

Borriello and Ebeling Win University Distinguished Teaching Award

Professors Gaetano Borriello and Carl Ebeling were co-recipients of one of four 1995 University of Washington Distinguished Teaching Awards. This marks the first university-wide teaching honor received by CSE faculty, and the first time the Distinguished Teaching Award has been shared between two faculty members for their collaborative efforts.

Borriello and Ebeling are known as inspiring instructors. They routinely receive some of the highest student evaluations in the department. However, it is their contributions to the Computer Engineering curriculum and their influence nationally on digital design curricula that set them apart. Chair Ed Lazowska expressed the feeling of the entire department when he stated, "This award to Gaetano and Carl recognizes two exceptional individuals in a department that places education as the highest priority."

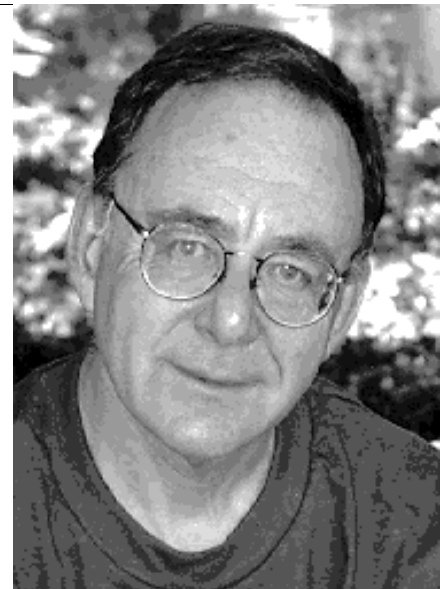
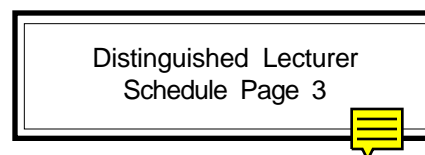
When the department joined the College of Engineering in 1989, it assumed responsibility for the Computer Engineering program which had been introduced by the Department of Electrical Engineering. Borriello and Ebeling were principally responsible for developing the curricular coherence of this program and were entirely responsible for the digital design sequence, culminating with the "capstone" design course (CSE 477). Through their leadership, the Computer Engineering major now attracts some of

the best students in the university. (The average entry GPA for Computer Engineering majors is 3.75!)

The capstone design course which Borriello and Ebeling co-designed is the course in the Computer Engineering curriculum that "brings it all together." Students build real systems for real applications either in research projects (one recent project was a mobile robot vision system) or in off-campus settings (another project was a training system for electric wheelchairs).

Borriello and Ebeling's curricular innovations have been distributed nationwide in a number of venues. Their digital system test environment, MacTester, has been licensed to Applied Precision and distributed nationally. They have published papers in many engineering education conferences. Their lecture notes have been adopted at several other major universities. Their laboratory manual is an integral part of Randy Katz's popular text *Contemporary Logic Design* (Benjamin/Cummings, Redwood City, CA) published in 1994. Their course software has been widely distributed.

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Richard Karp

Richard Karp Joins CSE Faculty

Richard Karp will join the University of Washington as Professor of Computer Science & Engineering in September 1995. He will also hold an Adjunct Professorship in the Department of Molecular Biotechnology.

Karp received his PhD in Applied Math from Harvard in 1959. From 1959 to 1968 he was a Research Staff Member at the IBM Watson Research Center and from 1968 to 1995 he was Professor of Computer Science and of Industrial Engineering and Operations Research at the University of California, Berkeley. He helped found and served as Research

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Honors to Our Graduates

The following students in Computer Science or Computer Engineering received honors upon graduation this past year:

Summa Cum Laude (3.93–4.00)

Li-Wei He
Amy Suzanne Raby
Tina Han Ting Wong

Magna Cum Laude (3.78–3.92)

Simon Hui Auyeung
Chung Tin Kwok
Gary E. Later
Scott C. Lee
Charles Yin-Che Lee
Peter C. Lee
Alice Elizabeth Lockhart
Thinh Pq Nguyen
Matthew James Parker
Haifeng Ping
Mike Allen Rhoades
Senthilvasan Supramaniam
James Marion Thrush
Pauline Ping Wang

Cum Laude (3.65–3.77)

Victor Leroy Babbitt
Lap Chung Cheung
Scott Robert Debeaubain
Roger Glenn Ferdinand
Tyrie Jenene Grubic
Danny Christian Hutama
Radney Masaya Jasmin
Yong Chang Kim
Dymitr Stanislaw Mozdyniewicz
Mark Joseph Schiller
David William Stachofsky
Catherine C. Takemoto
Tu-Anh Tran
James Hollis Wood
Songlei Yang
Krzysztof Cezary Zmudzinski

Congratulations to all our students upon their graduation!



*Gaetano Borriello, Derrick Weathersby, and Carl Ebeling,
winners of outstanding teaching awards*

Weathersby Wins College Outstanding Teaching Assistant Award

Graduate student Derrick Weathersby won the College of Engineering Outstanding Teaching Assistant Award for 1995.

In 1993, with the support and encouragement of the Minority Science and Engineering Program, the department instituted a retention program in which a graduate student serves as a 20-hour-per-week tutor, dedicated to meeting the needs of minority undergraduate majors in computer science and computer engineering, for any course. Weathersby was the first tutor for this program, in the academic year 1993-94. He designed the program and worked intensively and effectively with the students. According to one student, "He was very patient and was able to present a given concept in a number of different ways until I could understand it."

Commenting on his tutoring experience Weathersby stated, "It is very rewarding when through my efforts a student finally comprehends a difficult concept. It was fun to find creative ways to get a concept across. There is no doubt in my mind that

many minority students can excel but don't. My challenge has been to get them to change their mindset, to believe they can excel."

Weathersby received a BS in 1984 from the University of Illinois in Urbana-Champaign. He took some graduate courses at the University of Minnesota, while working at IBM in Rochester from 1988 to 1990, and then joined our department as a PhD student. He took a year off from his studies in 1991 to work at IBM, Issaquah, and spent the summer of 1993 at IBM Almaden Research Center.

Weathersby is currently working on his PhD dissertation in the area of parallel systems under the supervision of Professor Larry Snyder.

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Tina Wong Wins CRA Award

Tina Wong, a 1995 Summa Cum Laude graduate of our department, received Honorable Mention in the Computing Research Association's first Outstanding Undergraduate Awards competition. Wong was one of eight women to receive Honorable Mention along with two who received runner-up and one winner in the competition. Nominations came from universities throughout the United States and Canada.

Wong earned a 3.94 GPA while at the University of Washington. She graduated with distinction in the Honors program in the College of Arts and Sciences. She completed an Honors Thesis under the supervision of Assistant Professor Craig Chambers. Her thesis was in compiler optimization for object oriented languages. Chambers states, "Her work has gone so well I plan to use it as part of the basic project infrastructure for the graduate compilers class."

Next year Wong will begin graduate work at the University of California, Berkeley, supported by one of the few fellowships offered by Berkeley to incoming graduate students.

Teaching Award continued from page 1

The University Distinguished Teaching Award comes with \$3,500 for each individual and was presented at a reception hosted by President Gerberding in June. Borriello and Ebeling were introduced at the University graduation ceremony on June 10th.

Ebeling joined our department in 1986 after receiving his PhD from Carnegie Mellon University. His research is in VLSI architectures and computer-aided design of digital systems. Borriello joined us in 1988 after receiving his PhD from University of California, Berkeley. His research is in computer-aided design, and implementation of embedded systems and special-purpose hardware architectures. Both Borriello and Ebeling are currently Associate Professors, and holders of NSF Presidential Young Investigator Awards.

DISTINGUISHED LECTURER SERIES

The Department of Computer Science and Engineering has announced the 1995 Distinguished Lecturer Series.

OCTOBER 5 — THURSDAY

James Allen, University of Rochester
"Conversational Planning Agents"

OCTOBER 12 — THURSDAY

Vinton Cerf, MCI Data & Information Center
"Harvesting the Internet Windfall"

OCTOBER 19 — THURSDAY

Donald Norman, Apple Computer, Inc.
"Trends in the Computer Industry: Life-Long Subscriptions, Magical Cures, and the Search for Profits Along the Information Highway"

OCTOBER 26 — THURSDAY

Shafi Goldwasser, MIT
"On the Theory and Applications of Probabilistically Verifiable Proofs"

All lectures are held at 3:30 p.m. in 210 Kane Hall, University of Washington, and are open to the public. A reception in the Walker-Ames Room follows each lecture. Inquiries may be directed to the Department of Computer Science and Engineering: (206) 543-1695.

Five Become ACM Fellows

Professors Richard Ladner, Ed Lazowska, Nancy Leveson, Larry Snyder, and Paul Young were all selected as ACM (Association for Computing Machinery) Fellows in 1995.

The ACM Fellows Program was established a year ago to recognize and honor outstanding ACM members for their achievements in computer science and for their contributions to the mission of the ACM. This year 54 ACM Fellows were inducted at the ACM Awards Banquet. They join the initial 133 inductees.

All of our inductees were cited for their technical achievements: Ladner in computer science theory, Lazowska in computer systems, Leveson in software engineering, Snyder in computer architecture, and Young in computer science theory. In addition our inductees were cited for their extraordinary leadership and service. Ladner has served as an area editor for the *Journal of the ACM* and as Pacific Region Representative on the ACM Council. Lazowska is a member of

the Board of Directors of the Computing Research Association, and Chair of its Government Affairs Committee; recently concluded service on a 12-person National Research Council panel evaluating the multi-agency High Performance Computing and Communications Initiative. Leveson is currently Secretary of the Board of Directors of the Computing Research Association and Editor-in-Chief of *IEEE Transactions on Software Engineering*. She is also a member of the National Research Council Commission on Engineering and Technical Systems. Snyder is an Area Editor of the *Journal of the ACM* and has served as Chair of the Advisory Committee of the Division of Computer and Computation Research at the National Science Foundation. Young has served as Chair of the Computing Research Association and is currently Assistant Director for the Computer and Information Science and Engineering Directorate at the National Science Foundation.

A Sabbatical at the End of the Earth

Based on a True Story by Carl Ebeling

Last year I spent my sabbatical teaching at the University of Mauritius under a Fulbright Fellowship. We had decided on Mauritius for the challenge and the adventure of it and we were not disappointed. Mauritius is a small island nation in the Indian Ocean about 600 miles east of Madagascar. It has a unique history. Starting with no indigenous population other than the famous Dodo, Mauritius has experienced an influx of people from France, England, Africa, India and China over the 500 years since it was first discovered. The result is a “rainbow society” where the government is run by the Indian majority, finance and banking by the Franco landowners, and commerce by the Chinese. Mauritius is often held up as an example of the successful blending of very diverse races, cultures, and religions into one cohesive society.

Mauritius is a surprisingly urban country with over one million people living in cities and towns covering less than 10% of an island one third the size of King County. The educational and health-care systems are good and the literacy rate and life expectancy are high. Mauritius is economically very aggressive and recently the growth rate has been phenomenal as it has moved away from a sugar-based economy towards a more diverse economy based on small-scale manufacturing. And, with impetus from the World Bank, Mauritius has realized the importance of computer, information and communications technology for establishing its economic niche in the world. This resulted, somewhat indirectly, in my spending a year at the University of Mauritius.

Although the University has offered courses in computing for some time, the final year of the degree program was being offered for the first time the year I arrived. My role evolved into a mixture of teaching and curriculum development as the department was still trying to resolve the course sequence. Although this sounded pretty straightforward in the

abstract, it turned out that I had a lot to adjust to besides the foreign culture.

The first adjustment I had to make was to the British system of education, circa 1950. Fortunately one of the first friends I made had been to the U.S. for a Masters and was able to explain how things worked in terms I could understand, although it took a long time to sink in. The biggest difference for me was the reliance on year-end examinations to determine course grades, which placed a large emphasis on rote learning and little on practical experience. As a result, few textbooks were used—the teacher wrote everything that would be needed at year’s end on the board, and little or no homework was assigned. My main contribution, I think, was to start a trend towards more “learning by doing” and evaluating students based on performance instead of memory. The students were on the whole very good and the best students would have been at the top of my classes at UW.

“We decided on Mauritius for the challenge and the adventure . . .”

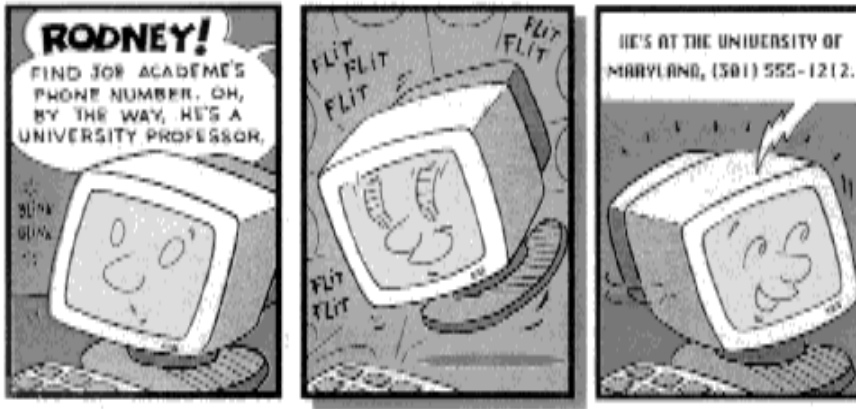
The computing infrastructure of the department was remarkably up-to-date in some respects and non-existent in others. High-performance multimedia PCs were fairly commonplace and there was a DEC/MIPS Unix system with 20 terminals as well as two SparcStations. What was missing was any sort of network, and email was an oddity used only by a few via a fairly unreliable FIDOnet connection to South Africa. Fortunately I was able to hack together my own batched email connection back to the UW via a dialup connection. One of the first things I tried to do was set up an Ethernet between the Unix machines, but bureaucratic and logistical red-tape stymied the

project until just before we left. (It took six months to get Ethernet taps.)

I repeatedly ran into the chicken-and-egg problem—people were very interested in X (X = Internet, email, newsgroups, Unix) but didn’t want to invest in it until they could see the benefit. The Internet in particular was a hot item, but everyone wanted to have the first, and only, connection and there was no interest in forming a consortium between government, industry and the university. Since no one could afford to go it alone, nothing happened except a lot of talk. The more useful idea of a country-wide network based on existing technology didn’t seem to interest anyone. On the other hand, developing countries can often leapfrog into the technological present. For example, most “long distance” telecommunications links are fiber, and cellular telephones are very popular.

Language turned out to be only a minor headache. By the time students reach the University, they have had enough experience to be more-or-less fluent in English. This is quite an achievement since, even though English is the official language, there is very little English to be heard on radio or television and there is only one minor weekly newspaper in English. Creole is the real official language and French the language of the popular press. Accent was another issue and even though the students quickly adapted to my accent, I had a hard time deciphering theirs.

On a personal level, the time spent in Mauritius was fantastic. We made many friends and were invited to experience a variety of festivals and family celebrations. Our two children found out that most of the world is different from Seattle and that even though other people might watch the same TV shows (Beverly Hills 90210 was especially popular), they don’t all think the same way or have the same beliefs. Fortunately, there is something at the core that we as people all share that allows us to make connections across cultural and linguistic boundaries.



Softbots: Your On-Line Personal Assistant

1. You need a phone number.
2. Rodney searches a bibliographic database, then goes through a series of searches to find the person's electronic mail address.
3. Rodney responds with Joe Academe's location and phone number.

Softbots—Software Robots for the Information Superhighway

The goal of the Internet Softbots project is to help people cope with the explosion of information available to them through the Internet and the World Wide Web. By acting as an intelligent personal assistant, the Softbot supports a new kind of interface to the Internet. A human user is able to state *what* he or she wants, and the Softbot dynamically determines *how* and *where* to find that information.

Instead of a mobile robot's arms and wheels, a software robot, or Softbot, has commands such as "print" or "mail" as effectors; instead of a television camera or sonar array, the Softbot uses Internet services such as "finger" and "netfind" to gather information. The Softbot accepts requests in a high-level language, generates and executes plans to satisfy the requests, and learns from experience. The Softbot uses a Unix shell and the World Wide Web to interact with a wide range of Internet resources. In 1995, the Softbot was one out of five finalists in the national *Discover Awards for Technological Innovation in Computer Software*. The project team consists of a large group of graduate students led by Professors Oren Etzioni and Dan Weld.

Professor Steve Hanks has recently joined the project. Etzioni, Weld, and Hanks have just received a \$1,370,000 contract from ARPA/SSTO, titled "Softbots: Customizable Agents for the NII," to continue the research.

For more details about the Internet Softbot see the article in *Communications of the ACM*, Vol. 37, No. 7, pp. 72-76 or consult the World Wide Web:

<http://www.cs.washington.edu/research/projects/softbots/>.

Recently, graduate student Erik Selberg and Etzioni fielded a new Softbot called the MetaCrawler. The MetaCrawler is a Web service that provides a single, central interface for Web document searching. Upon receiving a query, the MetaCrawler posts the query to multiple search engines in parallel, and performs sophisticated pruning on the responses returned. Preliminary experiments indicate that the MetaCrawler is able to prune as much as 60% of the returned responses as irrelevant, outdated, or unavailable. The MetaCrawler is accessible through the World Wide Web: <http://www.cs.washington.edu/research/metacrawler/>.

Intel Donates Pentiums for Instruction and Research

Thanks to a generous contribution from the Intel Corporation, the department has created a new PC-based laboratory for instruction in computer science and engineering. The laboratory contains 25 Intel 90 MHz Pentium-based PCs, each with a 17" color monitor, 32MB of memory, an 1GB disk and PCI bus. A Pentium server provides file service to the student PCs in the laboratory. All PCs in the laboratory run the Microsoft Windows NT operating system. In addition to Intel's generous instructional donation, the chip manufacturer has also donated 50 high-end PCs to be used for research. These machines are currently being deployed around the department for various projects.

TRANSITIONS

Tony DeRose was promoted to Full Professor.

Steve Hanks was promoted to Associate Professor with tenure.

Anna Karlin continues here for a second year, supported by an NSF Visiting Professorship for Women.

Ted Kehl returned from sabbatical leave spent partially in Melbourne, Australia.

Linda Shapiro returned from sabbatical leave in San Diego and Rome.

Alan Shaw returned from sabbatical leave in Santa Cruz and Paris.

Larry Snyder returned from sabbatical leave in Sydney, Australia.

Arun Somani was promoted to Full Professor.

Mary Vernon, professor at University of Wisconsin, will spend her sabbatical leave in CSE beginning this September. She is partially supported by an NSF Visiting Professorship for Women.

Datagrams

P-Completeness Book Completed

Professor Larry Ruzzo and coauthors Ray Greenlaw and James Hoover have published their long-awaited book, *Limits to Parallel Computation: P-Completeness Theory*, Computing Science Series, editor Z. Galil, Oxford University Press, 1995. Greenlaw, who is currently a professor at the University of New Hampshire, received his PhD from our department in 1988.

Technology Awards Finalists

The Surface Reconstruction Project of Professors Tony DeRose, Tom Duchamp, John McDonald, and Werner Stuetzle and the Softbot Project of Professors Oren Etzioni and Dan Weld were selected as finalists in *Discover Magazine's* annual technology awards. There were 35 finalists selected from 4,000 nominations.

Salesin Wins Double

Professor David Salesin was awarded an Alfred P. Sloan Research Fellowship and an ONR Young Investigator Award. Salesin is our first Sloan fellow and joins Dan Weld and Brian Bershad as ONR Young Investigators.

Best Paper Award

Professor Jean-Loup Baer and graduate student Xiaohan Qin received the best paper award at the 28th Annual Simulation Symposium, April 1995, for "A comparative study of conservative and optimistic trace-driven simulations."

Fulbright to Borriello

Professor Gaetano Borriello was awarded a Fulbright Fellowship for study in Italy. While on sabbatical leave next year he will hold the Fulbright Pisa Chair at the Scuola Superiore di Studie Universitari e di Perfezionamento Sant'Anna in Pisa, Italy.

Baer Becomes Boeing Professor

Professor Jean-Loup Baer was selected as the Boeing Pennell Professor effective this Autumn. The endowed professorship provides funding to support his research on computer architecture. Baer joins Professor Nancy Leveson as our second Boeing Professor.

Johnson-Burr Wins Staff Award

Staff member Nancy Johnson-Burr received one of the 1995 College of Engineering Staff Awards. Johnson-Burr joins previous CSE winners Mark Murray and Fred Videon.

Search for Engineering Dean

Dean of the College of Engineering J. Ray Bowen will be stepping down as Dean at the end of the next academic year. Jean-Loup Baer is Chair of the search committee for the next Dean.

Leveson Wins AIAA Award

Nancy Leveson was awarded American Institute for Aeronautics and Astronautics Information Systems Award for technical contributions in space and aeronautics computer technology and science. The award reads, "For developing the field of software safety and for promoting responsible software and system engineering practices where life and property are at stake."

Construction on Schedule

Construction of the new EE/CSE Building is on schedule. For an "almost live" photo of the construction site, consult the departmental World Wide Web home page: <http://www.cs.washington.edu/>. See aerial photo on page 8.

Karp continued from page 1

Scientist for the International Computer Science Institute in Berkeley since 1988.

Karp's main research areas are algorithms, combinatorial optimization, and computational complexity. Karp is probably best known for his pioneering work on NP-completeness. Following Cook's discovery that NP-complete problems exist, Karp was the first to recognize the pervasiveness of these computationally hard problems. In his seminal paper, "Reducibility Among Combinatorial Problems," published in 1972, Karp demonstrated that not only are problems in logic and graph theory NP-complete, but so are versions of optimization problems such as task scheduling, maximum cut, and knapsack. Since the original work of Cook and Karp, thousands of problems have been shown to be NP-complete.

Karp has a keen research interest in formal models of parallel computation which capture the essential features of current multiprocessor systems, yet are clean enough to permit predictive analysis of parallel algorithms. His recent joint work on the LogP model of parallel computation is research in this direction.

For the past three years Karp has become more and more interested in computational biology. Problems of DNA analysis appear to have similar characteristics to traditional optimization problems but, at the same time, are quite different. Karp's appointment in the Department of Molecular Biotechnology will allow him to intensify this new research direction. Moreover, as pointed out by Chair Ed Lazowska, "There is an emerging realization that information technology and biotechnology are inherently intertwined. The addition of Karp to the faculty will enable the University of Washington to assume a leadership position in defining the confluence of these two disciplines."

Karp has received many accolades for his research accomplishments. He is a member of the National Academy of Sciences, the National Academy of Engineering, and the American Academy of Arts and Sciences. He is a Fellow of the American Association for the Advance-

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ment of Science, and of the ACM. He has received the ACM Turing Award, the highest award for technical achievement given in the computer science field. He also received the Lanchester Prize in operations research, the Fulkerson Prize in discrete mathematics, and the ORSA/TIMS von Neumann Theory Prize. He has received four honorary doctorates. He is an editor of thirteen journals and has given hundreds of invited talks all over the world.

Karp was known as a brilliant teacher at Berkeley, and in 1986 won the Distinguished Teaching Award. He taught three of our faculty members: Gaetano Borriello, Tony DeRose, and Larry Ruzzo. They all agree that his teaching style made difficult topics seem easy. This Autumn Karp will teach Discrete Structures (CSE 321)—better sign up early! He has supervised 34 PhD dissertations and has several more PhD students in the pipeline.

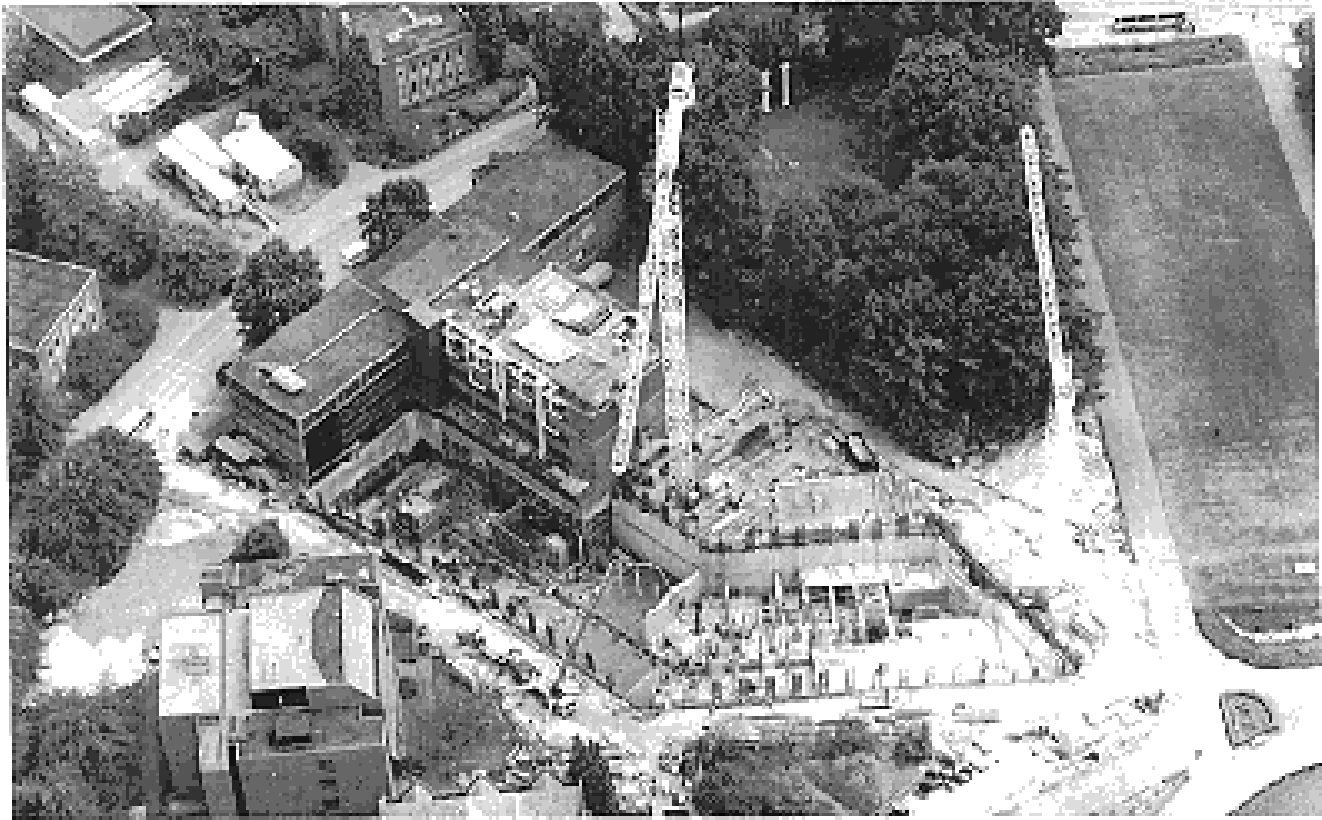
When asked why he decided to move to the University of Washington, Karp mentioned two reasons: “First, the CSE department has an unusually talented faculty and uniquely congenial atmosphere. I was particularly impressed with the outstanding young faculty. The departmental spirit and enthusiasm are truly contagious. Second, the move to Washington puts me in close contact with the excellent group in the Department of Molecular Biotechnology where I can put my theoretical and algorithmic ideas in computational biology to the test of practical application.”

MSB is published semiannually to provide current information on the Department of CSE's diverse activities, and is supported by the Computer Science & Engineering Department Affiliates Program. Volume 8, Number 2 editors are Richard Ladner and Judy Watson. We thank contributors: Carl Ebeling, Oren Etzioni, Ed Lazowska, and Erik Lundberg; computer graphic by Adam Finkelstein and David Salesin, “Rodney” illustration by Jeff Pollard, EE/CSE Building photo courtesy of Soundview Aerial Photography, other photos by Judy Watson.

Doctorate Degrees Awarded

Congratulations to our recent PhD graduates, listed below with their research advisor, initial appointment, and dissertation title:

Sitaram Raju	Shaw	Microsoft
<i>Using Assertions For Validating, Verifying and Monitoring Real-Time Systems</i>		
Franz Amador	Weld	GTE/Bothell
<i>Self-Explanatory Simulation for an Electronic Encyclopedia</i>		
Hugues Hoppe	DeRose	Microsoft Research
<i>Surface Reconstruction From Unorganized Points</i>		
Brian Lockyear	Ebeling	Tera Computer Corp.
<i>Algorithms for Retiming Level-Clocked Circuits and Their Use in Increasing Circuit Robustness</i>		
Chandu Thekkath	Lazowska/Levy	DEC Systems Research Center, CA
<i>System Support for Efficient Network Communication</i>		
Robert Bedichek	Lazowska/Levy	Post-doc, MIT
<i>The Meerkat Multi-Computer: Tradeoffs in Multi-Computer Architecture</i>		
David Meyers	DeRose	Research Associate, UW EE
<i>Reconstruction of Surfaces From Planar Contours</i>		
Kevin Sullivan	Notkin	University of Virginia
<i>Mediators: Easing the Design and Evolution of Integrated Systems</i>		
Michael Sannella	Borning	Bell Communications Research
<i>Constraint Satisfaction and Debugging for Interactive User Interfaces</i>		
Alex Klaiber	Levy	IBM Almaden
<i>Architectural Support for Compiler-Generated Data-Parallel Programs</i>		
Michael Rabinovich	Lazowska	AT&T Bell Labs, Murray Hill
<i>Efficient Replication Management in Distributed Systems</i>		
Michael Lounsbury	DeRose	Alias Research, Toronto and Seattle
<i>Multiresolution Analysis for Surfaces of Arbitrary Topological Type</i>		
Cathy McCann	Zahorjan	Tera Computer Corp.
<i>Processor Allocation Policies for Message-Passing Parallel Computers</i>		
Becky Callison	Shaw	Oregon State University
<i>Time-Sensitive Objects: A Data-Oriented View of Real-Time Systems</i>		
Immaneni Ashok	Zahorjan	Sonitech International, Wellesley, MA
<i>Runtime Support for Dynamic Space-Based Applications on Distributed Memory Multiprocessors</i>		
Donald Chinn	Tompa	York University, Toronto
<i>Packet Routing in Multi-Processor Networks</i>		
Badr Al-Badr	Haralick	Industry, Saudi Arabia
<i>A Segmentation-Free Approach to Text Recognition With Application to Arabic Text</i>		
Radhika Thekkath	Eggers	Post-doc, Stanford University
<i>Design and Performance of Multithreaded Architectures</i>		



Aerial photo of construction site of EE/CSE Building, June 1995

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