

Program Starts Autumn '96

CSE To Offer Professional MS Degree

Evening and "Distance Learning" Classes Target Active Professionals

At their monthly meeting on April 20th, the UW Board of Regents approved CSE's plan to offer a professional masters degree. The new offering has been in the planning stages for more than a year, and was proposed by UW President Richard McCormick as part of his emphasis on providing greater access to UW educational resources.

"We will admit students for Autumn 1996," said CSE Chair Ed Lazowska in announcing the Regents' favorable decision on CSE's plan. "Information processing technology is a critical segment of the Puget Sound economy, and it is growing rapidly," he said. "There is enormous interest in this technical community for post baccalaureate education. We're very eager to begin meeting this demand as soon as possible."

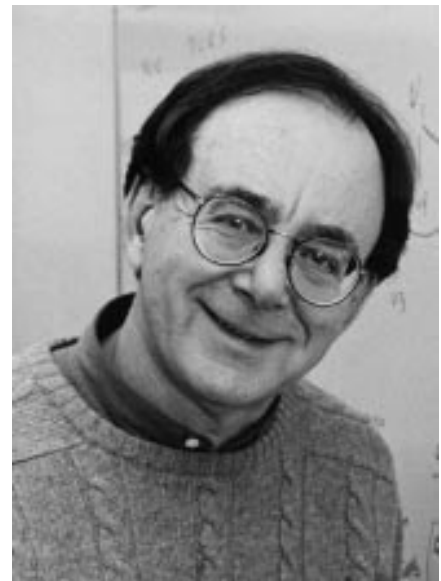
The part-time program is designed for active professionals who are working full-time. It will be offered through a combination of evening classes and "distance learning," i.e. via electronic media, and will rely in various ways on corporate and personal computing facilities. Students will typically take one course per quarter, allowing the degree to be completed in two and a half years.

Though separate from CSE's present "day" graduate programs, the professional masters degree will be based on the same high quality curriculum. "Our graduate program was ranked 6th in the nation last year," Lazowska noted, "so we will be offering a professional degree of very high quality. We expect admissions to be very selective."

The Regents' approval followed a favorable decision by the Washington State Legislature to fund the program. The legislators backed the MS program during their 1996 session with new faculty positions, staff and the necessary laboratory equipment. With these resources in hand the Regents' green light started a frenzy of faculty activity preparing for the Autumn '96 opening. "When the approval came, we were ready in concept, but all the details had to be set," said Professor David Notkin, who with Associate Professor Richard Anderson has been responsible for coordinating the creation of

Professional MS continued on page 2

Distinguished Lecturer
Schedule Page 3



Richard Karp

Karp Wins National Medal of Science

President Clinton has awarded Professor Richard Karp the National Medal of Science, America's most prestigious science award. Karp joined CSE this year from Berkeley, and is also an adjunct professor in the Molecular Biotechnology Department. He received the award at a ceremony at the White House with the seven other winners of the National Medal of Science and the five National Medal of Technology winners.

Karp continued on page 8

the degree program. "The faculty has really pitched in," he continued, "so we will be ready to begin instruction this fall."

MS Program Specifics Set

CSE is prepared to accept up to 40 applications for the entering class that begins September 30th. The prototypical student is expected to have a strong Bachelors degree in computer science or computer engineering, that is, to have done well academically in college, and to have several years of experience in leading-edge technology. The program is designed specifically for highly technical computer science and computer engineering professionals who want to remain at the forefront of the field.

In the first year one class per quarter will be offered [see box]. A dozen classes will be available to the evening and distance curriculum in steady state, with three classes to be added each year. It is an-

anticipated that minor changes will be needed to the "day" curriculum to accommodate a student population composed of professionals. But the revisions may be as limited as simply de-emphasizing team-based projects.

The program is "class-based" in that it does not require a thesis or a large project as the "day" masters program does. Theses and projects are not discouraged, however, and it is expected that a few students in special circumstances may choose to pursue those options.

The technological details of the "distance" classes remain to be worked out, though most of CSE's classes already apply World Wide Web technology. Initially, TV and video tape will be used, primarily as a vehicle for offering CSE519 *UW CSE Colloquium Series*. As quickly as possible, the program will directly employ the Internet to broadcast lectures. CSE will be working closely with UW's Computing and Communica-

tions office to minimize student travel to campus.

Washington State high-tech companies have been active supporters of CSE's plans for a professional masters program. According to Notkin, "Companies like Microsoft, Boeing and Intel, have been encouraging and supporting this program from the very start, as have groups like the Washington Software Association and the American Electronics Association. They know that to stay competitive this state needs to educate the brightest people, many of whom are their employees."

The faculty coordinator for the professional masters program is Richard Anderson, 206/543-4305, and the advisor for the program is Jenny Seller 206/543-4149. Additional information about the professional masters degree program is available on the World Wide Web at <http://www.cs.washington.edu/masters/>.

MS Program Evening Schedule

Initially, the Professional Masters Program will offer one evening course per quarter with additional courses added three per year over the next several years. For academic year '96-'97, students will take the following courses.

Autumn 1996: Operating Systems, *Professor Hank Levy*

Readings of original research papers following developments in operating systems from the 1960s to the present. Topics include operating system structure, protection, virtual memory, communication mechanisms, concurrency, lightweight threads, object-oriented systems, distributed systems, and transaction support in operating systems.

Winter 1997: Transaction Processing Systems, *Dr. Phil Bernstein, Microsoft Research*

Technology supporting reliable large-scale distributed computing, including transaction programming models, TP monitors, transactional communications, persistent queuing, software fault tolerance, concurrency control and recovery algorithms, distributed transactions, two-phase commit and data replication.

Spring 1997: Software Engineering, *Professor David Notkin*

Readings of original research papers following developments in software engineering over the past three decades. Topics include design (information hiding, layering, open implementations, etc.), requirements specification (informal and formal approaches), quality assurance (testing, verification and analysis, inspections, etc.), reverse and re-engineering (tools, models, approaches), and perhaps some special topics.

Additionally, students are encouraged to enroll for CSE 519, the *UW CSE Colloquium Series* offered each quarter via UWTV, cable channel 27.



Transitions

Associate professor **Tom Anderson** of UC Berkeley arrived for a one year sabbatical.

Associate professor **John Bennett** returned to Rice University after a half year sabbatical.

Brian Bershad has been promoted to associate professor with tenure.

Professor **Tony DeRose** has joined Pixar.

Oren Etzioni has been promoted to associate professor with tenure.

Computer engineering undergraduate advisor **Marilyn Kramp** retired.

Adjunct professor and Professor of Classics, Near Eastern Languages and Literature, **Pierre MacKay** retired.

Catherine Provost joins CSE as computer engineering undergraduate advisor.

David Salesin has been promoted to associate professor with tenure.

Jenny Seller joins CSE as professional masters program advisor.

Professor **Mary Vernon** returned to the University of Wisconsin following a one year sabbatical.

Salesin Dominates SIGGRAPH

At ACM's annual meeting of the Special Interest Group on Computer Graphics, popularly known as the SIGGRAPH Conference, Associate Professor David Salesin will be an author on eight of the 52 regular papers presented. The SIGGRAPH Conference is computer graphics' most prestigious forum for presenting new work, and most researchers regard presenting one paper at this meeting as a major accomplishment. The previous record, held by Stanford's Pat Hanrahan, was four regular papers and one short paper in 1993.

Publication is a basic feature of a professor's life, of course, and an essential requirement of grad student training. But, Salesin has also included undergraduates in his publishing activities.

DISTINGUISHED LECTURER SERIES

The Department of Computer Science and Engineering announces the 1996 Distinguished Lecturer Series.

OCTOBER 3 — THURSDAY

Paul Hudak, Yale University

“An Algebraic Approach to Multimedia Programming”

OCTOBER 10 — THURSDAY

Bob Sproull, Sun Microsystems Labs

“Tradeoffs in a Graphics System Design”

OCTOBER 17 — THURSDAY

Randall Davis, Massachusetts Institute of Technology

“IP Meets IT: The Problems and Opportunities of Intellectual Property in the Information Age”

OCTOBER 24 — THURSDAY

Randy Bryant, Carnegie Mellon University

“Multipliers and Dividers: Insights on Arithmetic Circuit Verification”

Lectures are presented 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 of his recent papers, including four of the SIGGRAPH papers, have participation by undergraduates.

The eight SIGGRAPH titles illustrate Salesin's broad interests in computer graphics. In the following list coauthors are included and undergraduate authors are starred:

- “Multiresolution video,” with Adam Finkelstein and Chuck Jacobs*.
- “Scale-dependent reproduction of pen-and-ink illustrations,” with Mike Salisbury, Corin Anderson*, and Dani Lischinski.
- “Rendering parametric surfaces in pen and ink,” with Georges Winkenbach.
- “Hierarchical image caching for accelerated walkthroughs of complex environments,” with Jonathan Shade, Dani Lischinski, Tony DeRose, and John Snyder.

- “Interactive multiresolution surface viewing,” with Andrew Certain, Jovan Popovic, Tony DeRose, Tom Duchamp, and Werner Stuetzle.

- “Reproducing color images as duotones,” with Joanna Power, Brad West*, and Eric Stollnitz.

- “The virtual cinematographer: a paradigm for automatic real-time camera control and directing,” with Li-wei He* and Michael Cohen.

- “Comic chat,” with David Kurlander and Tim Skelly.

The other paper with undergraduate authors is to be published in the artificial intelligence conference, AAAI '96:

- “Declarative camera control for automatic cinematography,” with David Christianson, Sean Anderson*, Li-wei He*, Dan Weld, and Michael Cohen.

Datagrams

Klee Degree

Adjunct Professor of CSE and Professor of Mathematics **Victor Klee** has been awarded an honorary doctorate from the Universität Trier (in Germany) for “achievements in mathematical research and contributions to the mathematical community.” The recognition follows honorary doctorates from the Université de Liège (in Belgium) in 1984 and from Pomona College in 1965.

Erik The Great

Computer Science Lab Director **Erik Lundberg** received one of the six 1996 College of Engineering Staff Awards. Lundberg, one of five departmental nominees, is responsible for managing CSE’s computing facility. It is probably no coincidence that all of CSE’s previous staff award winners come from Lundberg’s staff: Nancy Burr, Mark Murray and Fred Videon.

NRC Appointments

The National Research Council has appointed professors **Ed Lazowska** and **Larry Snyder** to technical advisory boards. Lazowska will serve on the Computer Science and Telecommunications Board, which oversees research and policy aspects of the computing field generally. Snyder will serve on the Army Research Laboratory Technical Advisory Board, which oversees the scientific quality of Army research.

Borning Honored for Minority Work

Professor **Alan Borning** received a faculty recognition award from the Minority Science and Engineering Program of the College of Engineering. The award was for Borning’s work in setting up and maintaining CSE’s tutoring program for undergraduate women and minority students. Last year grad student Derrick Weathersby received the College of Engineering Teaching Award for his work as the first tutor in this program.

CRA Won

Professor **Larry Snyder** and Visiting Professor **Mary Vernon** from the University of Wisconsin have been elected to three year terms on the Computer Research Association’s Board of Directors. CRA, whose first president was CSE Professor Paul Young, furthers the interests of computer researchers, including funding, education and professional issues. CSE Professors Ed Lazowska and Nancy Leveson also serve on the board.

Washington is Wired

According to a July InterNet Info survey, Washington’s 9,943 commercial network domains qualify it as the third most wired state behind California (80,491) and Massachusetts (17,175).

MacKay Retires

Pierre A. MacKay, Adjunct Professor of CSE and Professor of Classics, Near Eastern Languages and Literature, retired at the end of the academic year. MacKay has been associated with CSE since 1969. His interests include multilingual text-editing and typesetting, especially Arabic. In 1975, long before the existence of adequate hardware or software, MacKay collaborated with G. J. Toomer of Brown University to produce the first automatically typeset Arabic text *Diocles On Burning Mirrors, The Arabic Translation of the Lost Greek Original*. The computer was an XDS Sigma 5, CSE’s first computer.

New Dean of Engineering

President Richard McCormick named University of Wisconsin professor **Denice Denton** to be Dean of Engineering. Denton who is professor of electrical and computer engineering and chemistry, will be the first female engineering dean of a major US research university, and at 36 the youngest UW dean. She succeeds J. Ray Bowen who has served 15 years as dean and will return to the faculty. CSE’s **Jean-Loup Baer** chaired the College’s recruiting committee that submitted six finalists to McCormick.

IEEE Fellows Named

Three CSE faculty have been named Fellows of IEEE. The professors and IEEE’s citation for the contributions are: **Ed Lazowska** for “advancing the state of the art in computer systems and computer system performance analysis, and for significant technical, educational and disciplinary leadership,” **Linda Shapiro** for “contributions in the theory of relational matching and its application to model-based computer vision,” and **Steve Tanimoto** for “contributions to data structures and architectures for image processing.”

Minorities and Women Fellowships Awarded

The co-winners of the 1995-96 fellowships from the Minorities and Women Endowment were **Xiaohan Qin** and **Soha Hassoun**. Both women are doctoral candidates. Qin is working with Jean-Loup Baer on cache coherency, and Hassoun is studying architectural retiming with Carl Ebeling.

Cutting-edge Paper

Assistant Professor **Steve Burns** won the Best Paper Award at the Asynch ’96 conference, held at the University of Aizu, Japan, for “General Conditions for the Decomposition of State Holding Elements.” Burns’ prize was an impressive samurai sword. He quipped, “It posed a problem at airport security.”



UW President Richard McCormick and Freshman Medalist Zhenya Sigal

Zhenya Sigal, Freshman Medalist

Computer engineering major Zhenya Sigal has been awarded the Freshman Medal by the Honors Subcommittee of the Faculty Council on Academic Standards for academic excellence. Her cumulative grade point average recorded at the end of her freshman year (July '95) was an astonishing 3.98. Characteristically modest, Zhenya says "It's not that big of a deal."

The Honors Subcommittee has awarded a Sophomore and a Junior Medal for years to the top student in those classes across the whole university. The Freshman Medal, also awarded to the top student, was presented this year for the first time. Since CS major Bruce Forstall won the 1987-88 Junior Medal, and CE major S-C. "Samson" Chung won the 1989-90 Sophomore Medal, Zhenya's accomplishment makes us unique: CSE is the one department whose students have won the Freshman, Sophomore and Junior Medals.

Young Recognized For Distinguished Service

The Computing Research Association (CRA) has recognized professor Paul Young with its 1996 Distinguished Service Award. Young received the award in July at the biannual CRA Departmental Chairs meeting in Snowbird, Utah.

Young, the former chair of the department and associate dean of engineering at UW, is completing a two-year term as the National Science Foundation's Assistant Director for Computer and Information Science and Engineering (CISE). Young was cited for "providing outstanding representation and leadership for the computing research community during a period of critical changes in our nation's approach to research and education."

CRA, in addition to CISE, has been a major beneficiary of Young's selfless national service. Young was "chair of the CRA Board of Directors during the association's formative years," and pushed CRA to be a participant in national policy debates on computing. Its influence is now considerable. He was also an advocate for CRA's women's programs, a collection of highly successful mentoring, recognition and career development efforts for women computing faculty.

Young will be spending a well deserved sabbatical at the University of Wisconsin before returning to the real UW.

DeRose Joins Pixar

After eleven years on the UW faculty, Professor Tony DeRose has decided to join the technical staff of Pixar, the computer graphics company that produced *Toy Story*. He said "so long" to CSE at the end of Autumn Quarter.

"We will miss Tony terribly," said CSE chair Ed Lazowska. "But computer animation is an exciting and challenging technology with enormous potential. It is understandable that Tony wants to seize the opportunity to contribute." Lazowska presented DeRose with mementos of UW, and a "Buzz Lightyear" robot.

Immediately following completion of his PhD at Berkeley, DeRose joined UW, and in 1989 received the prestigious Presidential Young Investigator Award. He also won a Digital Equipment Faculty Development Award. Over the years DeRose collaborated widely across CSE and the university, coauthoring papers with many faculty and students on topics ranging from new chip designs to new mathematics. He also built ties to other graphics groups as a visiting scientist at University of Kaiserlautern, Xerox PARC, Apple and Boeing. In all, he graduated a half dozen masters students, and eight PhDs: Charles Loop, Stephen Mann, Hugues Hoppe, David Meyers, Michael Lounsbury, Per Christensen (with Salesin), Georges Winkenbach (with Salesin), and Jean Schweitzer.

DeRose will join the Tools Group at Pixar, an advanced development team numbering 6-8 people. "The group looks a film or two out to consider what kinds of effects they want to be able to achieve," said DeRose. "The task is then to be sure that the proper software is ready for the animators."

CSE remains strongly committed to graphics. David Salesin heads GRAIL, the Graphics and Imaging Lab. In Spring Quarter Salesin offered a new course on

DeRose continued on page 8

Lazowska Delivers Faculty Lecture

Kane Hall was packed February 6, 1996, for CSE Chair Ed Lazowska's presentation of the 20th Annual Faculty Lecture titled, *A Half Century of Exponential Progress in Information Technology: Who, What, When, Where, Why and How*.

In his introduction President Richard McCormick observed that the UW Faculty Lecture "is given by a UW professor recognized for his or her distinguished service or scholarship." McCormick highlighted Lazowska's professional accomplishments, and then mentioned his energetic speaking style, which anticipated the animated hour-and-a-half, multimedia lecture to follow. Indeed, it was the first UW Faculty Lecture to employ the World Wide Web. (Lazowska's slides are located at

<http://www.cs.washington.edu/homes/lazowska/faculty.lecture.>)

The high intensity talk covered a variety of topics including basics such as how digital audio works, technology trends such as Moore's Law, and historical trends such as the evolution of the x86 processor chips. Lazowska interspersed technical and humorous material to make important points on such serious topics as the impact of computers on the work place and society. The CSE chair made a pitch for the role of university research and education in the progress to date, and was optimistic that there was much more to come.

MSB is published semiannually by the UW Department of Computer Science & Engineering to provide current information about its undergraduates, graduate students, faculty and alumni. *MSB* is supported by the CSE Affiliates Program. Volume 9, Number 2 editors are Larry Snyder and Judy Watson. We are grateful to Ed Lazowska and David Salesin for their assistance; photos by Mary Levin, photo of the EE/CSE Building courtesy of Soundview Aerial Photography.

MSB's Home Page
<http://www.cs.washington.edu/publications/msb/msb.html>

Read *MSB* with live links!



Aerial photo of construction site of EE/CSE Building, June 1996. Find updates at <http://www.cs.washington.edu/building/>.

CSE Wants Your Opinion

A short survey on "Alumni Contact in the Information Age"

How in the information age should a computer science and engineering department keep in touch with its alumni?

Obviously, most alumni of UW's CSE department are active computer users, routinely using email, the World Wide Web, and probably specialized software systems. They are accustomed to using computers intensively. For these alumni an electronic newsletter would probably be preferable to a paper newsletter. For other alums who prefer the "look and feel" of

paper documents, or who are happy to leave the computer at the office, or who perhaps have changed to less technical fields, a paper newsletter remains the medium of choice.

What do you think? Please let us know your thoughts on the topic "Alumni Contact in the Information Age." Send us snail mail (this form), email (msb@cs.washington.edu), or visit our Web site (<http://www.cs.washington.edu/publications/msb/msb.html>) and tell us what you think.

Y N

- I favor an electronic newsletter with an email prompt twice a year when a new issue comes out.
- I favor a continually updated electronic newsletter with an email prompt with each new story.
- I favor an electronic newsletter, but without a prompt.
- I favor a traditional paper newsletter.
- CSE should pioneer new forms of Internet-based alumni contact, and I would like to participate.

Also, just for the record, here is my recent news for publication in a forthcoming newsletter:

My email address: _____

My WWW page is: _____

fold here and mail

Place
Stamp
Here

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Karp continued from page 1

In announcing the awards Clinton said “The 13 recipients of these prestigious medals are American champions of research and innovation. For their leadership and originality, we honor them with America’s version of the Nobel Prize—the National Medal of Science and the National Medal of Technology.”

Karp was cited for “linking advances in theoretical computer science to real-world problems.” Though a pioneer in many areas of theory, he is perhaps best known for identifying a property of computations called NP-completeness. Karp recognized that a diverse collection of computationally difficult problems, including many problems of practical importance, were simply variations of one another in that if a computer could solve one of them quickly, it could solve any of them quickly. This research also earned Karp the Turing Award, the most prestigious honor in computer science.

Karp described the National Medal of Science as “the most significant award that I have received.” He continued, “The

work that is being recognized by this award brought order to an important area of computation spanning domains ranging from pure mathematics to molecular biology. But there is still much more to be done before we fully understand whether these problems can be tamed.”

Karp wins “America’s version of the Nobel Prize”

The National Medal of Science was established by Congress in 1959 as a Presidential award, which through this year has recognized 344 of America’s leading scientists and engineers. The NSF administers the award. The evaluation criteria are based on the total impact an individual’s work has had on the present state of physical, biological, mathematical, engineering, behavioral or social sciences.

The other recipients of the 1996 National Medal of Science were Wallace S.

Broecker (geology, Columbia), James L. Flanagan (acoustics, Rutgers), Norman Davidson (biology, Caltech), Kumar Patel (VP for Research, UCLA), Ruth Batrick (limnology, Philadelphia Academy of Natural Sciences), Paul Samuelson (economics, MIT), and Stephen Smale (mathematics, UC Berkeley).

Previous University of Washington recipients of the National Medal of Science are Hans Dehmelt (1995) and E. Donnell Thomas (1990). Both scientists are also recent recipients of the Nobel Prize.

DeRose continued from page 5

Animation Arts in collaboration with animation professionals Annabella Serra, an animator from Alias, and Ronen Barzel of Pixar. The students used the Laboratory for Animation Arts, a joint lab of CSE, Art and Music funded by a \$450,000 donation from Silicon Graphics. The students, ten from CS or CE and five from Art, produced a one-minute computer animated short, *Fish Shtick*.

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