All the work and planning for the CSE Open House and Technology Forum held on Friday, October 17, paid off in a stimulating program and good attendance. Over 200 people registered and attended the events. The beautiful morning weather added to the feeling of festivity resulting from the presence of dozens of exhibits in the hallways.

CSE Head Pen-Chung Yew and Professor Jaideep Srivastava led an Industrial Roundtable from 8:00-9:00 for invited guests. See more on this in the chair’s message on page 3. The opening session from 9:00-9:30 included brief remarks and welcomes from Christine Maziar, Executive Vice President and Provost, David Hamilton, Interim Vice President for Research, H. Ted Davis, Dean, Institute of Technology, and Pen-Chung Yew, Head, CSE.

The most active part of the day for participants and passers-by was the Industrial and Research Exhibits, held in the hallways on the 2nd and 3rd floors of the EE/CS building. There were dozens of tables with posters and exhibits manned by students, faculty, and industry representatives eager to explain all.

Among the exhibitors was Judy Djugash, a CSE alumna, representing IBM, Rochester. She discussed the work done in the Life Sciences group in genomics and proteomics. Graduate student Anjali Joshi with the Critical Systems Research Group, headed by Professor Mats Heimdahl, demonstrated some software developed by the group. Another group was attracting a lot of attention demonstrating the Scout robots. (See picture.)

The lunch was held in the McNamara Alumni Center. The lunch was held in the McNamara Alumni Center.

continued on page 2
Center. At the lunch the third Distinguished Alumnus Award was presented to Dr. Richard Weinberg, Director and Founder, USC Computer Animation Lab. (See next article for more on Dr. Weinberg.)

Two panel discussions on timely topics were next on the agenda. The first was on “Biotechnology - Where Should the Investments Be?” with panelists Doug Cameron, Cargill Inc., Piet de Groen, Mayo Clinic, and Ken Hoyme, Guidant. Professor Jaideep Srivastava moderated the discussion which attempted to answer such questions as what are promising areas of research, what breakthroughs are around the corner, and in what areas should the University develop expertise?

The second panel addressed the issue of security. Panel members Massoud Amin, CDTL/UMN, Walter Heimerding, Honeywell, and Mike Sobolewski, MnDOT, discussed the question “Security: At What Cost?” Professor Vipin Kumar moderated the panel that addressed such concerns as identifying the security issues in the panelists’ disciplines that are critical and determining the right tradeoff point in cost vs. security and in convenience vs. security.

Dr. Weinberg gave the keynote address on “Entertainment Technology and its Applications”. The entertainment genres include film, TV, games, and music. The associated technology is often accessible to college freshman; for example at the USC School of Cinema-Television, most freshman have already mastered many skills of film editing. There is also a wide variety of software available for image processing. Soon everyone will have easy access to software and hardware required for producing entertainment.

The last event of the day was a wine and cheese reception in Walter Library where participants could relax, talk, eat, and admire the newly remodeled and refurbished Walter Library.

Dr. Richard A. Weinberg received the Distinguished Alumnus Award from the Computer Science and Engineering department at the fourth biennial Technology Forum on October 17, 2003. Dr. Weinberg, who received an M.S. degree and Ph.D. from the department, is the Director and Founder of the USC Computer Animation Laboratory which he established in 1985. He has a long record of involvement in computer graphics and animation. He has been motivated by the excitement of generating pictures that cannot be done by hand and the opportunities presented by interacting with different kinds of information in the computer.

After completing his B.A. degree in computer science/graphics at Cornell University, Dr. Weinberg, a native of Saint Louis Park, returned to Minnesota to work for the Control Data Corporation in research. A year later in 1975, he enrolled at the University of Minnesota to pursue graduate work in computer science. His interest in graphics and animation led him to work with Professor William Franta, first in the Hybrid Computer Lab and then in the Special Interactive Computer Lab.

During his professional career, Dr. Weinberg has done research in the areas of computer animation, neurosurgery visualization, graphics system design, multimedia, scientific visualization and entertainment technology.

In addition to receiving the Distinguished Alumnus award, he gave the keynote address at the Technology Forum on “Entertainment Technology and its Applications.”

Dr. Weinberg is also the Chief Technology Officer of USC’s Annenberg Center for Communications. In this role he is responsible for corporate relations directed towards bringing technology to the Center for such applications as computer animation and visual effects.

After Dr. Weinberg completed his Ph. D in 1982, he moved to Los Angeles to work on animation for the movie, “Last Star Fighter”. Three years later he joined the University of Southern California, which has the top film school in the world, to establish a masters program that would combine computer animation and digital arts. The program he co-designed is currently called the MFA in Film, Video and Computer Animation. This degree is offered by the Division of Animation and Digital Arts at USC.
I am very pleased to report that the Fourth Biennial Technology Forum and Department Open House on October 17, 2003, was a huge success. The event drew more than two hundred registered participants from within and outside the University. (Pictures appear on pages 6 and 7.)

The event started with a Breakfast Roundtable to which several top-level representatives from local industry were invited. The goal was to exchange ideas and explore ways to further strengthen the relationship between the department and local industry. The department has been very proactive during the last few years in creating an environment that is conducive to further university/industry collaboration, both for student recruitment and for joint research. We are committed to continuing this effort.

Other events in the Technology Forum included research exhibits by our graduate students and faculty and by many local companies. The quality of the presentation and the diversity of the research projects in the exhibits was by far the best since this event started eight years ago. There were two well-attended technical panel sessions in the afternoon. One focused on biotechnology and where the emphases and the investments should be in this new arena. The other panel focused on security issues, in particular, on their cost and their implications for society. The keynote speech was delivered by this year’s distinguished alumnus award winner, Dr. Richard Weinberg, from the Computer Animation Laboratory at the University of Southern California. The title of his talk was “Entertainment Technology and its Applications”.

Because of the success of the Biennial Technology Forum, the Graduate Student Association (GSA) decided to hold a “mini-Forum” during this off year. The event will be organized primarily by the graduate students in the department to showcase their research projects. It will be held during the same week of October as our Technology Forum with a series of presentations and poster sessions. More information will be available on our department website at http://www.cs.umn.edu.

Another very exciting event in the department is the establishment of the University of Minnesota Software Engineering Center (UMSEC). Professor Mats Heimdahl will serve as the first director of the Center. Our very successful professional Master of Science degree program in Software Engineering (MSSE) will be transferred from the Center for the Development of Technological Leadership (CDTL) to UMSEC this fall. UMSEC is also developing a new course-only master’s degree program to complement the MSSE. Besides the professional master’s degree programs, UMSEC will consolidate all of the software engineering-related research programs currently being conducted in the department. It will include a dozen or so faculty members, their graduate students and staff. An outreach and industrial program will be established at the Center to foster closer collaboration with industry. We anticipate that with the establishment of UMSEC we will move one step closer to becoming a major academic research department in software engineering.

With five new faculty positions and two endowed chair positions to be filled this year, faculty recruiting will again be among the most important activities this spring. We have received a record number of applications (more than four hundred) and have identified an outstanding group of individuals to interview during the Spring semester. We are confident that we will hire another group of top-notch faculty members as we have done in the past few years.

The year is shaping up to be another busy and exciting year for the department. We look forward to bringing you further good news and more success stories later this year.

-Pen-Chung Yew
Innovation Through Collaboration: IBM and the University of Minnesota Making a Difference

Forming alliances with universities is an important part of IBM’s global strategy. The IBM University Relations organization selects universities for alliances based on the potential for collaboration on research and for recruiting the best technical talent. The institutions involved benefit from improved access to IBM offerings for skill development. The IBM Education Industry organization consults with K-12 and higher education to provide technology solutions for their business and education needs. Together these organizations work to ensure that IBM resources and relationships are optimized for its education partners.

IBM’s University Relations offers several programs including the following.

The IBM Shared University Research Award Program is designed to establish or enhance a strong IBM technical presence at leading research universities. IBM strives to connect IBM research, development and solutions employees with university faculty and researchers in areas of mutual interest.

The IBM Scholars Program is available to the entire worldwide higher educational community, including universities and technical colleges. The program allows faculty to access IBM’s wide range of resources -- products, services and personnel -- in order to advance teaching, learning and research through the use of information technology. The goal of the IBM Scholars Program is to provide the resources to encourage and educate individuals to become future technical innovators.

Ph.D. Fellowships are competitive scholarships for graduate students pursuing the Ph.D., intended to award, attract and recruit exceptional technical talent into IBM, to strengthen IBM’s relationships with top faculty, and to underscore IBM’s long-standing commitment to diversity in the workplace.

IBM Faculty Awards are competitive cash awards to faculty members in recognition of outstanding achievement in areas of interest to IBM. These awards are intended to encourage innovative projects, to foster collaborative relationships between IBM groups and leading faculty, and to aid IBM in recruiting top technical talent.

During the academic year 2002-03, IBM increased its university initiatives to extend their global reach. The company conferred 52 Shared University Research awards, representing a market value of $28 million, and 60 Ph.D. fellowships valued at $1.8 million in 2002. IBM also awarded more than $5 million to 203 faculty members at 75 institutions.

The University of Minnesota participates in all these programs and is considered one of IBM’s premier partners. In IBM’s Shared University Research program, the U of M is a first tier strategic partner. More than $6.5M in technology grants has been awarded to the U of M Supercomputer Center since 1993. Dr. William Pulleyblank serves as IBM’s Partnership Executive for the University of Minnesota. This special relationship developed from the long and deep partnership IBM has enjoyed with the University of Minnesota. In fact, IBM’s historic support for the U of M makes it one of the University’s largest corporate philanthropists. The synergy between IBM and the U of M, including recruitment, diversity, employee education and technology innovation, has benefited both organizations. Importantly, the impact of the University of Minnesota on IBM extends well beyond Minnesota’s borders.

The University of Minnesota earns significant technology and cash grants through the other IBM University Relations programs. The IBM University Partners Program has awarded competitive cash grants to support research projects of U of M faculty. U of M graduate students have earned competitive graduate fellowships to support their Ph.D. studies. Since 2000, U of M researchers have received $300K in financial support from IBM. Additional technology grants supported the startup of the University of Minnesota Rochester (UMR).

Advanced research in supercomputing, genomics, mathematics and computer science thrives from interactions with IBM Research. Special IBM product organizations collaborate with the U of M in materials and computer engineering. Most recently, collaborative activity around the integration of computing, biology and medicine have led to joint work with the U of M and Mayo Clinic. The supercomputing underpinnings of these projects are creating exciting new opportunities for us all.

Worldwide, IBM employs more than 1600 University of Minnesota alumni, 45 of whom have Ph.D. degrees. Over the past decade, several IBM researchers have worked and/or taught at the University of Minnesota. Most recently, Dr. Jim Licari utilized IBM’s Technical Academic Career Program to assume a position as the Assistant Director for Industrial Liaison at the University’s Digital Technology Center. In Minnesota, IBM employs 6,000, of whom 4,500 are technical professionals based in its development facility in Rochester. The U of M has played a significant role, now through the University of Minnesota, Rochester, in bringing educational opportunities to our employees there. Each semester, the University of Minnesota is invited...
to the Rochester site to recruit IBM employees for its academic programs. As a team, IBM works actively with UMR to design programs and new offerings in the curriculum such as MSMOT Signature Series, MBA, BA in Manufacturing Technology and UNITE ITV programs. IBM’s Academic Learning Assistance Program encourages employees to continue their formal education by enrolling in college courses or degree programs including masters and Ph.D. IBM provides full reimbursement for employee academic advancement. On average, 90 IBM employees are actively taking U of M courses in a given year, with seven advanced degrees already awarded.

Additionally, IBM employees and retirees serve on a variety of University department advisory committees, particularly in engineering, computer science and business programs. IBM also invests heavily in the technology worker pipeline through its undergraduate student cooperative program and its high school technology camp, among other programs to involve K-12 and undergraduates in technology fields.

There is no doubt that the presence of the University of Minnesota is a major contributor to the success of IBM in Minnesota, and IBM worldwide. From technology transfer and skills development to recruitment and retention of employees, the presence and support of this major research institution is a benefit to IBM and our state. Working together, we have the opportunity to innovate, create and advance the state-of-the-art in technology to benefit society.

- Jamshid Vayghan
THE 4th BIENNIAL TECHNOLOGY FORUM
October 17, 2003

The Welcome...

David Hamilton,
V.P. Research

H. Ted Davis, Dean,
I.T.

Pen Yew, Head, Computer Science & Engineering
with Technology Forum guests

The Exhibits..
The Lunch, Award Acceptance, and Door Prizes

The ACM Programming Contest

The dinner...
CSE Department Again Hosts ACM North Central Regional Programming Contest

The ACM’s North Central Regional Programming Contest was held at multiple sites on Saturday, November 8, including the University of Minnesota, Twin Cities. Fourteen teams competed at our site including four teams from the University of Minnesota, Twin Cities, five from Saint Cloud State University, two from Saint John’s University, one from Minneapolis Business College, and two from the University of North Dakota in Grand Forks.

The actual contest took place from 12:30 to 5:30. Teams of three students were given a packet of nine problems ranging in difficulty. It is rare to have all problems solved in a contest. The top three teams in the region each solved eight problems. The teams are ranked by the number of problems solved and the total elapsed time they required to solve the problems.

Submissions and questions were sent to the judges who worked in a separate room. Judges were Chuck Swanson and Carl Sturtivant from the U of M, Carl Burch from Saint John’s, Andrew Anda from Saint Cloud (and also an alumnus of the CSE Department,) and Terry Troutner from Minneapolis Business College.

Ten students from the ACM Student Chapter helped in many capacities, including running requests and submissions between judges and contestants, and helping with computer system issues and set up and clean up.

The CSE department supported the contest with staff time, especially that of Scott Dier from systems, and Georganne Tolaas and Bonnie Klein, administrative staff members. Bobbie Othmer was site director. Major funding was provided by IBM, the corporate sponsor for the ACM International Programming Contest. Additional funding was provided by Unisys through a gift to the ACM Student Chapter.

See www.cs.umn.edu/media/acm-ncna-03/ for pictures of the contest taken by Scott Dier.

CSE Programming Team Advances to World Finals in Prague

All Four CSE Teams Do Well in North Central Regional Programming Contest

Of the 182 teams that competed in the ACM North Central Regional Programming Contest on November 8, the U of M’s Maroon team placed fourth, solving 7 out of 9 problems and winning themselves an invitation to compete in the World Finals, to be held March 28 through 31 in Prague, the Czech Republic.

Members of the Maroon team are seniors Elliot Olds and Vishal Shah, and first-year graduate student Stefan Atev. Elliot, who is from the Twin Cities, was a member of the CSE team that placed first in the region last year and went to the World Finals in Beverly Hills. This is his third year competing in the ACM programming contests. He has also competed in online contests including TopCoder. Elliot graduated in December and is currently seeking an interesting and challenging position. Stefan Atev, from Sofia, Bulgaria, was a member of the Luther College team that went to the World Finals in 2001. He has competed in many programming contests since he was in sixth grade, and qualified for the Bulgarian National Olympiad team in 1999. Vishal Shah from Bombay, India, is competing for the first time. He will graduate in December, and wants to go on to graduate school to study intelligent agents and robots.

The Green team: Jesse Boetcher, Joe Wresching, and Elliot Apolinario-Wicoxon placed seventh, solving six problems. The Blue team of Ryan Morlok, Christopher Burns, and Ryan Shanley finished in 17th place, and the Yellow team of John Chilton, Tim Meyers, and Tim Dielschneider finished in 53rd place.

Three of our teams finished within the top 10 percent and all finished within the top 30 percent of the 182 teams competing this year. The coaches were Carl Sturtivant and Bobbie Othmer.

l-r: Vishal Shah, Stefan Atev and Elliot Olds
Software for Sparse Matrix Computations: SPARSKIT and pARMS

Sparse matrices are at the heart of many scientific and engineering applications, some of which are quite old while others are emerging from current trends in information technology. A matrix is said to be sparse when most of its entries are zeros. In this situation special techniques which exploit “sparsity” are needed. Traditional fields that first exploited sparsity in matrix computations include electrical engineering (power networks) and various applications related to the solution of partial differential equations. Among the recent applications, is the problem of ranking web-pages over the world wide web.

Software packages currently available for sparse matrix computations are often dedicated to solving sparse linear systems of equations. In fact, in the past three decades, research in sparse matrix techniques has been dominated by the development of effective direct solution methods for sparse systems, i.e., solution methods based on effective implementations of Gaussian elimination. SPARSKIT is a package developed by Yousef Saad for performing some of the basic computations with sparse matrices as well as for solving linear systems by iterative methods. The first version of the package appeared in 1989, is written in FORTRAN 77, and is still used by many for its “iterative solvers” suite.

A more recent package, called the parallel Algebraic Recursive Multilevel Solver (pARMS), has been developed by Yousef Saad’s team and is freely available. The goal of pARMS is to solve linear systems on parallel platforms. It is written in C and uses the Message Passing Interface (MPI) for communication.

pARMS is essentially a library of parallel solvers for distributed sparse linear systems of equations. It uses reconditioned Krylov subspace approaches, and exploits a domain decomposition viewpoint to partition the original problem. pARMS offers a large selection of preconditioners for distributed sparse linear systems and a few of the best known accelerators. The basic methodology used relies on a Recursive Multi-level ILU factorization which allows one to develop many of the standard domain-decomposition type iterative solvers in a single framework. For example, the standard Schwarz procedures are included as are a number of Schur complement techniques.

These packages are available from http://www.cs.umn.edu/~saad/software/home.html

-Yousef Saad

Many Thanks...

We would like to express our thanks to the following alumni and friends. Your support is invaluable in helping the department. We look forward to continuing this partnership in the future. Thank you for your support!

Corporations
Cisco University Research Program Fund
IBM Corp.
Intel Corp.
Microsoft Corp.
Quality Software Technology
Sprint United Management Co.
Unisys Corp.
Upsilon Pi Epsilon

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Susan M. & Robert R. Swenson
David C. Tauzell
Steve E. Van Allen
Robert D. & Elizabeth R. Vavra
Todd A. Viegut
Lance A. Visser
Derrick J. Walrath
Weldon L. Whipple
Rita Y. Wu
Xin Xu
Ying Zhe & Shaoping Zhou

-Yousef Saad
CS&E News Briefs

Chen Awarded McKnight Land-Grant Professorship
Professor Baoquan Chen has been selected as one of ten recipients of the University of Minnesota’s McKnight Land-Grant Professorship for the years 2004-2006 (http://www.grad.umn.edu/faculty-staff/mcknight/land_grant.html).

Heimdahl Wins Award
Congratulations to Mats Heimdahl who is a winner of this year’s U Awards for Outstanding Contributions to Postbaccalaureate, Graduate, and Professional Education.

Srivastava Elected an IEEE Fellow
Professor Jaideep Srivastava was elected an IEEE Fellow, effective January 1, 2004, for his contributions to the development of models and metrics for multimedia information processing.

Gini to Serve as Chair of Special Interest Group
Maria Gini has been appointed to a two-year term as chair of the Association for Computing Machinery Special Interest Group on Artificial Intelligence (SIGART). SIGART has more than 1800 international members.

Kumar was ExxonMobil Inaugural Speaker
Professor Vipin Kumar was the inaugural speaker at the Data Mining Seminar Series held at ExxonMobil’s Corporate Strategic Research Labs in Annandale, NJ, on October 3, 2003. His talk was entitled “High-Performance Data Mining: Applications and Challenges.”

Faculty Members Actively Assist in Conference and Workshop Organization
Professor Vipin Kumar is the Honorary Chair of The International Conference on Computational Science and its Applications (ICCSA 2004), to be held in Perugia, Italy, May 14 - May 17, 2004. Additional information is available at http://iccsa2004.unipg.it/.

Professor Nikolaos Papanikolopoulos has been appointed Program Chair of the 2006 IEEE International Conference on Robotics and Automation. Information on ICRA’06 will be available at http://www.ncsu.edu/IEEE-RAI/.

Professor Anand Tripathi is the Program Chair for IEEE PerCom 2004 -- International Conference on Pervasive Computing and Communication. The conference was held in Orlando, Florida, March 14-17, 2004. More information can be found at http://www.percom.org

Professor Joseph A. Konstan has been elected as Chair of ACM SIGCHI, the 5000-member professional society in the field of Human-Computer Interaction. He looks forward to leading the organization as it continues to push forward the interdisciplinary study and practice of designing computer systems that meet human needs and best complement human capabilities. For more information, please visit http://www.sigchi.org/.

Professor Joseph A. Konstan was general chair of UIST 2003, the Sixteenth ACM Symposium on User Interface Software and Technology, sponsored by ACM SIGCHI and SIGGRAPH. The conference, held in Vancouver, BC, November 2-5, 2003, is the premier forum for innovations in the software and technology of human-computer interfaces. Conference information is available at http://www.uist.org/.

Professor George Karypis will serve as the bioinformatics program co-Chair of the 4th IEEE Bioinformatics and Bioengineering Conference to be held in Taiwan in 2004. More information can be found at http://bibe2004.ece.uci.edu.

Professors Baoquan Chen, Victoria Interrante, and Gary Meyer of the graphics group will host the IEEE Visualization 2005 conference (http://vis.computer.org) in Minneapolis. Chen and Interrante will act as the general chair and program chair of the conference, respectively.

Professor Loren Terveen is co-chair of the Program Committee for the 2004 ACM Conference on Computer-Supported Cooperative Work. The conference, which will be held November 6-10 in Chicago, IL is the leading forum for presenting and discussing research and development achievements in the design, introduction and use of technologies that affect groups, organizations, communities, and societies. Conference information is available at http://www.acm.org/csconf2004/

Faculty Members Appointed Journal Editors
Professor George Karypis has been appointed associate editor of the IEEE Transactions on Parallel and Distributed Systems.

Professor Nikolaos Papanikolopoulos has been appointed Associate Editor of the IEEE Transactions on Intelligent Transportation Systems.

Anand Tripathi has been re-appointed as an at-large member of the IEEE Computer Society Publications Board for 2004. This is his third year term on the Publications Board. This Board oversees management and operations of IEEE Computer Society magazines, transactions, and books.

Professor Joseph A. Konstan edited the January 2004 issue of ACM Transactions on Information Systems, a special issue on Recommender Systems: Algorithms and Evaluation. This issue includes a paper by Professors Konstan, Terveen, and Riedl (along with Ph.D. alumnus Jon Herlocker) and a paper by Professor George Karypis and his student Mukund Deshpande. The issue can be found in the ACM Digital Library (follow the link to the table of contents from http://www.acm.org/tois).

Graduate students win award for User Modeling Paper
Graduate Students Sean M. McNee and Shyong K. Lam were recipients of the Best Student Paper award at UM’03, the 9th International Conference on User Modeling. Their paper, “Exploring Interfaces for Eliciting New User Preferences in Recommender Systems,” co-authored with Prof. Joseph A. Konstan and John Riedl, was recognized for its contribution to the field of research on user modeling.
News Briefs continued

Cannon Receives NSF Fellowship
Kelly Cannon has been awarded the prestigious National Science Foundation Graduate Fellowship. For additional information, please visit http://www.ehri.nsf.gov/dge/programs/grf.

Rasmussen Wins Honorable Mention
Matthew Rasmussen was awarded an honorable mention for the Computing Research Association’s Outstanding Undergraduate Award for 2004. “CRA’s Outstanding Undergraduate Award program recognizes undergraduate students who show outstanding research potential in an area of computing research.” The announcement has been posted at http://www.cra.org/Activities/awards/undergrad/.

Shekhar Participated in Congressional Program on Homeland Security
Professor Shashi Shekhar was selected to participate in The Congressional Breakfast Program. This year’s focus was on homeland security. The breakfast, sponsored by Senator Charles Schumer and Representative Christopher Shays, was held Thursday, February 5, 2004, 8:30 a.m. – 10:00 a.m. in the Rayburn Building, Room B-339. His presentation was on evacuation planning. Additional information can be found at http://www.ucgis.org/winter2004/program.htm.

New Awards

PI: James Chelikowsky (Chemical Engineering and Materials Science)
Co-I: Yousef Saad and Ranata Wentzkowitch
Sponsor: National Science Foundation
Title: “Institute for the Theory of Advanced Materials in Information Technology”
Project Period: 9/1/03-8/31/08
Amount funded: $3,000,000

PI: Victoria Interrante
Co-I: Lee Anderson, Architecture
Sponsor: National Science Foundation
Title: “Collaborative Research in Immersive Environments”
Period: 9/1/03-8/31/06
Amount: $379,196

PI: Joseph Konstan
Co-I: John Riedl and Loren Terveen
Sponsor: National Science Foundation
Title: “Collaborative Research: Designing On-Line Communities to Enhance Participation—Bridging Theory & Practice”
Period: 9/1/03-8/31/08
Amount: $996,813

PI: George Karypis
Sponsor: National Science Foundation
Title: “Graph Partitioning Algorithms for Complex Problems & Architectures”
Period: 9/1/03-8/31/04
Amount: $122,000

PI: Yongdae Kim
Agency: Architecture Technology Corp / Navy Prime
Title: “Multiple-security Multimedia Collaboration Environment (MMCE)”
Period: 7/8/03-12/19/03
Amount: $535,914

PI: Eric D. Kolaczyk, Boston University
Co-I: Shashi Shekhar and Sucharita Gopal
Sponsor: National Science Foundation
Title: “Complexity of Spatial and Categorical Scale in Landcover Characterization: A Statistical and Computational Framework”
Period: 8/1/03-7/31/06
Amount: $535,914

PI: Vipin Kumar
Co-I: Jaideep Srivastava
Sponsor: National Science Foundation
Title: “Data Mining for Rare Class Analysis”
Period: 9/1/03-8/31/06
Amount: $299,000

PI: Vipin Kumar
Co-I: Jon Weissman
Sponsor: National Science Foundation
Title: “Data Mining and Exploration Middleware for Distributed and Grid Computing”
Period: 9/1/03-8/31/08
Amount: $611,003

PI: Vipin Kumar
Co-I: Jaideep Srivastava, Yongdae Kim, Zhi-Li Zhang, Aleksander Lazarevic
Sponsor: NSA/ARDA
Title: “Situational Awareness Analysis Tool for Aiding Discovery of Security Events”
Period: 18 months
Amount: $800,000

PI: Ivan Marusic, Aerospace Engineering
Co-I: Vicki Interrante and Ellen Longmire (Aerospace Engineering)
Sponsor: National Science Foundation
Title: “Dynamic Methods for Identifying, Visualizing, and Tracking Eddy Evolution in Experimental Turbulent Flows”
Period: 3 years
Amount: $1,250,000

PI: Nikolaos Papanikolopoulos
Co-I: Georgios Giannakis, Stergios Roumeliotis, Baoquan Chen, Maria Gini, Richard Voyles
Sponsor: National Science Foundation
Title: “Multi-Robot Emergency Response”
Period: 5 yrs
Amount: $1,599,580

PI: Vipin Kumar
Sponsor: National Science Foundation
Title: “Graph Partitioning Algorithms for Complex Problems & Architectures”
Period: 9/1/03-8/31/04
Amount: $236,096.00

PI: Richard Voyles
Co-I: Maria Gini, Nikolaos Papanikolopoulos, Stergios Roumeliotis
Sponsor: National Science Foundation
Title: “Collaborative Research: Center for Safety, Security, and Rescue Robotics”
Period: 9/1/03-8/31/04
Amount: $236,096.00

PI: Mats Heimdahl
Sponsor: Titan Corporation/NASA prime
Title: “Tandem Experiments in Finding Faults During Model-based Development”
Period: 02/17/04-05/17/04

PI: Youssef Saad
Sponsor: National Science Foundation
Title: “Parallel Iterative Solution Algorithms and Software”
Period: 11/12/03-09/30/04

PI: John Carlis
Sponsor: NIH
Title: “Functional Genomics Analysis of HIV-1 Infection in LTI’s”
Period: 12/15/04-11/30/04

PI: Yousef Saad
Sponsor: National Science Foundation
Title: "Algorithms: Collaborative Research: Development of Vector Space Based Methods for Protein Structure Prediction.”
Period: 7/1/03 - 6/30/06
Amount: $236,096.00
Faculty Chairs: Wireless Communications & Networking

The Digital Technology Center (DTC) at the University of Minnesota in conjunction with the Department of Computer Science & Engineering (CS&E) and the Department of Electrical & Computer Engineering (ECE) invite applications for three faculty positions with endowed chairs (two ADC Telecommunications chairs and one Qwest chair). The appointments will be at the rank of Associate or Full Professor with tenure in one of these departments, or, potentially in related disciplines represented within the DTC. Areas of interest span all aspects of wireless and mobile communications, networking, multimedia distribution, distributed computing, and storage. Applicants must possess a distinguished research record, demonstrated ability in establishing and leading a highly visible research program, and a commitment to teaching at the graduate and undergraduate levels.

A Ph.D. in a relevant discipline is required.

The appointment will afford the right individuals the opportunity, resources, and flexibility to build a top-notch research program. In addition to these three chaired faculty positions, several positions in the areas of "digital technology initiative" are available in the CS&E and ECE departments. This initiative affirms the strong commitment of the State of Minnesota in strengthening the University as a leader in the area of digital technology. $63.4M renovation of Walter Library was completed in late December 2001. The Digital Technology Center has 42,000 assignable square feet or approximately one-third of the space in Walter Library. The University-wide Digital Technology Center is funded by the State of Minnesota, in which ECE, CS&E, and the outstanding new faculty members will play a major role. The DTC is the home for the University of Minnesota Supercomputing Institute, the Laboratory for Computational Science and Engineering, the Telecommunications and Advanced Networking Laboratory, and a Software Engineering and Internet Technologies Laboratory. The three new chaired faculty will find that DTC offers tremendous opportunities for collaborative and interdisciplinary research. For more information about the CS&E and ECE Departments, please visit their World Wide Web home pages at:

http://www.cs.umn.edu and http://www.ece.umn.edu/information/employment/ece/faculty/

Applicants should submit a curriculum vitae, and the names of at least three references to:

Prof. David Du, DTC Search Committee Chair
c/o Ann Johns, Assistant Director for Human Resources
University of Minnesota, Digital Technology Center
599 Walter Library, 117 Pleasant St. SE
Minneapolis, MN 55455.

You may also apply electronically to johns@dtc.umn.edu

Review of completed applications will begin immediately with the search remaining open until the positions are filled.