contributions to IP traffic measurement and network management tools.

UW developing AI caretakers for Alzheimer's sufferers, other impaired patients

A paper presented at AAAI by UW CSE professor Henry Kautz is receiving widespread press coverage, including articles in *Wired* and *USA Today*, an interview on Minnesota Public Radio (7/24/02 program in the archives), and an article in *University Week*. Professors Gaetano Borriello, Oren Etzioni, and Dieter Fox are co-PIs. Also, *Newsweek* profiled CSE Ph.D. student Don Patterson and his research on artificial intelligence technologies to assist Alzheimer's patients. "For a guy who knows the software guts of a Tomahawk missile [Patterson is a former Navy lieutenant], programming a handheld should be a no-brainer."

UW CSE startup Performant acquired by Mercury Interactive

Mercury Interactive has acquired UW CSE startup Performant, Inc. Performant, co-founded in 2000 by CSE graduate students Ashutosh Tiwary and Przemek Pardyak and CSE faculty member Hank Levy, builds software products focused on performance problem solving and tuning, particularly of Java 2 Enterprise Edition (J2EE) applications. Performant has 30 employees, including CSE Ph.D.s Ted Romer and Lauren Bricker. Tiwary, CTO and Chairman of Performant, will become VP of J2EE Diagnostics at Mercury Interactive.

Venkat Guruswami wins ACM Doctoral Dissertation Award

CSE Assistant Professor Venkat Guruswami has been named the winner of this year's ACM Doctoral Dissertation Award, for the most outstanding dissertation in the field of computer science. Venkat's dissertation, "List Decoding of Error-Correcting Codes," was supervised by Madhu Sudan at MIT.



UW CSE SDBC (San Diego Branch Campus)

During 2001-02, former UW CSE department chair Ed Lazowska spent a sabbatical at UC San Diego, where there are six UW CSE alums - five Ph.D. and one Bachelors - on the Computer Science & Engineering faculty! L-R: Stefan Savage, UW CSE Ph.D. 2002, networking; Bill Griswold, UW CSE Ph.D. 1991, software engineering; Fran Berman, UW CSE Ph.D. 1979, scientific computing; Ed Lazowska; Geoff Voelker, UW CSE Ph.D. 2000, systems; Dean Tullsen, UW CSE Ph.D. 1996, computer architecture; Brad Calder, UW CSE B.S. 1991, computer architecture.

Intel Research Seattle

(continued from page 4)

lets graduate students work side-by-side with a research sponsor. The Seattle lab takes this a step further by keeping students, and their faculty advisors, engaged year-round with rotating intern positions. Intel's goal is to make sure this is a two-way street where students and their advisors benefit as much from the interaction as Intel researchers.

Jeff Hightower, a UW CSE Ph.D. candidate, is one example of how interactions with Intel Research amplify their thinking and their work. As part of his thesis work Jeff has been developing "The Location Stack", a general framework and common vocabulary for virtualizing location-sensing hardware and fusing measurements into a single representation that represents the probabilistic uncertainty in the measurements explicitly.

For more information on Intel Research Seattle, go to <http://www.intel-research.net/seattle/>.

Jerre Noe, CSE's first chair, celebrates 80th birthday

Jerre Noe, recruited from SRI in 1968 as the first chair of UW CSE, turned 80 on February 1 2003.

The previous weekend, the department's earliest graduate alums and friends, as well as Jerre's more recent Ph.D. students, met at the home of alumna Judy Maleng and her husband Norm to surprise Jerre with a celebration.



Back row: Leroy Smith (Ph.D. 1972), Jack Wooley (Ph.D. 1973), Tom Kuffel (friend), Jerre Noe, Gary Nutt (Ph.D. 1972; Jerre's first Ph.D. student), Garry Kampen (Ph.D. 1973), Ed Lazowska (CSE chair-emeritus; faculty since 1977), Dick Hamlet (Ph.D. 1971).

Middle row: Jean-Loup Baer (CSE chair-emeritus; faculty since 1969), Calton Pu (Ph.D. 1986; Jerre's final Ph.D. student), Janet Geoffroy (M.S. 1970), Sally Swedine (M.S. 1971), Gary Sager (Ph.D. 1972), John Torode (Ph.D. 1972).

Front row: Alan Shaw (CSE faculty since 1971), Tai-Yuan Hou (Ph.D. 1983; a middle Ph.D. student of Jerre's), Mary Zosel (Ph.D. 1971), Hellmut Golde (CSE faculty since the founding of the department), Judy Maleng (M.S. 1971), Jim Gordon (friend).

Attending but not pictured: Jeanne Finke (M.S. 1970), Bob Herriot (CSE faculty, 1971-78), Larry Menninga (Ph.D. 1970), Ralph Mintel (friend), David Notkin (CSE chair; faculty since 1984), many spouses.

MSB is published semi-annually by UW CSE to provide current information about its students, faculty and alumni. **MSB** is supported by the CSE Industrial Affiliates Program. Volume 14, Number 1 editor was Scott Dakins. We thank contributors Chris Diorio, Ed Lazowska, Sandra Marvinney, David Notkin, and Bill Schilit. Photo credits include Mary Levin, Karen Orders, Mark Murray, and Katherine Ready.

Bob Wallace: The Soul of the New Machine

Personal computer software pioneer Bob Wallace -- UW CSE Bachelors and Masters alumnus, employee #9 at Microsoft, and subsequently the inventor of "shareware" -- died unexpectedly on September 20, 2002 in his home in San Rafael, California. He was 53.

"Gentleness" and "integrity" are adjectives that recur frequently in the many newspaper articles commenting on his passing. Said Paul Allen in the New York Times, "I remember Bob as a gentle soul who was soft-spoken, but creative, persistent, and meticulous in his programming and thinking."

Bob studied computer science with Andy van Dam at Brown University from 1967-69. (UW CSE faculty members Ed Lazowska, John Zahorjan, David Notkin, David Salesin, and Zoran Popovic also studied with Andy.) He then headed west, studying a year of theater arts and a year of computer science at UC Santa Cruz. Making his way north to Seattle, Bob completed his Bachelors in computer science at the University of Washington in 1974, and his Masters in 1978.

Bob joined Microsoft after completing his Masters degree. Uncomfortable with some aspects of the industry he helped to create, Bob left Microsoft in 1983 to found

msb p8



Microsoft Albuquerque Group, December 7, 1978. Top row: Steve Wood, Bob Wallace, Jim Lane. Middle row: Bob O'Rear, Bob Greenberg, Marc McDonald, Gordon Letwin. Front row: Bill Gates, Andrea Lewis, Marla Wood, Paul Allen. Missing from photograph are Ric Weiland and Miriam Lubow. Photo courtesy Microsoft Archives.

Quicksoft, which marketed a text processing program of Bob's design called PC-Write. PC-Write was the first "shareware" program. At its peak, in the late 1980s, Quicksoft had 32 employees and more than \$2 million in annual sales. Asked by Seattle Times columnist Paul Andrews why he continued to distribute PC-Write as shareware rather than selling it in the traditional way, Bob said "I'm out to make a living, not a killing." Andy van Dam points out that in the 1960s, no one thought of software as a way to make money: "It was a way to bring the power of the hardware to the users, and it was a mind-expanding exercise for the programmer. Bob was a flower child in the nicest sense of the word."

most significant bits

newsletter of uw computer science & engineering

volume 14, number 1, summer 2003

university of washington

Computer Science & Engineering
University of Washington
Box 352350
Seattle, WA 98195-2350

FORWARDING & RETURN POSTAGE GUARANTEED
ADDRESS SERVICE REQUESTED