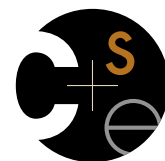




most significant bits

newsletter of uw computer science & engineering

volume 15, number 1, winter 2005



university of washington

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From left:
Lisa Wissner-Slivka,
Hank Levy, and
Benjamin W. Slivka

Creating Futures at UW CSE

Wissner-Slivka Endowed Chair points the way

Computer Science & Engineering has gained a new endowed chair, thanks to a \$1 million gift from the Wissner-Slivka Foundation. Prof. Hank Levy, associate chair of CSE and an expert on computer systems design, was honored as the first holder of the Wissner-Slivka Endowed Chair in Computer Science & Engineering at an installation ceremony on November 30 (more photos on back cover).

"This endowment is a stellar example of the expanding investment in faculty and student excellence since the opening of the Paul G. Allen Center," said David Notkin, chair of CSE. "Ben Slivka and Lisa Wissner-Slivka are helping to create CSE's future, and we have enormous gratitude for their generous support."

The Wissner-Slivka gift is the latest in the current phase of CSE's participation in Campaign UW, the University of Washington's \$2 billion comprehensive fundraising effort. It qualified for UW matching funds of \$500,000 to create a \$1.5-million endowment. "Our friends and alumni are excited about this UW matching program because it significantly magnifies the power of their contributions," said Prof. Ed Lazowska, who directed the Allen Center capital campaign and now leads CSE's effort to secure endowments for "the people part" — scholarships, fellowships, professorships, and chairs.

Ben Slivka and Lisa Wissner-Slivka both graduated from Northwestern University with bachelors degrees in computer science. Ben — a Seattle native who graduated

Continued on page 6

from where I sit...



October 15th marked the public launch of Campaign UW: Creating Futures - the UW's eight-year, \$2 billion comprehensive fundraising effort. The campus hosted "Come Together Washington," an event at Hec Edmundson Pavilion for literally thousands of students, staff, faculty, and the general public. The event had two primary parts: a "Showcase" of 32 exhibits representing UW research and education, and presentations by Bill Gates - both pere and fils - and new UW President Mark Emmert.

All 32 Showcase exhibits were impressive, but what the Showcase really drove home to me was the breadth of CSE's involvement across the campus. Two of the 32 exhibits were "core" CSE - pretty amazing in and of itself, given the number of units campus-wide. Beyond this, though, we had our fingers in lots of the other exhibits - at least seven others! Even *I* was amazed and impressed. I always talk about how broad and interdisciplinary our work is, but it was awesome to see it laid out so clearly to the public!

The first "core" CSE exhibit featured Dieter Fox's RoboDawgs effort - Sony AIBO robot dogs programmed (largely by CSE undergraduates) to play team soccer as part of an annual international competition, RoboCup, which has the ultimate goal of creating autonomous, humanoid robots that can beat the 2050 FIFA World Cup soccer champions. Not only is there wonderful science, engineering and technology underneath the RoboDawgs, but they capture the imagination of everybody who watches them. This may well have been the most popular of all the exhibits at the Showcase, with people elbowing each other to get closer to the action!

The second "core" CSE exhibit featured Barbara Mones' computer animation courses. These courses, part of CSE's Animation Research Labs, comprise an interdisciplinary sequence that takes students with backgrounds in computer science, art, music, etc., teaches the basics of animation and animation production, and culminates in the design and production of a short animated film. The curriculum is based on an industry standard pipeline of modeling, texturing, lighting, animating, rendering, and post-production. The films are often invited to various film festivals, sometimes internationally! This exhibit, too, was packed the entire evening.

Both of these were incredibly popular and very high-impact. Both were really complex to set up and staff, so I once again pass on my personal thanks to everyone who made them happen. Furthermore, both were staffed largely by our great students (many of them undergraduates), which is typical of how we integrate research and education in CSE, and perfect for an event like this.

But wait, there was much, much more!

The "Exploring Neuroscience" exhibit featured our Adjunct faculty member Jim Brinkley, and explained work at UW that is teaching neuroscience to kids.

Another exhibit featured UW's unique Digital Arts graduate program, which focuses on how computing can push the state-of-the-art in art. This program was launched through our partnership with Richard Karpen (Music) and Shawn Brixey (Art) in creating the animation program nearly a decade ago. Barbara Mones and others continue to be closely involved in DXARTS.

The exhibit on "Learning About Politics through Election Day Computer Simulation" involved several of our undergraduate students. I hadn't been aware of this connection at all until I read the Showcase brochure!

The "NEPTUNE Ocean Observatory" exhibit featured John Delaney's project to establish a regional ocean observatory on the Juan de Fuca plate. There are an incredible number of interesting computer science issues, and Ed Lazowska is involved with the project, which received the largest ITR award from the National Science Foundation this year.

The exhibit on "Early Learning and the Brain," featured the work of Pat Kuhl and Andy Meltzoff, with whom Raj Rao has extensive research collaborations - Raj's humanoid robot and one of our recent graduates even showed up on their slide show!

The exhibit on “Exploring the Human Genome” involved CSE Adjunct faculty member Maynard Olson (plus many Engineering friends such as Mary Lidstrom and Deedee Meldrum).

The exhibit on “ubit - Universal Benefit from IT” was led by CSE Adjunct faculty member Melody Ivory-Ndaiye, and included aspects of her collaborations with Richard Ladner and Raj Rao.

I bet I’m missing one or two other CSE connections, but the entire Showcase was so big and broad that it was hard to see everything.

Later on in the evening, Bill Gates III mentioned a number of CSE interactions in his keynote speech, highlighting David Salesin in particular. And our UW Computing & Communications superstar friends Ron Johnson, Terry Gray, David Richardson, Mike Wellings, et al. (Ron and Terry are Adjunct/Affiliate faculty in CSE) streamed live HDTV over the Internet from UW campuses in Italy and China.

“Come Together Washington” was an outstanding way to display the incredible talents of UW, and of UW CSE. It was also an outstanding way to launch the public phase of Campaign UW: Creating Futures. We’re grateful for the continued support of our alumni and friends - support that allows us to approach the future with confidence.

Take a look at the “Come Together Washington” event website:

http://uwfoundation.org/events_pubs/ctw_intro.asp

Also the CSE campaign website:

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



David Notkin
Bradley Professor and Chair

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We thank contributors Tom Anderl, Gaetano Borriello, Waylon Brunette, Bruce Hemingway, Ed Lazowska, Sandy Marvinney, David Notkin, Rob Harrill, and Nancy Wick. Photo credits include Mary Levin, Dan Lamont, and Ed Lazowska.

datagrams

Faculty Promotions and New Hires!

Effective Fall Quarter 2004, Pedro Domingos, David Wetherall and Zoran Popović were all promoted to Associate Professors with tenure. Joining the CSE faculty ranks this year is Senior Lecturer Stuart Reges, coming to us from the University of Arizona. Stuart is helping to completely revamp our introductory computing courses.

Gary Kildall featured in Parade Magazine

CSE Ph.D. alum Gary Kildall was recently featured in a Parade Magazine article profiling those who have had an impact on life as we know it, as presented in the PBS series and book, *They Made America*. From the article: “He was the true founder of the personal computer revolution and the father of operating systems for the PC software industry.” For more on *They Made America*, see article on page 5.

Lazowska named one of Seattle’s 25 “most influential people”

In the annual listing of the 25 most influential people in Seattle, compiled by *Seattle* magazine, appears our own dear Ed Lazowska. “Who are the heavy hitters who make things happen locally in business, arts, sports, religion, philanthropy, politics, and more? We combed the city to come up with these Top 25. Seattle just wouldn’t be Seattle without them.” In addition to Lazowska, the honorees include Paul Allen (CEO, Vulcan Inc.), Bruce Carter (President and CEO, Zymogenetics), Gene Duvernoy (President, Cascade Land Conservancy), Joel Horn (Executive Director, Seattle Monorail Project), Deborah Jacobs (Seattle City Librarian), Robert Jeffrey (Publisher/CEO, ColorsNW magazine), Carl Mack (President, King County NAACP), Jim McDermott (U.S. Congressman), Jamie & Karen Moyer (Seattle Mariner, and founders, The Moyer Foundation), Patty Murray (U.S. Senator), and Patty Stonesifer (President and Co-Chair, Bill & Melinda Gates Foundation). For photos and a full quote from Ed, check out

<http://lazowska.cs.washington.edu/seattlemag3.jpg>

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

tactile graphics.....

The Tactile Graphics Project, a multidisciplinary effort of UW's Department of Computer Science & Engineering, Information School and DO-IT (Disabilities, Opportunities, Internetworking, and Technology) is working to increase availability of resources to blind students. They are doing this by building an editing tool that will automatically create Braille images of drawings, graphs, charts and diagrams published in textbooks, research papers and Web pages. Their goal is to enable k-12, college, undergrad, and graduate students who are blind to have full access to mathematics, engineering and science.

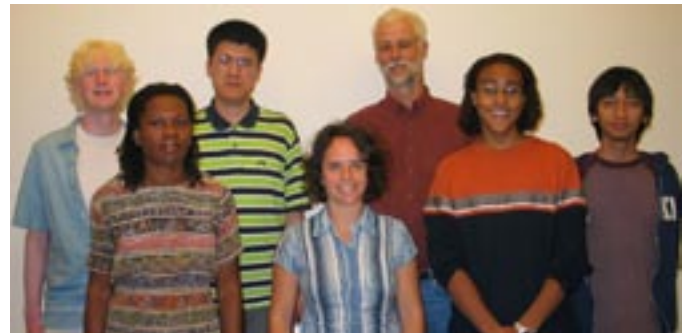
"Blind students with whom we work face significant barriers because of the challenges in converting graphical images to a tactile form," said Melody Y. Ivory-Ndiaye, Assistant Professor at the Information School. "An outcome of the current funded project will be to make this content more accessible to these capable students."

Recently, the UW has been awarded a \$749,188 grant from the National Science Foundation to find the best ways to represent in tactile form the graphical images found in scientific, engineering and mathematical books, papers and digital formats for use by students with visual impairments. The researchers will also seek ways to automate the work as much as possible.

For many years, conversion of standard text to Braille output has been automated using Braille translation software along with refreshable Braille displays and Braille embossers, according to Richard Ladner, CSE professor and principal investigator for the project (Melody Ivory-Ndiaye, of the Information School, Rajesh Rao of Computer Science &



UW Information School undergraduate Andy Martin analyzes the Braille translation of the image of an eye as part of the Tactile Graphics Project.



UW Tactile Project researchers include Andy Martin (iSchool), Assistant Professor Melody Ivory (iSchool and CSE), Sangyun Hahn (CSE), Beverly Slabosky (iSchool), Professor Richard Ladner (CSE), Dmitri Groce (Garfield High School), and Satria Krisnandi (CSE).

Engineering, and Sheryl Burgstahler of Computing & Communications are Co-PIs on the project). But, Ladner explained, tedious handwork is usually required to convert graphical images into a tactile format. This cumbersome process presents a significant barrier to students with visual impairments who wish to pursue science, technology, engineering and mathematics fields.

The current project will explore ways to automate the conversion of graphics from printed/electronic form to tactile format so that transcribers can efficiently convert graphical images to tactile form for students who are blind. Such a process would also allow blind and sighted users to automatically translate common types of graphical images like bar and line charts found on Web pages.

"The transformation of graphs and charts to a tactile form requires the clever use of existing and new image processing and understanding techniques," Ladner explained. "Multicolored images must be transformed into very low resolution images with few colors to be accessible tactually. In addition, all the text in the image must be enlarged, relocated, and converted to Braille. Solving these problems is a key component of the research."

Ivory added, "We are most interested in developing a tool which fits within transcribers' current work practices and enables them to meet the demand for image conversion in an efficient manner."

Burgstahler reported that in University outreach projects, she works with students with all types of disabilities who are preparing for college programs and careers in science, technology, engineering and mathematics. "Blind students with whom we work face significant barriers because of the challenges in converting graphical images to a tactile form," she said. "An outcome of the current funded project will be to make this content more accessible to these capable students."

they made america: UW CSE alumnus gary kildall

UW CSE alumnus Gary Kildall is prominently featured in the new book *They Made America*. Written by Harold Evans in conjunction with a four-part PBS series that originally aired in November 2004, the book profiles 70 of America's leading inventors, entrepreneurs, and innovators.

As a student at the University of Washington, Gary received three degrees: a Bachelor's degree in Mathematics in 1967, a Master's degree in Computer Science in 1968, and a Ph.D. in Computer Science in 1972. He was hired as an assistant professor at the Naval Postgraduate School in Monterey, and later joined Intel Corporation to write programming tools for the Intel 4004 microprocessor.

A pioneer in the computer revolution, Gary developed CP/M, which became the dominant microcomputer operating system of the 1970s. He was one of the first people to recognize that even the early, simple microprocessors could support a complete minicomputer-style operating system, and he created an editor, assembler, linker, and loader, along with the first file system to use floppy disks as a general-purpose storage medium. As personal computers began to be used, he saw that their true potential would be in connectivity, so he developed extensions to CP/M that let computers share files and peripheral devices over a network.

Gary's company, Digital Research, Inc., introduced operating systems with windowing capability, preemptive multitasking, and menu-driven user interfaces years before Microsoft developed Windows. He also created the first practical open-



CSE Ph.D. alum Gary Kildall is featured prominently in Harold Evans' book *They Made America*, a companion piece to the recent PBS series profiling America's leading inventors, entrepreneurs and innovators.

system architecture, which allowed operating systems and application programs to be independent of the specific machines on which they ran. A firm believer that life and work should be fun, Gary also developed an early computer-based arcade game as well as precursors to current interactive multimedia.

Gary passed away in 1994, at the age of 52. His daughter Kristin established the Gary Kildall Endowed Scholarship in his honor in 1997, and it has been awarded every year since that time to an outstanding UW CSE undergraduate student.

Buy the book - it is truly inspirational! Further information on Gary's accomplishments may be found on the CSE web at <http://www.cs.washington.edu/campaign/ugrads.html>.

brian bershada wins mark weiser award



UW CSE professor Brian Bershada has been honored as the fourth recipient of the Mark Weiser Award.

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, Weiser was claimed by cancer in 1999 at the age of 46.

Bershada received his Bachelors degree from UC Berkeley in 1986 and his Ph.D. from the University of Washington in 1990. He began his faculty career at Carnegie Mellon University, returning to UW as a faculty member in 1993. Previous recipients of the Weiser Award are Frans Kaashoek (MIT), Mendel Rosenblum (Stanford), and Mike Burrows (Google).



CAMPAIGN UW CREATING FUTURES

Endowed chair *(from page 1)*

from Garfield High School — also earned a masters in computer science at Northwestern, and Lisa holds an M.B.A. from UW. Both are Microsoft alums. Lisa worked there for six years as a program manager and product manager on programming language tools and electronic mail applications. Ben was at Microsoft from 1985 to 1999, and worked on OS/2, MS-DOS, Windows, Java, and MSN. He established the Internet Explorer team and led it through the release of IE 3.0.

Ben and Lisa established the Wissner-Slivka Foundation in 1997 to support educational initiatives. “We have been very impressed by the quality of the faculty and students at CSE and the diverse areas of research they are pursuing,” said Ben. “As two people who have been incredibly fortunate in the field of computer science, the ability to support UW CSE with this chair was a wonderful opportunity for us and for our foundation”

Ben and Lisa are deeply engaged in community organizations and philanthropic work. Lisa serves on the boards of the Seattle Children’s Theater and the Bellevue Schools Foundation, and is chair of the Policy and Advocacy Committee for Social Venture Partners and the SVP Lead Partner for the Kinderling Center. Ben is a trustee of Northwestern University, a director of TeachFirst.com and the Garfield High School Foundation, and is the SVP Lead Partner for Seattle MESA, which offers curriculum enrichment opportunities in math, science, and engineering to K-12 students from underrepresented populations.



Remembering punch cards
In his remarks at the November 30 installation ceremony for the Wissner-Slivka Endowed Chair, Ben Slivka recalls the computer exploits of his high school days, when he got his first computer consulting work by running SPSS jobs for a UW doctoral candidate.

Other recent endowment commitments for CSE

The spring 2004 MSB reported on several gifts from CSE alumni — the Glerum Family Endowed Scholarship for undergraduates (Kirk and Melissa Glerum), the Weil Family Endowed Fellowship for graduate students (Dave and Marsha Weil), and the Torode Family Endowed Career Development Professorship (John and Patti Torode).

Recent commitments will establish the Short-Dooley Endowed Career Development Professorship (Rob Short and Emer Dooley), the Marilyn Fries Endowed Regental Fellowship (created to honor Marilyn, an early masters alumna of CSE, by her children — Bob, Ed, and Karen), the Dora Zee Ling Endowed Fellowship for graduate students (created by Dan Ling and Lee Obrzut to honor Dan’s birth mother), and the Yamasaki Endowed Scholarship (Brian Yamasaki and Debora Chen). Future issues will feature these gifts.

UW matching funds add power to donor gifts

In partnership with a special group of anonymous donors, the University of Washington has created a Campaign UW matching fund of \$40 million to stimulate investment in permanent endowments. Donors who commit \$100,000 or more, payable over a maximum of five years, are eligible to participate in the UW Matching Initiative. The matching funds augment donor gifts by 50% (1:2 ratio), up to \$500,000, and are available until all funds have been reserved. This initiative has been such a great stimulus to giving that the University hopes to secure additional matching funds.

An endowment creates a permanent legacy and a foundation for continuing excellence far into the future. An endowment for CSE supports outstanding faculty and students — innovators whose discoveries will improve our lives.

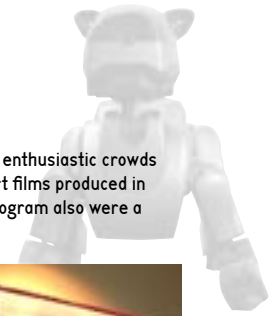
We invite you to participate in the UW Matching Initiative. For more information, contact: Ed Lazowska, Computer Science & Engineering, 206-543-4755, lazowska@cs.washington.edu; or Jan Labyak, College of Engineering, 206-543-8779, labyak@enr.washington.edu

Come Together Washington

October 15, 2004



Left: CSE's RoboDawgs drew enthusiastic crowds at the Showcase. Below: Short films produced in CSE's computer animation program also were a big hit.



More than 5000 people from the University and the community overflowed Hec Edmundson Pavilion for the public launch of Campaign UW on October 15. The event featured a showcase of faculty and student research and a program with a keynote address by Bill Gates III, who mentioned the close education and research ties between Microsoft and UW Computer Science & Engineering.

"... for me, supporting the UW ... is a strategic decision. The quality of our future depends on the quality of the University." Bill Gates III



Campaign UW Leaders Celebrate in the Paul G. Allen Center

Leaders of Campaign UW gathered on the evening of October 14 to celebrate the fundraising successes that led up to the public launch of the campaign. The Microsoft Atrium is surely the best place on campus for a balloon drop! In the year since its opening, the Allen Center has become a focal point for many University events.



Upper left: UW president Mark Emmert (center) shares the purple and gold spirit with former president William Gerberding and Connie Kravas, president of the UW Foundation.

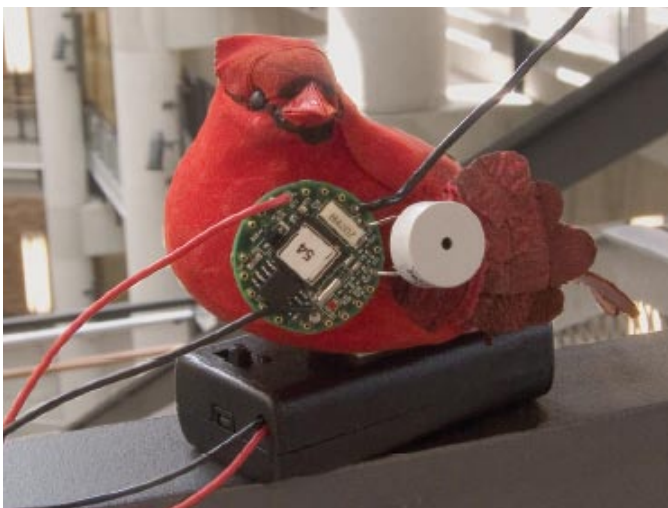
'birdsong' in the Allen Center Atrium

Computer engineering curricula have evolved dramatically over the past 20 years. The early focus was on computer architecture and CPU design. In the 1990s, attention shifted to systems built around highly integrated microcontrollers. By 2000, the software for these embedded systems assumed a more important role, and embedded operating systems provided highlevel design abstractions. More recently, wireless communication capabilities have greatly expanded the embedded applications space, leading to new system paradigms such as sensor networks.

CSE researchers Gaetano Borriello, Bruce Hemingway, Waylon Brunette and Tom Anderl have integrated the emerging field of wireless sensor networks into our undergraduate computer engineering curriculum.

The embedded software, digital design, and capstone design courses give the computer engineering program its character. They integrate software and hardware design skills and prepare students to build modern digital systems from start to finish.

In the embedded software course, students learn to use microcontrollers and their interfaces effectively to build systems that control physical devices. The digital design course teaches them to program algorithms into hardware. In the capstone design course, the students apply all their skills to products that are similar to those on which industry engineers are currently working -- in other words, products that will appear on the market one or two years after the students graduate.



A mote-sensor bird. The "Flock of Birds" embedded systems project integrates the theory and practice of wireless sensor networks into the mainstream classroom curriculum.

how it all works (the short answer)....

Goals for the flock:

Birds sing the same song for a little while.

Songs start, spread, then die out.

Over time, different songs emerge as dominant for some period of time.

Flock process flow:

1. Initialization tasks; select $x = \text{random}(0-15)$.
2. Radio off; sing birdsong $[x]$; radio on.
3. Listen for $\text{Random}(\text{min}1, \text{max}2)$ sec.
4. SendMessage "I sang song x ".
5. Listen for $\text{Random}(\text{min}2, \text{max}2)$ sec.
6. Decide which song to sing next:
 - a. Determine nearest songs.
 - b. If my song is the same as any of the nearest songs, then I'll repeat the same song.
 - c. If all nearby motes are singing the same song, then I'll switch to a different song.
 - d. If all nearby songs are distinct, then I'll switch to a different song.
7. Go to step 2 and repeat.

The "Flock of Birds" project is a simple distributed system that combines sound generation with emergent behavior in an ad hoc network. The primary goal was subjective: to generate behavior that mimics the effect of birds cooperating to sing the same song but vary the particular song over time. Each student programs a mote to act as a bird that has several songs stored in its local memory. The programs execute a common rule base, but each bird acts independently -- deciding which song to sing based on what the other birds within radio range are singing (see sidebar). In combination, the songs create the sound a flock of birds makes.

The conclusion of the project was a two-hour "concert" of 50 motes in the Allen Center Atrium. Students had to qualify their birds for admission by passing a special test designed to exclude rogue birds from the flock. Well-behaved birds graduated to the Allen Center Atrium for the performance. Students reprogrammed failed motes with code from motes that did pass, allowing everyone to participate in the concert.

The overall sound effect was quite pleasing, and even worked in three dimensions when some students moved their birds to upper balconies. The aural feedback contrasted with more conventional projects that require extended data analysis to understand the results. The results were also easier to understand than many simulation schemes.

The project also succeeded from an instructional perspective -- integrating communication protocols, constrained resources, hardware control, and a novel application that required student projects to interact. The motes supported a project that would otherwise have been too complex to implement over a 10-week quarter.

computational biology group's work featured at *Science* online

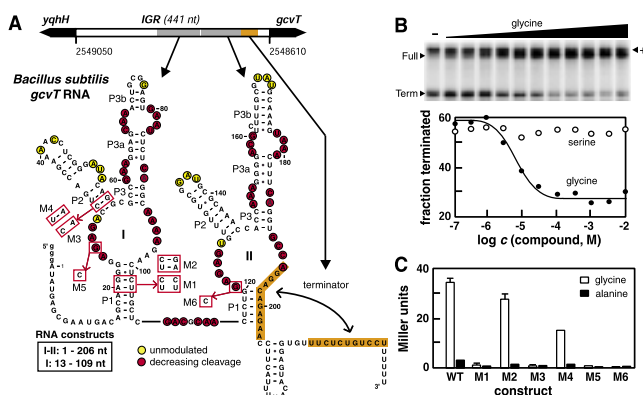
A UW CSE professor and one of his graduate students are part of a team that has discovered a pair of rare, naturally occurring RNA "switches" in a class of bacteria that work cooperatively to manage the amino acid glycine.

The finding, reported in the October 8, 2004 issue of the journal *Science*, could support the notion of an "RNA world," or an evolutionary period when RNA played a much greater role in metabolic processes. RNA stands for ribonucleic acid, a chemical that is found in cells. Its main role lies in transmitting genetic instructions from DNA to the rest of the cell and controlling certain chemical reactions. The newest riboswitch, as it's called, is unique because of its cooperative nature, representing a complex mechanism previously found only in protein enzymes.

"The current world has a combination of proteins and nucleic acids, including RNA, playing a role in life, and there is an immense chicken-and-egg problem because you can't have one without the other," said Walter Ruzzo, CSE professor with an adjunct appointment in the Department of Genome Sciences. "One theory, and it's still controversial, is that RNA played both roles at one point."

Ruzzo and CSE grad student Zasha Weinberg have been working with a group of biochemists from Yale University since February 2004, looking for RNA switches in nature. The Yale researchers had already identified the switch in question, but hadn't yet realized what they had.

That's where computer science came in. The use of computing technology to examine and compare the RNA structures is critical to the work, Ruzzo said.



UW annual fund mailing

You may soon receive an appeal from the University of Washington asking you to support the UW Annual Fund. If you choose to participate -- and we hope you do! -- please designate your gift to the **COMPUTER SCIENCE & ENGINEERING ANNUAL FUND**.

By doing so, you support all of CSE's priority areas:

- ☛ "Startup packages" that help us recruit the very finest new faculty and help them launch their careers
- ☛ Graduate fellowships and undergraduate scholarships that make a UW CSE education accessible to top students regardless of their means
- ☛ Funds for targeted innovations in research and teaching

You can also make a gift on-line: go to CSE's web page -- www.cs.washington.edu -- and click on "Support CSE".

"The key to understanding these things is to find more examples of them, and Zasha has developed some terrific computational tools that speed up the search for these structures," he said. "Because Zasha had a much more sensitive searching tool, he found that these switches usually appear in tandem. They have the same structure, but they are significantly different at the nucleotide level. The biochemists simply didn't see that they came in pairs."

The net effect of having the pair working together is that it provides a much more efficient switch in detecting glycine. Glycine is a building block for protein, but it can also be used for energy. The double switch is able to strike the right balance between having enough glycine for protein synthesis and being able to readily use any extra for energy production.

"The cooperation means that the switch turns more sharply from off to on when an excess of glycine is created," Ruzzo said.

The senior author of the paper is Ronald Breaker, professor in the Department of Molecular, Cellular and Developmental Biology at Yale. Other authors, also from Yale, include Maumita Mandal, Mark Lee, Jeffrey Barrick and Gail Mitchell Emilsson.

more datagrams

Mike Swift wins ACM Graduate Student Research Competition

At the 2004 ACM Awards Banquet in New York, UW CSE graduate student Mike Swift was announced as the winner of the ACM Graduate Student Research Competition. Mike's paper "Improving the Reliability of Commodity Operating Systems," describing work supervised by UW CSE faculty members Brian Bershad and Hank Levy, was forwarded by ACM SIGOPS as the best student paper at the 2003 ACM Symposium on Operating Systems Principles. Also at the ACM Awards Banquet, 2002 UW CSE Ph.D. alumnus AnHai Doan -- now an Assistant Professor of Computer Science at the University of Illinois -- received the 2003 ACM Doctoral Dissertation Award.

Jason Yi-Bing Lin racks up the Fellowships

CSE alum Jason Yi-Bing Lin (Ph.D. 1990 under the supervision of Ed Lazowska) writes from the National Chiao Tung University in Taiwan, "Ed has guided me through my professional career. With his nomination and assistance, I've been elected as IEEE Fellow and ACM Fellow in 2003, and AAAS Fellow in 2004. I would like to show my deep appreciation to Prof. Lazowska."

Borriello's "Smartwatch" featured in Wired News

From the November 29th, 2004 issue of *Wired News*: "Human memory is imperfect, so an RFID-enabled smartwatch that keeps track of the easily lost items in your world could be a boon. The tricky part is making sure the watch doesn't remember *everything*. At his lab in Seattle, Gaetano Borriello and his University of Washington team have built a working prototype of a smartwatch that operates using radio frequency identification tags to help people keep track of their stuff. The device is destined to become an application for the memory-challenged but is being designed with privacy rights in mind."

CSE alum Radhika Thekkath of MIPS profiled in EE Times

"The director of architecture for MIPS Technologies, and the person directly responsible for the company's recently announced signal-processing extensions ... Thekkath received a Ph.D. in computer science, not electronics engineering, from the University of Washington. 'The university has a very systems-oriented program,' she said. 'Computer science there was not a theoretical discipline at all ... My thesis, as it happened, was related to multithreading -- that was in the very early days of the work on the topic.' Now she is the keeper of the MIPS architecture. But she is also an explorer, a listener, a purveyor of 'what ifs.' To Thekkath, building

the modern architecture is not constructing an edifice in the clouds but finding ways to make the fundamentals of the MIPS architecture more valuable to real designers -- hardware and software -- in real systems."

CSE alum Hugues Hoppe profiled in Seattle PI

The Seattle PI profiled UW CSE bachelors and Ph.D. alumnus Hugues Hoppe, a Senior Researcher at Microsoft and winner of the 2004 ACM SIGGRAPH Computer Graphics Achievement Award. "Hoppe is known in the computer-graphics industry for making big advances in a technology that provides the underlying framework for three-dimensional images such as video-game characters. But around the University of Washington computer science department, where he was a graduate student in the early 1990s, Hoppe is also known for a different advance. It was called 'Dogfight.' The video game -- primitive by today's standards but advanced for its time -- was an airplane combat simulation in which players competed against one another on terminals over a network. Developed by Hoppe, it was so enthralling that it basically 'crippled the entire department for most of a year,' recalls UW computer science professor Ed Lazowska. "Hoppe called his graduate-school experience a turning point in his life, in part because of the people he was able to work with and learn from."

new UW president makes fashion statement....



On a cruise aboard the University of Washington oceanographic research vessel R/V Thomas G. Thompson, new UW President Mark Emmert models his Paul G. Allen Center fleece jacket!

industrial affiliates meeting a huge success

Traditionally, mid-winter quarter has been marked by the two-day flurry of activity in the department known as the “Annual Industrial Affiliates Meeting”.

This year, however, based on feedback we received from several of our members, we moved the meeting to early November. Along with several other format changes, this facilitated one of the most successful Affiliates meetings we’ve had in several years, with over 130 Affiliate members registered to attend.

Among the changes and enhancements we made this year:

- ◆ moving the meeting to autumn quarter, to enhance recruiting opportunities for both our Affiliates and our students;
- ◆ having the entire two-day meeting held in the Paul G. Allen Center for Computer Science & Engineering, rather than using multiple locations;
- ◆ spreading the poster session throughout the building into the various research labs, to better display our facilities to our Affiliate members;
- ◆ changing the focus of our research talks from specific research areas, to research applications, such as “Our Role in the Biology Revolution”, “Making Life Easier for Disabled People”, and “Making Systems more Reliable and Secure”;
- ◆ adding an afternoon research lecture by Chris Diorio, CSE professor and co-founder of Impinj, on “The RFID Revolution”, as well as an evening keynote address by Rick Rashid, Senior Vice President at Microsoft Research, on “Empowering the Individual”, an examination of the effects of changing technologies on our lives;
- ◆ having the Annual Affiliates Recruiting Fair in the Atrium of the Allen Center (This was a great success, and we had a record 24 companies recruiting in the department on that Friday).



The 2004-05 Annual Industrial Affiliates Meeting Recruiting Fair was a resounding success, with 24 companies and hundreds of students filling the Microsoft Atrium in the Paul G. Allen Center for Computer Science & Engineering on November 5, 2004.

The main objective of the Affiliates Program is to support the mutual needs of business, industry and academia in computer research, development, and education. The annual meeting is one of the venues through which we pursue this goal.

For more information on the CSE Industrial Affiliates Program, please check us out on the web at www.cs.washington.edu/affiliates

And we hope to see you at our next meeting, Thursday and Friday, November 3-4, 2005!

Senior Vice President of Microsoft Research Rick Rashid gave the keynote address after the Affiliates Meeting Dinner November 4. His topic was “Empowering the Individual”, an examination of changing technologies and the new opportunities for creating the next generation of applications that may change the quality of our lives.



more photos from the wissner-slivka endowment ceremony



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most significant bits

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