

## Abbasis endow professorship and fellowship



*Sohaib Abbasi*

Sohaib Abbasi, BS 78, MS 80, and his wife, Sara, have established the Sohaib and Sara Abbasi Professorship and the Sohaib and Sara Abbasi Fellowship in the Department of Computer Science. The endowed faculty position will enable the department to maintain its stature as one of the nation's premiere departments and give students the opportunity to learn from a world-

renown computer scientist and educator. The fellowship is intended to encourage exceptional Pakistani students to attend graduate school in computer science and is an expression of the Abbasis's commitment to foster talented Pakistanis in the computer field as well as to help Pakistan's technological growth.

Abbasi is senior vice president of the Tools Product Division of Oracle Corp., responsible for product design, development, and marketing, which includes application

development tools, groupware and collaboration tools, end user query tools, and new media tools. Abbasi was an early researcher of relational databases and a student of Professor Geneva Belford, who advised his MS thesis. In 1982, after two years at Professional Computer Resources in Oak Brook, Ill., where he developed financial accounting applications for IBM's System/38, he joined Relational Software Inc., the company that became Oracle. He co-developed SQL\*Forms Version 1 (now part of Developer/2000, Oracle's flagship application development tool) and has been managing the tools group ever since.

Abbasi has visited the department several times and delivered the inaugural Distinguished Entrepreneur Lecture in 1998. As advocates for a stronger Illinois presence in Silicon Valley, the Abbasis and U of I president James J. Stukel co-hosted a roundtable reception for technology executives that same year. The Abbasis have three children and live in Atherton, Calif. ■

*An article on Sohaib Abbasi appeared in the winter 1997 issue of this newsletter, which can be found by linking to the alumni newsletter from our homepage, [www.cs.uiuc.edu](http://www.cs.uiuc.edu).*

## First IMCS graduates attend commencement

Receiving the "award" for the farthest traveled to attend their May 2000 graduation were Suman Arya, Jayant Varma, Kulpreet Singh, Praveen Jain, Srikant Sadineni, Budhadeva Das, Ashwini Singh, Mohit Malik, and Jogesh Malhotra from India. They received their MCS degrees via the Internet as part of the department's IMCS program. They met their professors and TAs for the first time and took a tour of their alma mater. After the ceremony, most of the graduates remained in the United States to begin their new jobs while the others returned to India. The Internet computer science program began three years ago with three students from Quantum Institute in Delhi, India, and has blossomed to more than 100 students the world over. ■





## Alumni create PS2 hit

Volition, a game company founded and headed by Mike Kulas, BS 83, made its first foray into the RPG genre with the game *Summoner*. It was the fifth best-selling game for the Sony Playstation 2 at its October launch. Its next PS2 release will be *Red Faction*, a revolutionary first-person shooter. CS alums involved include Mark Allender, BS 90, MS 92, John Slagel, BS 93, and Dave Baranec, BS 97. Volition, formerly known as Parallax, made its mark in the gaming world with the highly successful *Descent* and *Freespace* series. It is located in Champaign, Ill., and was acquired in September 2000 by gaming giant THQ. ■

## CEAB meets

The College of Engineering Advisory Board met on campus October 4-5, 2000. A working group spent a half-day in DCL meeting with Department Head and Professor Dan Reed in the SmartSpace Laboratory. Members included Larry White, BS 75, MS 76, retired Microsoft; Stewart Schuster, MS 69, PhD 73, Brentwood Venture Capital; and Rick Cattell, BS 74, Sun Microsystems. Professors Reed, Roy Campbell, David Kriegman, Klara Nahrstedt, and Robin Kravets spoke to the group about the department, future projects, and Siebel Center and asked for suggestions from the board. ■

### [www.uialumni.org](http://www.uialumni.org)

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## Party time for alumni!



CS, ECE, and Physics alumni hear the latest departmental news during the Chicagoland 3Com reception in February 2000 at 3Com's new facility in Rolling Meadows, Ill.



Angeline Wong, BS 93, Karuaki Masamoto, BS 77, Harumi Masamoto, Heeren Pafhak, BS 90, and Sencan Sengul, MS 98, at a New England CS alumni gathering at the home of Fontaine PhD 68 and Judy Richardson in Carlisle, Mass., May 2000.



Vijay Jaswal, BS 90, MS 97, Vinson Gracia, and Matt Markus, BS 97, at the Bay area CS alumni reception hosted by Oracle in February 2000, Redwood Shores, Calif.



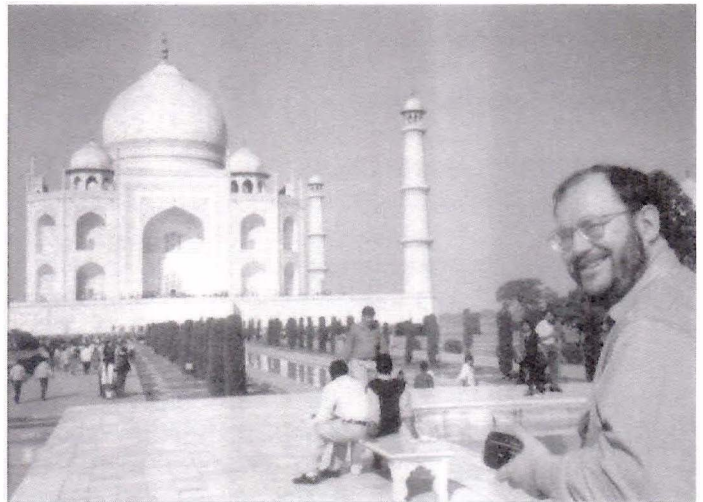
## From the corner office

Each year brings change. As a new year begins, we can all reflect with great pride on the accomplishments of the department's alumni, students, staff, and faculty.

Detailed design of Siebel Center, the department's new home, is well underway, with groundbreaking scheduled for summer 2001. This state-of-the-art building will provide much needed space for the department's expansion, both intellectually into new research areas and numerically as we add faculty members and students. See the back cover of this issue for a sketch of the building.

This year also saw the first graduates from our Internet MCS program, including students from the site-based program in India. Just before the holidays, I completed a whirlwind trip to India, visiting all five of the sites and meeting many of our remote students for the first time. The future of distance education seems bright, and I am very proud of the department's accomplishments in this area.

The department's endowment continued to increase due to the generosity of our alumni. Indeed, this issue describes the generous support of Sohaib and Sara Abbasi via an endowment for a new professorship and fellowship and the creation of the Hughes Award for Software



*Dan Reed at the Taj Mahal*

Engineering Excellence, made possible by a gift from Michael Hughes. We are grateful to these and our other donors for their commitment to excellence at Illinois.

The past year was also a time of transition when several long-time members of the department retired: Geneva Belford, Bill Kubitz, Jane Liu, Ed Reingold, and Marianne Winslett. They will all be sorely missed. Balancing these departures, four new people joined the faculty, with an associated influx of new ideas and research directions: Kevin Chang, Sariel Har-Peled, John Hart, and Yizhou Yu.

On a personal note, I want to acknowledge the enormous contributions of Professor Bill Kubitz, the department's associate head for many years. Bill officially retired in August, but he is still heavily involved with the department, supervising the design of Siebel Center. Over the years, Bill's wisdom and experience have served the department well, particularly as he has educated new department heads! We are all in his debt for years of service.

With a winter chill covering the midwest, we look forward both literally and metaphorically to a spring filled with new developments: research proposals and projects, faculty and student recruiting, awards banquets, and commencement. Stay well and be warm

*-Dan Reed  
Department Head*



*Dan Reed addresses MCS students at the Quantum Center in Delhi*

## Illinois chosen as NSA Security Education Center

The National Security Agency has designated the University of Illinois as one of its Centers of Academic Excellence in Information Assurance Education. Professors Roy Campbell and Dennis Mickunas represented the university at the formal recognition in May 2000 in Washington, D.C. The center's director is Roy Campbell, and its home is in the Department of Computer Science. The program is an effort by NSA to promote higher education in information assurance and increase the number of individuals in this field. Other institutions selected as centers this year were Carnegie Mellon, Florida State, Stanford, Tulsa, National Defense University, and Naval Postgraduate School. The Web site for the center is <http://ciae.cs.uiuc.edu>. ■

## New faculty members



Kevin Chang

Kevin Chang (PhD, Stanford) conducts research in databases and digital libraries, with emphasis on integration of autonomous and heterogeneous information sources in Internet query processing. His goal is to develop enabling technologies for transforming the Internet into the ultimate distributed digital library that provides uniform and efficient information access.



Sarel Har-Peled

Sarel Har-Peled (PhD, Tel Aviv University) is in computational geometry and has been concentrating on the theory, development, and implementation of approximation algorithms. He is particularly interested in computational geometry's applications in databases, data mining, graphics, and geographic information systems.



John Hart

John Hart (PhD, University of Illinois at Chicago) is in computer graphics, focusing on procedural modeling and texturing. His research involves new methods for constructing and analyzing algorithms to synthesize imagery through the controlled automatic generation of shape geometry and surface detail. His goal is to develop hardware and utilities that put the realism of modern computer graphics techniques into graphics software.

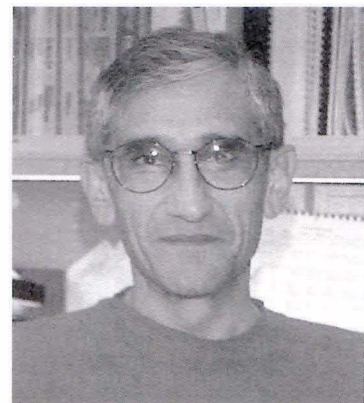


Yizhou Yu

Yizhou Yu (PhD, University of California at Berkeley) does research in computer graphics, focusing on image-based modeling and rendering, surface detail modeling, and simulation. He is also involved with photorealistic graphics, multimedia data compression for fast transmission, and high-level computer languages and user interfaces for graphics and human-computer interaction. ■

## Reingold and Liu leave

Professor Ed Reingold left the department in December 2000 after more than 30 years of service. He is joining his undergraduate alma mater, the Illinois Institute of Technology in Chicago, as professor and head of their computer science department.



Ed Reingold

Reingold came to Illinois in 1970, after earning his PhD at Cornell. Reingold's research has focused around analyzing algorithms. He and his wife Ruth will live in Skokie with their daughter, who is a sophomore in high school. Their other three daughters are grown and living on the east coast.

"Not many people have the chance to reinvent themselves in late middle age," said Reingold. "It's an interesting and exciting opportunity, which is too nice to pass up." Last spring, Reingold won the Everitt Award for Teaching Excellence, one of the most coveted faculty awards in the College of Engineering.

In May 2000, Professor Jane Liu left the department after 27 years of service to join Microsoft as an architect in their Core OS Group, which develops the OS kernel. Living in Seattle has made it easier for her to see more of husband Dave Liu. He became president of Tsing-Hua University in Taiwan after he left the department in 1998.



Jane Liu

In addition to real-time systems, her research has been in scheduling and load balancing, communication networks, and distributed systems. She received her BS from Cleveland State University and her MS and PhD from MIT. Before joining the Illinois faculty, she worked for the U.S. Department of Transportation, Mitre Corporation, and the Radio Corporation of America. ■



# HP Jornadas give students chance to experiment

The computer science department is involved in a study to advance the idea of active information spaces and ubiquitous computing. Participants are using 200 Jornada handheld computers and ten servers, donated by Hewlett-Packard, to create a computer network. The networking between the handheld devices and the servers is wireless, allowing users to access the UI network from just about anywhere as they move around DCL.

Professor Roy Campbell, who has a \$3.3 million grant from NSF to study ubiquitous computing and smart spaces, is overseeing the project. First, researchers want to see what use the students will make of the devices. Second, the students have been asked to do little projects.

Junior Josh Michaels and SIGMobile, a student interest group within ACM, are working on a way to put your own personal radio station in your pocket.



*Manuel Roman, cell phone and Jornada in hand*

Their software would allow a handheld computer to download and play digital music files wirelessly. Graduate student Vijay Gupta is working on ways to speed up the transfer of data between mobile and desktop computers that are communicating wirelessly. Graduate student Sarosh Havewala is studying which encryption techniques work best to protect wireless data from snoops on the handhelds.

Graduate student Manuel Roman is developing software to integrate a handheld computer into a room-based system. This particular project dovetails with work of Campbell, Professor Dan Reed, and others who have been doing research on smart spaces. They have built a demonstration office that recognizes your electronic name tag when you walk in, greets you by name, sets the lights the way you like, and brings up your personalized news feed on a computer. Eventually, Campbell said, computers will vanish into the woodwork and do their thing without users even thinking about it. "It's going to be a while," he said. "The research that we're getting funded for is to look at the infrastructure."

The HP Jornada 680, which the students are using, has a 133 MHz processor, 16 MB SDRAM, 640x240 pixel color LCD display, audio speakers and microphone, large keyboard, and touch screen. Software includes Microsoft Windows CE 2.11, Pocket Outlook, and Internet Explorer.

# Distinguished Entrepreneurs share their wisdom

The Distinguished Entrepreneur Lecture series has been a hit, with speakers talking to packed rooms of interested students and faculty. Fall 1999 featured Mark Tebbe, BS 83, chairman of Lante, a Chicago-based Internet consulting firm he founded in 1984. He talked about e-commerce and how he started his business. Spring 2000 brought in speakers Rick Cattell and Mark



*Mark Tebbe*



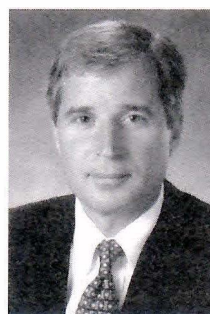
*Rick Cattell*

Tolliver. Cattell, BS 74, is a distinguished engineer at Sun Microsystems and is known for his work on object-oriented databases and database user interfaces. He is a member of the College of Engineering Advisory Board. He spoke about what he learned in engineering school, the basis for a book he is writing while on leave from Sun.

Mark Tolliver, BS EE 73, is execu-

tive vice president of Sun Microsystems and president of iPlanet. Tolliver gave a talk entitled, "Net bets: Growth and opportunity in the next phase of the Internet." Tolliver is also on the COE Advisory Board.

Fall 2000 brought David



*Mark Tolliver*

Gold, BS 67, MS 69, PhD 72, founding partner of



*David Gold*

Indosuez Ventures, a venture capital firm in Menlo Park, Calif. He spoke about "the economics of the VC business." These talks are archived on the Web and can be linked to from the CS home page, [www.cs.uiuc.edu](http://www.cs.uiuc.edu). ■

# Carl Dill up to challenge of AOL Time Warner



Carl Dill

Carl Dill, MS 69, is vice president and chief information officer for Time Warner. How did a computer scientist, whose thesis was entitled, "A computer graphics technique for solving stiffly stable differential equations," become a top executive of the world's leading media company?

Dill grew up in the North Shore suburb of Lake Bluff, Ill., earned his BA in mathematics from Northwestern in 1967, and came to graduate school in computer science at Illinois. At the time, it was one of only a handful of such programs in the world. He worked with Professor Bill Gear on graphical methods for solving differential equations. Dill spent several summers working on control systems for manufacturing companies, which gave him a taste of industry life. After graduation in 1969, he worked at West Point, where he spent two years running the military academy's data processing operations.

In 1971, with the economy in recession, Dill joined Andersen Consulting in Chicago, where he worked on a variety of projects (a national order-entry system for Kraft, payroll for the Chicago school board) and worked with advertising clients and other large-system engagements. He rose to become one of the few national experts on CICS (an IBM mainframe operating system) and online transaction processing. When Dill and his wife had their first child, the consulting lifestyle became problematic, so he became corporate director of MIS for one of Andersen's audit clients, McGraw-Edison. Four years later, McDonald's hired Dill as its CIO, where he spent the next 16 years. McDonald's is headquartered in Oak Brook, Ill.

"I got to put the first computers in restaurants," Dill recalled. "We dealt with cash registers, inventory and labor management, crew scheduling. I put in huge volumes of real estate modeling systems, using CAD terminals to build restaurants and to figure out how much dirt to move. We analyzed traffic patterns and put in global shared-financial systems. One of the biggest projects was to figure out how to convert cash registers to become PC-based, with our own software."

In 1998, Dill was recruited by Time Warner to be its CIO. Dill had earned a reputation as being a visionary and innovative thinker. Coming from outside the entertainment industry, he was not constrained by past failures. He was hired to work on frontline competitive strategy during a time when digital technology was revolutionizing the entertainment industry, at a company in which everything directly interacts with the customer. Time Warner had just reorganized, and Dill's first tasks were to find leverage points between business units with technology infrastructure and sharing and to develop the company's Internet business strategy.

With the merger, Dill is VP and CIO of AOL Time Warner. "There is a new digital infrastructure to invent, e-commerce to worry about, Internet strategies to work out," he said. In short, it will be Dill's job to look for new business opportunities and to make the combined companies work.

Dill pointed out that the era of interactive television and high-speed Internet connections with broadband is already here. He predicted that we will see a huge increase in Internet usage and options available to the consumer by 2002. "We're already seeing it," he said. "We have the first elements of digital TV and interactive TV coming out in small segments to homes. TV is really the last non-interactive mass medium. Everything is going to be interactive. . . . Convergence is coming. Within two years, it will be widely discussed and used, but it will probably be 2004 before it is up to the current level of Internet usage." A major technical hurdle, he noted, is video compression technology.

Wireless will become even more popular. "People are going to want access to information without being tethered to a PC," said Dill. "Wireless access is coming more slowly here than in the Far East. Here it's business-oriented. Consumers haven't caught on yet. Our Internet phones require too many steps, and the screen is too small. We expect a dramatic difference in two to three years." One big technical challenge is to create a meaningful interface for handheld devices.

The sheer volume of big-name companies, the pace at which things move, and being at the center of the media and entertainment business has made the transition from Chicago to New York exciting, said Dill. His two daughters are grown, and Dill and his wife, Carol, live near Lincoln Center, walking distance to his office in Rockefeller Center. Carol Dill is active in several major charities, church, and their community. "Culturally, New York is fantastic," said Dill, "with all the things you'd expect. The people here are exciting to work with and very down to earth." ■



# Andy Laursen takes a break from Phone.com

Andy Laursen, MS 82, recently retired from his position as vice president of Phone.com, a pioneer in WAP (wireless application protocol) technology, the software that enables delivery of Internet-based services to mass-market wireless phones and other handheld digital devices.



*Andy Laursen*

It was largely because of his high school mathematics teacher, who taught him Fortran programming in 1970, that Laursen went to Michigan State to study computer science. Laursen was from the northern Michigan town of Manistee. After graduating, he worked at Bell Laboratories in Naperville, Ill., and attended the U of I as part of its advanced degree program. He chose the U of I in part by the fact that artificial intelligence researcher Donald Mickey was here, as a visiting professor from University of Edinburgh. Mickey had worked with Alan Turing to break the Enigma code, used by Nazi U-boats in World War II. Laursen's time at Illinois—only one year—was concentrated, leaving little time for anything but study.

Returning to Bell Labs, Laursen worked on 5ESS, an electronic switching system still in use today. "It was an interesting program," he said, "because at the time, AT&T realized they were getting their butts kicked by Northern Telecom. So they took a bunch of CS grads and built this phone switch using state-of-the-art computer science—modern OS, theory, relational databases. I wrote the underlying database access switch."

As software startup companies began to emerge, Laursen rode the tide to California and joined Tolerant Systems, a fault-tolerant technologies company that grew out of AT&T's Unix OS (now part of Veritas Software Corp.). After two years, he spent more than a decade with Oracle.

Laursen was one of the original designers of the kernel for Oracle6, the first database to take advantage of

multiple processors with shared memory, and later worked on Oracle7. Then he started the group that built the massively parallel video server that became Oracle's DVD division. The division evolved into Network Computer, Inc., an Oracle spinoff devoted to software for network appliances, which changed its name to Liberate in 1999. "I was doing more and more entrepreneurial things inside a large company," said Laursen, "so I decided to do a real startup."

The startup Laursen joined in 1995 was Unwired Planet, founded as Libris about six months earlier. He had met founder Alain Rossmann and had worked with their VP of marketing, Ben Linder, at Oracle. Their idea was to develop infrastructure software to enable the convergence of the Internet and mobile telephony. Laursen, employee #18 and VP of engineering, was in charge of six people. In a few short years, the company ballooned to 300 people. In 1997, it co-founded WAP Forum, the industry association developing the world standard for wireless information and telephony services on digital mobile phones and other wireless devices. CEO John Listwin was hired out of Cisco. In 1999, Unwired Planet changed its name to Phone.com, and the company went public. In August 2000, it merged with Software.com, a leading Internet infrastructure software company. Phone.com's WAP-ready product line now leads the industry.

"The phone system is the last bastion of the mainframe," said Laursen. "It was built on 1980s mainframe concepts. Phone.com's real mission is selling the next generation of IP-based software and applications, so you can do things like get e-mail from your PC, a set-top box in a motel room, or your cell phone. They provide that suite of software to cellular carriers worldwide."

During summer 2000, Laursen took a well-deserved break and retired from Phone.com. He had averaged more than 100 hours per week for the last five years. He and his wife, Shana, moved from Silicon Valley to a ranch in Auburn, Calif., where she is helping establish a charter school. In addition to raising their two sons, ages 7 and 9, Laursen has more time to devote to his passions—fly fishing and flying. He is also doing some angel investing and is on the boards of several companies. ■

# Max Levchin and Luke Nosek: Pals and PayPals

Chances are you know about PayPal. If you ever use eBay, the PayPal/X.com icon is ubiquitous. The online payment system is beyond buzz and is now a widely accepted way for people to make online cashless payments to each other, even from one handheld device to another. You can beam money to a person or send it via e-mail. If the recipient is not yet a PayPal user, in a couple of clicks, that person will be (at no cost, of course). It is their viral business model, and the young company, now X.com, already boasts millions of users.

Wouldn't you know some Illini minds were behind PayPal? PayPal was co-founded by Max Levchin, BS 97, and Stanford alum Peter Thiel in December 1998. Inhabiting Google's old office in downtown Palo Alto, the company was initially called Confinity, combining the words confidence and infinity. Confinity became PayPal and later merged with its archrival, X.com. Robert X. Cringley recently called Levchin "the founder of the next CitiCorp."

The origins of PayPal really started with Levchin and Luke Nosek, BS 96. Levchin honed his programming skills in Kiev, Ukraine, where he grew up and attended a special school devoted to mathematics, physics, and computer science. Levchin's family moved to Chicago in 1991, when he was 16, and spent what little money they had on a 20 MHz 386SX so he could continue his computer studies. Nosek was born in Poland but moved as a young child to the Chicago suburb of Glen Ellyn, where he learned to program on a TI 99 4A.

Levchin and Nosek came to the U of I and met in ACM, the student chapter of the Association for Computing Machinery. Levchin became chair of SigGraph, the special interest group devoted to graphics, and Nosek became chair of the Unix group, SigUnix, and vice chair of SigArch, the architecture group. In addition to working on ACM projects, both held computing jobs on campus. Levchin worked with mathematics professor George Francis to establish the Linux lab in the basement of Altgeld Hall and on CAVE applications (NCSA's virtual reality environment). Nosek did a research internship with CS Professor Andrew Chien (now at UCSD). Levchin and Nosek's



Max Levchin



Luke Nosek

first entrepreneurial venture together was designing and selling a t-shirt for Engineering Open House in 1995.

When Levchin graduated he launched his own startup in Champaign, NetMeridian Software, and was an early developer of palm-top security applications. NetMeridian's most successful products were ListBot, an e-mail marketing tool, and PositionAgent, a tool that tracks a Web site's search engine ranking. Both are now owned by Microsoft as part of its LinkExchange Network.

When Nosek graduated, he went to Netscape in Mountain View, Calif., and consulted with several startups. As NetMeridian grew, Levchin moved to

Silicon Valley as well. Levchin met Peter Thiel after a lecture Thiel gave at Stanford on world financial markets. The two decided to meet for breakfast, where they discussed a variety of ideas and potential businesses.

"Max wanted to do something with encryption, and Peter wanted to do something in finance," Nosek recalled. Levchin had figured out a way to keep a secure password on a Palm Pilot. That idea really didn't take off, so they came up with a second product: the micro-wallet, a device that stored credit card numbers. "Somewhere in there was the idea of PayPal. It was Palm to Palm, originally, but we knew that an Internet component could be useful, too," said Nosek. Levchin agreed, "The idea evolved out of doing payments on handheld devices. We were doing security stuff, but it was difficult to break into corporate markets. We asked ourselves what we could apply our security expertise to. Peter had done a lot of finance work as a securities trader in New York. We started to think about it, and it all pointed to money. After some communal brainstorming, we started building this stuff." In the summer of 1999, they went full-speed ahead on e-mail payments, in addition to the handheld device work. After all, the Internet had millions of users, whereas handheld users numbered in the thousands.

Scott Banister, another Illinois computer scientist, encouraged Levchin to write up a business plan and build a company. Levchin turned to Illinois-trained computer scientists for talent and immediately recruited Nosek. Joining them after a few weeks, were Russ

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# Michael Hughes endows software engineering award

Michael Hughes, BS 89, is an expert in network security and a software development manager for McAfee, the antivirus unit of Network Associates. He is passionate about the need for software engineering skills among software developers and their importance to the success of any company involved with computing. To recognize the achievements of students in software engineering and to encourage more students to participate and to thrive in software engineering, Hughes established an endowment to support the Michael S. Hughes Award for Software Engineering Excellence. "What I want to see from the university is quite simple," Hughes said. "To turn out programmers with solid fundamentals and a wide breadth of experience. I can teach them the business, but I don't have time to teach them how to program. The purpose of the university is to prepare students for their careers, and as a manager who is constantly looking for people to recruit, I value that preparedness very highly."

The Hughes Award was given this year for the first time to Michael Padgett, a senior in the department's new software engineering certification program. Padgett's award was based upon his performance in the software engineering sequence (CS 327 and 329) and his effort as a member of the class project team that developed ATHENA, a Web-based game engine.

Hughes comes from a long line of Illini, including his parents and both grandparents. He learned to program on a TI99 in high school. As a three-time All-State cross country runner in Oklahoma, Hughes sought a university strong in both computer science and track and came to Illinois on an Avery Brundage scholarship. A stress fracture and the demands of academics eventually eclipsed his track career, but he remained active in intramural athletics. A great deal of his time was spent at the Krannert Center for the Performing Arts as director of computer services and chief programmer of the Krannert Center Student Association. He worked for several years as a student programmer for the University of Illinois Foundation and did a summer internship at McKesson Corp. in San Francisco.

Hughes's first job after graduating in 1989 was at Andersen Consulting in Chicago, where he worked on CASE tools for client-server development and network communications. With a lingering urge to move back to California and ready for a change, Hughes joined McAfee in Santa Clara, Calif., in 1994. There he started working on NetTools, a Windows management product, and then moved to security, working on the first version of VirusScan 95, the leading antivirus program. As one of only three developers on the project, he was involved in all aspects of software development. Hughes later

worked on NetShield for Windows NT and NetShield for NetWare, both server virus protection products, and ePolicy

Orchestrator, a scalable tool for IT managers and network administrators to provide virus protection for their enterprise.

With more than 55,000 existing viruses and 550 new ones per month, it is a real challenge to keep up with computer viruses, Hughes said, and it is only going to get worse. The new technologies in today's fast-moving computing environment provide a daunting challenge for antivirus program developers. "We need to stay on top of new devices and programming languages," Hughes explained. "Technology has moved so fast, and the new technologies are the places to look for viruses. Windows and e-mail viruses are controllable. New viruses are now hitting cell phones and handhelds. The more we network, the worse it will be. It all comes down to the fact that we're making things more powerful and interconnected. The antivirus community stays ahead of the curve by using heuristics in software to detect new viruses. On new devices, we can anticipate and be ready for new types of viruses, but until they actually strike, it's tough to protect people. Our edge is that we have the fastest turnaround in the industry." To do that, McAfee recently launched AVERT WebImmune, an online service that delivers real-time detection and information for new virus submissions and inquiries.

Hughes telecommutes to Network Associates in Beaverton, Ore., from his home in San Francisco, where he lives with his partner Marty Fung, a pediatrician. In addition to being an avid San Francisco Giants fan and visiting the ballpark whenever possible, Hughes is resuming some of the activities that hark back to his college days of Krannert and running track. He enjoys the wealth of theater and dance the city boasts, and he runs with the San Francisco FrontRunners running club. He competed in the last two Gay Games, a worldwide, Olympic-style competition held every four years, and he aspires to run a marathon someday. ■



Michael Padgett and Michael Hughes

# Ramesh Haridas, Matt Markus, and PrivacyBank.com



Ramesh Haridas

Millet Software's PrivacyBank.com information control center was the first Internet service to incorporate privacy protection mechanisms that inform online consumers about a merchant's privacy policies at checkout time. In addition to centrally managing their billing and shipping preferences, Millet Software's technology gave consumers an easy drag-and-drop way to

automatically fill out order forms on the Web. The Berkeley-based company was founded in 1998 by Ramesh Haridas, BS '96, and Matthew Markus, BS '97, and was acquired two years later by Seattle-area software giant InfoSpace.

Convinced by his aunt in Chicago to attend the U of I, Haridas came from India to join the CS department. "I immediately became involved with ACM," he said, "and I spent way too much time in DCL. Gopher had just come out, and my roommate, Brygg Ullmer, and I spent many late nights logged onto the Internet from the dorms." Ullmer, BS '95, is now with MIT's Media Lab.

Haridas spent six months working as a programmer at Microsoft, a year abroad at the University of Manchester, and one summer as an intern at McKinsey & Co. He was also briefly involved with a campus startup called Axon, a short-lived information retrieval company founded by Rob Seed, BS '96, where Matt Markus was working.

Markus attended Lyons Township High School in La Grange, Ill., where he migrated from gaming to programming. "Games are a fantasy world," he remarked, "and computers are an even bigger fantasy world. It's a better and bigger game that never ends. You can make your own world." He described himself as an intense undergrad whose idea of a fun night was sneaking into Newmark Hall's EWS lab in order to work on MPs and talk to interesting people. In addition to working for Axon, Markus was also employed by educational psychology Professor Del Harnisch.

After graduating in 1996, Haridas returned to McKinsey in New York, his favorite city, where he worked on Internet strategy within their IT department. A concept that piqued his interest was Internet advertising, which led him, a year later, to join a startup called ImpulseBuy Network, a company that former classmate Scott Banister was involved with. Long hours and a small equity stake sent Haridas packing for Silicon Valley in spring 1998, where he joined a San Francisco Internet startup called NetProspect.

When Markus graduated in 1997, he took a job in Wichita, Kans., with Symbios Logic (acquired by LSI Logic) working on RAID controllers for data storage. Asked why he decided to go geographically off the beaten path, he replied, "It was nice because it was outside the [computer] culture. I needed a job more than I needed a lifestyle."

In San Francisco during a software conference in March 1998, Markus and Haridas got together. They reflected on Axon, talked about how things could have been better, and exchanged ideas. Markus had a GPS-related idea in which ads could be targeted to people based on where they were, and they were both intrigued by Amazon.com's one-click buying system. Markus was also interested in privacy issues. Could these ideas be combined somehow? The answer was yes, and they concluded that there was a need for a system that could transfer personal

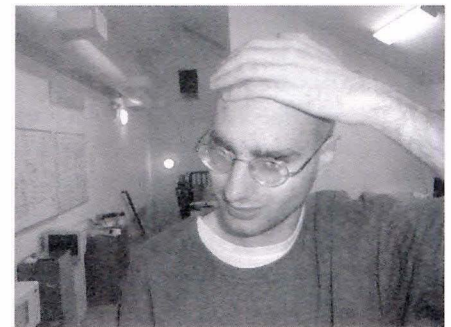
data and at the same time safeguard privacy. A few months later, they formed PrivacyBank.com and incorporated under the name Millet Software.

InfoSpace acquired PrivacyBank after Haridas met InfoSpace president Naveen Jain at a conference in late 1999. Two weeks later, the discussions turned serious and, by March 2000, it was a done deal. Shortly afterward, the technical team relocated to Washington and began working at InfoSpace's new Bellevue headquarters.

At the time of the acquisition, Millet had grown to eight people, five of whom were from Illinois: Haridas, Markus, Geoff Simons, BS '96, Vijay Jaswal, BS '90, MS '97, and Vince Gracia. Markus lives in Bellevue and is a senior software engineer helping InfoSpace build a product called merchant.com.

Once completed, merchant.com will operate as a "universal shopping cart" with which users can comparison shop and purchase items from several different vendors through a single, uniform interface.

Challenges include the programming of a complex middleware layer that incorporates AI concepts. "We need a way of transferring data between many different systems that were never supposed to talk to each other," said Markus. "Right now, we do a lot of manual mapping. It's very expensive to pay people to look at sites



Matt Markus

*continued on next page*



# Olympian Karen Kurreck

It is probably safe to say that Karen (Brems) Kurreck, BS '84, was the only computer scientist on the 2000 U.S. Olympic team. Already a world champion, she competed in the Sydney Olympics as a member of the U.S. women's cycling team.

Kurreck grew up in Urbana and attended Illinois on a gymnastics scholarship. Unable to major in bioengineering (the major did not exist), she majored in computer science after taking her first programming course. "I didn't sleep much," she said about her student days. "I went to class all morning, then to the gym, home to eat, did homework, and studied until the wee hours."

Her hard work paid off for both academics and athletics. She was All-Big Ten and Big Ten Medal of Honor winner in gymnastics as well as an Academic All-American, and University of Illinois Athlete of the Year (1984). Cycling was simply a way to enjoy the fresh air outdoors. She rode her bike to and from classes, and as a child rode around the south farms with her father, an economics professor.

After graduating, Kurreck took a job with LSI Logic in Silicon Valley, where worked as a programmer while earning a master's degree from Stanford University. She was still cycling recreationally and didn't get serious about it until she started doing triathlons. In 1989, she finished third in the 25-29 age group at the U.S. national triathlon championships. "Being a student athlete was good training for being a working athlete," she said. Because her best event in the triathlon was cycling and running produced too many injuries, she devoted her time to cycling, competing in her first race in 1991, and beginning serious training in 1992. She switched jobs and worked for Software Publishing Corp. In 1994, she made the U.S. national team and won the world individual time trial in Palermo, Italy. Intense training at a world-class

level led her to take a leave from her full-time computing career.

For the last couple years, she has been training in Italy with elite cyclists from all over the world as a member of an Italian racing team. Today, at 38, she is known as one of the best time-trial riders in the world.

Computer science has played a role in her success. "I'm more analytical about my training," she said. "I use a more scientific approach to my training perhaps than others. I keep detailed records and train with a power measuring system." She measures her power in watts, graphs her performance, and examines quantitative data to fine-tune her training. "The bottom line is improving yourself," she said, "and race results don't tell the whole story. In road racing, there's a lot of strategy and tactics, and not always the strongest person wins."

Kurreck is one of only three women who made up the women's U.S. Olympic cycling team. She competed in the road race, a 120-km race against other riders, and the time trial, a 30-km race against the clock. A crash prevented her from finishing the road race, but she came in 16th in the time trial.

After the Olympics, Kurreck resumed her career as a computer programmer, and she still has the goal of repeating her world championship victory. ■



Karen Kurreck at the 2000 Olympic Time Trials

Casey B. Gibson

## PrivacyBank, continued from p. 10

that constantly change. It's a very hard problem. Without actually building a person, there is only so far that you can automate the process."

Markus is considering going to graduate school in systems engineering where he can study the "big picture view of things" and exploring his interest in biological systems. *Systems Science, Software, and Psychology: An Integrative Approach* is the working title of a book he plans to write.

As vice president of business development, Haridas remains in San Francisco to establish an InfoSpace

presence in Silicon Valley. He is also working on structuring deals with financial institutions using the company's suite of wireless services. Technical challenges in that area involve building a good collaborative filtering search system. Like other alumni who have gone on to careers with startups, Haridas is encouraged to hear about the university's efforts to promote startups in Champaign. "There is so much raw talent at Illinois," he said. "It's important to help incubate that." ■

# Anil Singhal monitors networks with NetScout

Anil Singhal, MCS 79, is co-founder, president, and CEO of NetScout, an infrastructure performance management company based in Westford, Mass. NetScout pioneered standards-based network performance technology for global, complex, high-speed networks.

Growing up in New Dehli, Anil Singhal's first introduction to computer technology was in learning Fortran his senior year at the Birla Institute of Technology and Science, Pilani, India. A particular attraction to studying computer science was the prospect of having an air-conditioned office, he said. He earned his BS EE in 1975.

The reputation of the university's CS program and the fact that two-time Nobel prize winner John Bardeen was on the faculty drew Singhal to Illinois. Singhal had never been on a plane before coming to the United States. Life in Illinois, with its cold weather and scarcity of good vegetarian food, was a huge adjustment. It took about six months for Singhal to feel really good about his decision. Weekdays were filled with study, and the weekends were spent at the many campus movies available in those days.

Singhal graduated with an MCS in 1979 and found a job at Wang Laboratories in Massachusetts, which he described as "a tremendous learning place." For five years, he worked in software engineering, operating systems, and software development. When the company began its decline, Singhal and Wang colleague Narendra Popat left in 1984 to start Frontier Software, which was initially a consulting firm. In 1992, they shipped their first product, a standards-based Ethernet probe. But in 1995, the company began to benefit from the explosive growth of the Internet, and in 1997, they changed its name to NetScout.

NetScout produces a suite of hardware and software products that help measure and improve the performance of computer networks. "NetScout's job is to make the customer's network and application infrastructure run smoothly," Singhal explained. "A few years ago, that simply meant that we were going to make your network run better. Now, it means that we are going to make your business run better." NetScout monitors and troubleshoots problems in a network by fitting probes at



Anil Singhal

key points to collect information without disturbing the network.

In 1997, Singhal and Popat were named Entrepreneur of the Year in technology, communications, and entertainment by Ernst & Young. Now, NetScout employs approximately 350 people, has revenues of about \$100 million, and went public in August 1999. In their market space, they are leaders. In 2000 they acquired NextPoint Networks and renewed their close technology and sales partnership with networking giant Cisco Systems. Forbes ranked Netscout #22 on their year 2000 list of 200 best small companies.

The future looks even brighter. "In spite of what's happening in the market," said Singhal, "business is still strong. Businesses will depend more and more on the network, and business will not survive if the network is not foolproof. So people will continue to need our products." As CEO, Singhal is involved in company strategy. Right now, this means adapting to the new LAN and WAN technologies, including optical, wireless, multimedia, and storage networks.

In addition to work, Singhal spends time with his wife, Abha, and their two young daughters. He has a passion for cooking (he exercises to the Food Network), traveling, and developing mathematical equations to describe organizational behavior and how people interact with each other. Reflecting on the future, Singhal doesn't readily anticipate starting another company. "I've done many things in my life that are the first and last time," he said. "I am very entrenched in seeing the efforts I have invested in NetScout come to fruition for just now." ■

*Let us know . . .*

*. . . what's been happening with you!*

Send e-mail to [alumni@cs.uiuc.edu](mailto:alumni@cs.uiuc.edu) to update us on your activities or submit a classnote. Also, join our online directory by linking to alumni from [www.cs.uiuc.edu](http://www.cs.uiuc.edu).



# Kei Obara: Innovation at Ennovate Networks

Keiichi Obara, MS 81, is founder and VP of business development for the Asia Pacific region at Ennovate Networks, a data networking start-up that produces multiservice edge switching platforms. Headquartered in Boxborough, Mass., the company helps network service providers build and deploy next-generation networks that support the creation of real-time frame relay and IP services.

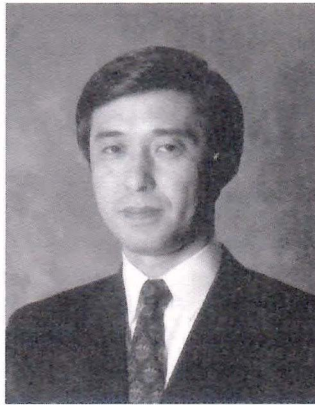
Obara got his BS degree in electrical engineering in 1973 at Waseda University, Tokyo, Japan, and worked as a hardware engineer on telecommunications equipment for Toshiba. As mini-computers and microcomputers became widely used in telecommunication systems, Obara decided to attend graduate school in the United States and chose Illinois on the recommendation of a colleague.

Obara fondly recalled weekly lunches with Professor Saburo Muroga, at which Muroga would lead a discussion among Japanese CS students about the university, industry trends, the economy, Japanese companies, and other topics. Muroga also recommended that everyone read *BusinessWeek*, which Obara credits for sparking his own interest in business. Muroga's lunches are a 30-year tradition that continues to this day.

"Professor Michael Faiman was my thesis adviser," Obara said. "Because I had an interest in computer networks, I selected a network-related thesis. In those days, there was no Internet and no Web sites. There was ARPANET, the computer network linking most of the scientific host computers that became the foundation of the Internet, and an e-mail system under UNIX.

When I started my thesis, Ethernet became popular, and its specification was going to be defined by DIX (DEC, Intel, and Xerox). I read Bob Metcalfe's paper. It was quite a unique idea to share 10 Mbps high-speed communication media. It was a simple and attractive method for connecting computers, but installing thick, coaxial cable everywhere in a building seemed difficult. For my thesis project, Professor Faiman suggested using twisted-pair cable and to slow the transmission speed to 1 Mbps. It was called 'Poor Man's Ethernet.'" Obara also designed and made IO cards for Faiman's computer lab, where students were using early versions of personal computers.

After Obara finished his PhD, he returned to Toshiba as an engineer, where he designed Ethernet products and LAN equipment. He then moved into engineering management and led a large development team devoted to time division multiplexors and ATM switches. The



Kei Obara

ATM market did not grow as the network industry expected, and IP became the dominant technology. Obara was assigned to lead a new project around the Cell Switch Router.

"It was one of the initial implementations of new IP technology, which is now called MPLS (multi-protocol label switching)," he explained. "I believed in the future of MPLS technology and insisted upon establishing a company in the United States, not as a Toshiba subsidiary but as a start-up company." Almost no examples exist of start-up companies founded by large Japanese manufacturers, but Toshiba gave Obara

some seed money. He became one of the founders of Ennovate Networks.

Ennovate provides an IP edge service switch, which is located on the edge of a network service provider's network. It is mainly focused on IP-VPN (IP-based virtual private network), which is the next generation of IP network service for corporate users. Obara believes that MPLS will be the key technology of IP-VPN but that the technology will be deployed slowly because MPLS standardization has not been completed by the IETF (Internet Engineering Task Force).

"I have worked for a large corporation in Japan and am working for a start-up in the United States," Obara continued. "Their corporate cultures are quite different, like the North Pole and South Pole. A start-up in the United States takes great risks to achieve the fastest and highest growth possible. A large Japanese corporation strives to minimize risks to have stable growth. People in the United States generally work for several companies, and employment continues as long as both employer and employee view the work as worthwhile. People in Japan, on the other hand, generally work for a single company for their entire lifetimes. A company is seen like a family. There is no choice to switch except in a disastrous situation. Employees in Japan put forth their best effort for the company. In turn, employers try their best to reward the employees. Companies almost never fire their employees. So, there are a lot of differences in business goals, business processes, and people's behavior . . . Japanese companies may be seen as similar to those in the United States a decade ago. But some fundamental differences in the views regarding the relationship between each life and society make Japanese company behavior unique. In general, Japanese companies have been doing poorly recently and cannot keep the lifetime employment system. I believe Japan is gradually following the current U.S. societal practices." ■

# Scott Banister and Jonathan Stark: ACMers reunited at idealab!



Scott Banister

idealab! creates and operates Internet businesses. Founded in Pasadena, Calif., in March 1996 by entrepreneur Bill Gross, idealab! currently has approximately 50 businesses in various states of development. idealab! public companies include GoTo.com, eToys, and NetZero. Scott Banister was personally

recruited by Gross to start a Silicon Valley facility, and Jonathan Stark was Banister's first hire. Banister and Stark became friends in CS, hanging out in the ACM office at the University of Illinois. But the demands of running startups eclipsed class time, and the timing of Internet opportunities in the "real world" made the decision to leave school irresistible. With about a dozen startups between the two of them, during and after Illinois, they are now reunited at idealab!'s Silicon Valley facility in Palo Alto.

Banister is from Independence, Mo., where he spent many late nights logged on with a 2400 baud modem. His first significant encounter with the U of I was using Gopher. When he read about Mosaic in 1993, he decided to enroll as a CS student. "The first day I got there," he said, "I got access to the Engineering Workstation Labs and played with Mosaic for the first time." A few weeks later, he secured a Webmaster job working with Professor Burks Oakley in ECE. He also worked with mathematics professor George Francis on CAVE applications. Banister wasted no time in getting involved with several campus organizations. He was founder and chair of ACM's special interest group devoted to the Web, the Web Monkeys. It was in ACM that he met Stark, who was chairman of SIGArch, the group devoted to computer architecture. (Stark would become ACM chair in 1995.) Banister was also president of the College Libertarians and co-founder of the Campus Atheists & Agnostics.

Banister started no less than three companies while he was a freshman: SponsorNet, the Web's first advertising network and home of the first online auction for Web advertising space; Permalink.com, which aimed to be the first provider of lifetime URLs and among the first providers of lifetime e-mail addresses; and SubmitIt, a marketing tool for Web sites. As each company grew successful, it was increasingly impossible to remain in school, so he decided to do an internship the spring semester of his sophomore year. But with whom? His

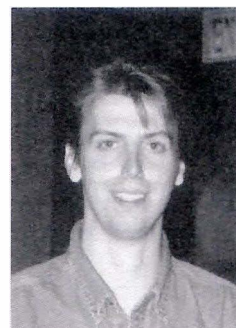
very own company SponsorNet. SponsorNet progressed to the point that it required moving. Banister left the university after only two years and brought his companies to Silicon Valley.

"One of the coolest projects I worked on at SubmitIt," he recalled, "was ListBot, a free email hosting service. Strangely enough, I contracted the product development to Max Levchin and Eric Huss, who were still in Champaign." Levchin, BS 97, and Huss, BS 96, would later join Banister in Silicon Valley, where Levchin would co-found PayPal and Huss would work at idealab! Both SubmitIt and ListBot and another Web service that Banister created called ClickTrade live on as part of MSN LinkExchange. Banister was also involved with Impulse! Buy Network, a company that produced software that allows merchants to make limited-time offers online. The company was acquired by Inktomi.

Banister had known idealab! founder Bill Gross for several years, and the two had fun bouncing ideas around. When Gross asked Banister if he'd open an idealab! in Silicon Valley, Banister said, "Sure!" Banister started the lab with three others, and their first hire was Jonathan Stark.

Stark followed the footsteps of earlier Illini in his family and came to the U of I from Dundee-Crown High School. His father taught computer science at Barrington High School and insisted that Jonathan learn how to program before playing Little Brickout on the family's Apple II.

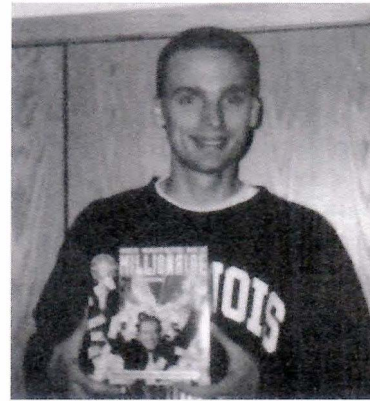
At the U of I, Stark plunged into ACM activities and was there when the group got its first Unix box, an RS6000. One of his first ACM projects was the PowerGlove Serial Interface, SIGArch's "high tech bake sale." With all the elements of a small company, it was a way of making money to fund future projects. The product was a small box that allowed a Nintendo PowerGlove to be plugged into a personal computer, resulting in an inexpensive input device for virtual reality experimentation. Stark was also one of the three founders of *Crossroads*, the international ACM student publication and ACM's first electronic publication. For CS 249, Stark installed a microcontroller on a vintage Dr. Pepper vending machine and hooked it up to the Internet so that students could buy soda by swiping their student ID cards. As an extension of this work, Stark joined



Jonathan Stark



## Tony Zale programs hit game for Jellyvision



Tony Zale holds the box to the *Who Wants to Be a Millionaire* CD-ROM

Tony Zale, BS 99, is a programmer at Jellyvision, a Chicago-based company specializing in interactive media. The company made its breakthrough with a game called *You Don't Know Jack*, an irreverent quiz show trivia game. It was a hit with consumers and won some of the gaming world's most prestigious awards.

Now the company has another hit on its hands. *Who Wants to Be a Millionaire* is based on the popular television show and includes a virtual Regis Philbin. When Zale started, after six short months at Arthur Andersen, he did Java development for the second edition of this game.

Zale explained how Jellyvision works. "There are creative directors who envision what the game can be, and it's the programmer's job to translate that vision into something that works on the screen," he said. Comparing this with what he did in school, Zale said, "In school, you're trying to write a program that computes a result correctly or has the proper use of style. Here the goal is much more undefined. You have to make something feel like a real interaction with a computer. There is no right or wrong, but you need to get the user to the right point."

The future of Web entertainment is poised to explode. "One of the things we're hoping for is that more people get broadband and better Internet access," he said. "We have lots of ideas, but you can only get so much over a 56K modem line. As more people get cable modem and DSL, the things we do on CD ROM now will be done over the Internet."

Zale is now working on a Web-based multiplayer game. Stay tuned! ■

CommerceNet Consortium, a nonprofit coalition of groups interested in Internet commerce. At the time, they were working with smart card technologies, including their use with vending machines. The timing was perfect. Stark packed up for Silicon Valley, where he worked on a variety of projects, including TRUSTe, the online privacy certification program. He eventually became a co-founder of an e-commerce initiative within that company, called CNGroup, which was acquired by CommerceOne. On the side, in 1997, Stark co-founded Emptor, an e-commerce company devoted to blind negotiation between online buyers and sellers. Emptor was renamed Accept.com and later purchased by Amazon.com.

In 1988, Stark branched off again and co-founded SmartCalendar with Luke Nosek, BS 96, who was with Netscape at the time. The idea for the company came from an ACM calendaring project they had done together as students, but after nine months, they both moved on. The company, SmartCalendar, is still thriving with SmartCal, a Web calendaring tool.

In addition to independent consulting, Stark started working on a business plan for an incubator called Silicon Valley Startup. The idea was to structure the company like ACM—with companies, instead of SIGs, united under a central umbrella, and a core group to provide guidance and infrastructure. He showed the plan to Scott Banister, who at the time was with SubmitIt. A couple months later, when Banister started idealab!, then in Sunnyvale, Stark joined him.

Stark is acting manager of the systems group at idealab! "I like to work with small companies and turn them from nothing to something, to be involved with that first layer, to help them prototype their first project. I'm also interested in building systems and setting up colocation facilities for companies," he said.

Banister, as VP of ideas, is on the management side of things, saying that there are already enough good programmers in the world. "I like making leading investments in companies as well as starting new companies from scratch," he said. "Investing in startups has been the most fun thing. Helping people get companies off the ground is a lot of fun."

Both Stark and Banister attribute a great part of their success to their experience with ACM at Illinois. "ACM encourages stuff to happen. People say, 'We want to make this happen,' and everyone starts working on a project," Banister explained, "and then people apply that to their careers. It certainly worked out well for me. You learn more by trying things you want to do, even if they fail, than by doing things you don't want to do." ■

# Michael Reese, tech leader in Atlanta

After two decades with two of the world's most successful companies, Michael Reese was lured out of retirement to become CEO of Third Millennium Communications Inc. (3MC), an Internet consulting firm focusing on e-business. The company is in Atlanta.

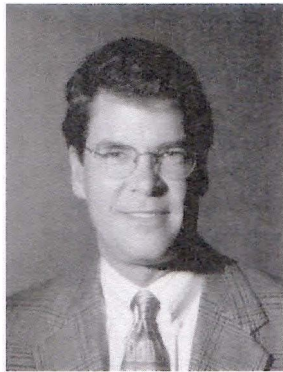
Growing up in Northbrook, Ill., Reese vividly recalls oohing and ahing over a tic-tac-toe-playing computer at the Museum of Science and Industry in Chicago. This led to the construction of his own tic-tac-toe computer for an eighth grade science project, "a horrific and terribly designed and executed computer," according to Reese. "It was a hard-wired, wooden box with no logic, no processor, wires, and lightbulbs. A lousy design, good application. But you couldn't beat it."

As a CS undergrad in engineering, Reese took many electives in the business school to blend deep CS with a basic understanding of business. "This was very countercultural at the time," he remarked. He was president of Delta Tau Delta fraternity in 1976, went to football games, and began his networking career in places like Kam's, Dooley's, and Chances R. When he graduated in 1977, he went to the University of Chicago for an MBA with the desire to apply computers to business problems.

Reese began his professional career with Arthur Andersen's administrative services division. This was to become the company's management information consulting division and eventually became Andersen Consulting. Reese enjoyed a 17-year career at Andersen in a variety of roles, from traditional systems consulting projects to strategy work. In 1983, he moved from Chicago to Atlanta to build their banking practice in the Southeast. In 1988, he became a partner and joined their telecommunications practice. By the time he left for IBM in 1994, he was a global managing partner at Andersen.

Staying in Atlanta was attractive. In addition to having a good climate, the city had been ranked as one of the top five in the country to start a business, it was the top high-tech job growth city, it had a great technical community, and it was an affordable place to live. Lou Gerstner had just become IBM's president, CEO, and chairman, and the company had restructured around industries. Reese joined telecom, and when he retired in 1999, he was general manager of global telecommunications.

Reese has been a active member of Atlanta's tech



Michael Reese

community for more than a decade. He chairs the 6,000-member Technical Association of Georgia and is a leader at the Atlanta Chamber of Commerce. Professionally, in addition to his regular work, co-founded a business that was later sold to iXL. Reese is also an angel investor. One of his investments in 1996 was a local Internet consulting startup called Third Millennium Communications. Its chairman, Gerald Eickhoff, had been trying to recruit Reese for years. So after being an investor and a board member, the newly retired Reese took over as CEO in 2000.

"I knew Jerry for years, and I wanted to work with him," Reese explained. "I felt he was going to really make things happen." Reese attracted some of his friends and former colleagues at IBM and Andersen and others he had worked with in Atlanta over the years. He was highlighted in a March 30, 2000, *Wall Street Journal* article on the "pied piper effect," in which Eickhoff is quoted as saying that Reese had "Pied Piper-type skills." Commenting on the article, Reese said, "The truth about the job market is people connecting with other people. In our fluid job market, people form relationships with their coworkers as much as with their companies. We see the same teams reconfiguring at different companies. The company is no longer the primary unit of what you do. Your skills, your teammates, and the project you're working on is much more defining of who you are."

Reese found no trouble adjusting from a large corporate environment to a smaller one. "In a lot of ways, they're different," he said. "But they're also very much the same. In the end, your reach is your team. You can only connect with so many people inside or outside of your company until you reach personal networking capacity. So 3MC doesn't feel small to me in terms of the human networking aspect. The additional benefit in being in a small business is that we can make a decision and then do it. The colors are much more vibrant in a small company. In a large company, everything is more gray."

Reese has also found that he's doing the same thing he's always been doing. "The primary question we ask now is," he said, "'How can the Internet help a company build a better business?' It's not that much different than, 'How can a computer help me play tic-tac-toe?' The fundamental questions are still the same. 'What can I do with technology, and how can it work for me?' In truth, that's what we did at Andersen and IBM, too."

Reese and his wife Sher, BS BusAdmin 77, have three children. In addition to exercising regularly, he plays on a "pitiful tennis team" in the Atlanta Lawn Tennis Association. ■



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# Tic-Tac-ILLIAC-Toe

The first person to write a tic-tac-toe program on the ILLIAC was Joe Wier, PhD 56. Gernot Metze, MS 55, PhD 58, recalls that Wier's program was not a man versus machine program. Rather, the program was given the rules of the game, including a definition for what constituted a win and a loss, but no strategy of play. It then played against itself to "learn" a strategy of winning from the history of games it had played. "The story, based on hearsay and most likely only partly true," said Metze, "was that after the program ran over a weekend, Joe discovered that ILLIAC had settled on repeating the same draw game over and over as this was the best it could do."

"I wrote a program," said Wier, "which attempted to build a table which would give advice on the next move to play in a tic-tac-toe game. I attempted this by having the machine play itself, using the partially completed table on both sides of the board. After playing such a set of games, it was obvious that the table was not converging as both sides were using very poor information at the start to guide their games. Part of this was that 'unmade' moves were preferred. This wasted a lot of time on games, which were played badly and ended with meaningless draws. It also showed that the design of the ILLIAC was such that the program I was working on was done inefficiently (bit-picking was not its strong suit). This exercise led to a design of a machine which was aimed at handling nonnumeric information, the subject of my thesis work."

Metze, on the other hand, did write a man versus machine version for an Engineering Open House demo, which was used starting around 1955. "What was interesting to me," he said, "and the excuse I gave to myself for writing the program, was of course that ILLIAC had neither graphical output nor keyboard input, so how do you play tic-tac-toe with ILLIAC? Well, ILLIAC had a small monitor that showed any one of the 40 bit-positions for the 1024-word memory in a 32-by-32 array of 0s and 1s, so by carefully setting those bits in all 1024 words, one could display the tic-tac-toe grid and the Xs and Os. For input, I used the so-called 'black' and 'white' switches which controlled conditional program jumps. (ILLIAC had only one other switch input, the 'red' switch, which was not useful for this purpose.)

The program logic wasn't particularly clever but would win or at least draw if the player started. If it was allowed to start, it would select a corner or the center most of the time so it could at least draw, but would select the middle of a side a small percentage of the time so an observant player could beat it. What was fascinating to me was that the first version of the game wasn't a huge success with the EOH visitors because the program

displayed the player's chosen move and 'immediately' (even at the computer speed of those days) displayed the machine's answer. So I put in a several-seconds delay during which the machine made noises before it recorded its move. Much better. Now the machine was evidently 'thinking' before it made its move." Metze went on to write a 3D, 4-by-4-by-4-by-4 tic-tac-toe program for the ILLIAC II. "I'm not sure I want to be remembered for writing tic-tac-toe programs," he said, "but that's the way it goes."

Martin Minow, BS LAS 62, MA Linguistics, who took a programming course offered on ILLIAC in 1962, remembers the ILLIAC as cheating at tic-tac-toe. "It recognized a special sequence that would seem to cause it to lose. Then it would 'revise' the game board at the last minute," he said. ■

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## *PayPal*, continued from p. 8

Simmons, BS 98, and Yu Pan, BS 98. Eric Huss, who had worked with Levchin at NetMeridian, consulted with the group early on. Nosek became the business alter ego for the technical people, and Thiel decided to become a co-founder rather than simply an investor. The company launched with six people, four of whom were from Illinois, and the trend of hiring Illinois talent has continued. As the person-to-person payment system became the main focus of the company, and with no time to waste, Master-McNeal was hired to come up with the brilliant name PayPal.

PayPal was not the only company working in the area of person-to-person payments. X.com was their biggest competitor. The two had battled to a stalemate, so to eliminate competition and to consolidate the market, the companies merged in March 2000. Levchin described it as a "nice merge" because the cultures were so similar. The company retained the X.com name, but the payment system is still called PayPal.

Levchin is now chief technical officer of X.com and is in charge of all the R & D and strategic technological decisions. He codes a lot less than he used to but continues to be a "late hours guy," something he attributed to his "ACM blood." Nosek is VP of strategy for X.com and has also continued working "insane hours." His future plans include trying to figure out a way to take the University of Illinois public, "with an IPO and everything." Reflecting back on their journey from Illinois to where they are now, both Levchin and Nosek cited their heavy involvement with ACM as instrumental to their success. ■

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## Student spotlight

Ibrahim Merchant, undergraduate in CS, and Pavan Tumati, computer engineering undergraduate, received Honorable Mention in IEEE Computer Society's International Design Competition. Their project, Embedic, is a portable system that automatically diagnoses a set of illnesses. Using a camera and thermometer with an embedded device, the application diagnoses malaria, impetigo, or measles. "We use image processing and artificial intelligence to diagnose a set of diseases that are prevalent in Third World countries," said Merchant. The 50 participating teams were given hardware and software kits to complete their projects.

CS undergraduate Andrew Wu won first place in Original Undergraduate Research for his EOH 2000 project called Project Earthlight, an interactive 3D game that explored topics in computer vision and graphics. Wielding a real-life, tangible lightsaber, the person virtually controls a digital hero's actions while a Web cam records the person's motion. The project demonstrated the feasibility of low-end Web cams for 3D gesture interface using a physical control device for 4 DOF. Wu was the author of a paper, presented at the IEEE International Conference on Automatic Face and Gesture Recognition held March 2000 in Grenoble, France, on research he did on a virtual 3D blackboard during an NSF summer program. Wu won the prestigious College of Engineering Honeywell Award in spring 2000 in recognition of distinguished individual performance and leadership by a junior, and last summer he was an Extreme Blue intern at IBM.

CS undergraduate Theckla Louchios received an Honorable Mention from the Computer Research Association

Outstanding Undergraduate Awards 2000 for her computing research potential. She has interned for two summers at General Electric in their Medical Systems unit and has been a TA for CS 100. During her freshman year, she worked on a project to design a phone for those with limited hand dexterity. Last year she was the leader of a project to design a device that automated a home telephone switching system. Both projects were entered into the Society of Women Engineer's Technical Programs Team national competition and chosen for the finals. The cellular phone design project won second in the nation.

Cedric Yau, BS 99, MCS 00, Misha Voloshin, BS 00, and Nathan Brochmann, BS Fin 97, won second prize in the first V. Dale Cozad Business Plan Competition on December 6, 2000. The competition, named in honor of the late founder of Cozad Asset Management, in Champaign, was hosted by the new Technology Entrepreneur Center at the university and was sponsored by local entrepreneur Peter Fox and his wife, Kim. Thirty-eight teams, each starting with its own technology invention, submitted a business plan for commercialization. Five finalists presented their plans to a panel of VCs and financiers, and winners were chosen to receive cash awards. Yau and Voloshin are now graduate students. Their company, Alobe, Inc., is an Internet startup.

CS graduate students on the Incomplete List of Teachers Ranked as Excellent for spring 2000 were M. Anand, Alan Beckman, Andrew Cushing, Anthony Hursh, Adam Laud, Kiwal Lee, Ekta Manaktala, Rajkumar Mohanram, J. Su, and Cedric Yau. Cushing, Hursh, Su, and Lee received outstanding ratings. ■

## Thank you to our donors

The following people have made financial gifts supporting the work of the Department of Computer Science during the period from May 1, 1998, to August 31, 2000. Their quiet generosity each year makes a difference in the field of computer science. Those people designated by an \* are members of the Presidents Council and have fulfilled a \$15,000 commitment directed to the Department of Computer Science. On behalf of the department, we renew our pledge to use these gifts wisely. On behalf of our current and future students, we thank these donors for their support.

The funding priority of the department continues to concentrate on support for people—specifically, fellowships for graduate students and professorships and chairs for faculty members. We have also put your money to work by helping fund our Distinguished Lecturer Series and keeping our instructional laboratories up to date.



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## Faculty notes

**C. L. Dave Liu**, professor emeritus, received Taiwan's highest academic honor, membership in Academia Sinica. Liu became president of National Tsing Hua University after his retirement from the CS department in 1997.

**Michael Heath** became an ACM Fellow in 2000, and **David Padua** became an IEEE Fellow in 2000.

**Dan Reed** was named director of the National Computational Science Alliance in March 2000 and director of the National Center for Supercomputing Applications in September 2000. Reed was also the recipient of the prestigious Gutzwiller Professorship, an endowed position at the Urbana campus.

**Denny Mickunas** assumed the position of associate head of the department on November 29, 2000, taking over for Bill Kubitz, who retired August 31, 2000. Kubitz will continue working on Siebel Center, Internet course delivery, and alumni relations.

**Gul Agha** received the Meritorious Service Award from the IEEE Computer Society in recognition of his "outstanding service as Editor-in-Chief of *IEEE Concurrency* between 1995 and 1998." He was also named a Golden Core Member by the IEEE Computer Society. The lifetime honor is in recognition of leadership and services to the IEEE Computer Society. Agha has been appointed Editor-in-Chief of *ACM Computing Surveys*, and he received a grant from DARPA to research building formal models of the behavior of large-scale agent systems.

**Vikram Adve** received funding from the NSF Operating Systems and Compilers program for a 3-year project with Rajive Bagrodia of

UCLA to explore how compiler techniques can be used to improve the efficiency of simulation techniques for message-passing parallel and distributed programs. Adve also received funding from the NSF Next Generation Software program for a one-year project on using performance models to control the run-time behavior of an adaptive distributed program.

**Lenny Pitt** was funded for three years for his project "Collaborative Research: Data Mining, Theory and Algorithms" in collaboration with H. V. Jagadish from the University of Michigan.

**Josep Torrellas, Dan Reed** and **David Padua** were funded for five years for their project "Experimental Partnership—FlexRAM: An Advanced Intelligent Memory System."

NSF awarded **Klara Nahrstedt** two grants for quality of service research. Her projects, "A QoS Mapping Framework: QoS Talk" and "High Performance QoS Routing," will each be funded for three years.

CS faculty members on the Incomplete List of Teachers Ranked as Excellent for spring 2000 were **Sarita Adve, Michael Garland, Michael Heath, Chad Peiper, Bill Pottenger, Lui Sha,** and **Shang-Hua Teng**. Sha received outstanding ratings. Teng is on leave at Akamai. Peiper also made the summer 2000 list.

**Sam Kamin** received three years of funding from NSF for his proposal "Technologies for Lightweight, Generative, Binary Software Components."

Several faculty members were notified of their NSF Information Technology Research (ITR) awards. Three-year funding went to **Robin Kravets** for "Environment-Aware Communication for Mobile Grouped

Devices," **David Padua**, Samuel Midkiff, MS 86, PhD 92 (IBM Research), and Jaejiu Lee, PhD 99 (Michigan State) for "An Optimizing Compiler for Languages with Programmable Memory Models." **Josep Torrellas** and **David Padua** for "Intelligent Memory Architectures and Algorithms to Crack the Protein Folding Problem." A five-year award went to **Roy Campbell** for "Active Information Spaces Based on Ubiquitous Computing." **Michael Garland, Klara Nahrstedt, Robin Kravets, David Kreigman, Denny Mickunas,** and **Dan Reed** are also part of the project.

**Denny Mickunas, Jean Ponce, Uday Reddy,** and **Paul Saylor** made the Engineering Council's outstanding adviser list, an award for excellence in advising.

**Chad Peiper**, visiting lecturer, received the Advanced Graduate Teacher Certificate for having achieved an advanced level of teaching and for exceptional contributions in classroom teaching, inquiry into teaching, and service related to teaching. He also won the department's Outstanding Teaching Assistant Award in spring and summer 2000.

**Jason Zych**, visiting lecturer, received the College of Engineering Scott Rose Award for Teaching Excellence for his undergraduate teaching. Zych teaches two of the most important core courses in the curriculum: introduction to programming for majors and data structures (CS 125 and 225).

**Josep Torrellas** won one of six Xerox Awards for Faculty Research in spring 2000 for the best research conducted during the past five years as judged by his colleagues.

**Marianne Winslett** retired and is now adjunct professor. ■



# Department awards

More than 100 people attended the department's Celebration of Achievement Awards and Recognition Banquet at the Grainger Engineering Library on April 6, 2000. Professors Dan Reed, department head, and Lenny Pitt, chair of the awards committee, presided. Professor Mehdi Harandi, director of graduate programs, and Professor Samuel Kamin, director of undergraduate programs, led the awards presentations.

*C. W. Gear Junior Faculty Award*

Dan Roth

*C. W. Gear Graduate Student Award*

Tanya Berger-Wolf

*C. W. Gear Undergraduate Award*

Jason D. Shah, An Thi-Nguyen Le

*CRA Outstanding Undergraduate*

Theckla Louchios

*Bronze Tablet*

Matthew J. Bricton, Scott P. Crofts,

Alex Kaluzny, Jesse P. Scaria, Jason

D. Shah

*David J. Kuck Thesis Awards*

MS: Gang Zou

PhD: Ari Trachtenberg

*C. L. and Jane W-S. Liu Award*

Dongyan Xu

*Duncan H. Lawrie Award*

Noura Sharabash

*4.0 Seniors*

Matthew Bricton, John Chuang,

Stephen Schrock

*Honeywell Award*

Andrew Y. Wu

*John R. Pasta Awards*

Matthew Wright, Yi-Yun Qian

*James N. Snyder Awards*

Jeffrey Stollver, Mark Hoemmen

*Knight of St. Pat*

Jill Magsam

*Outstanding Teaching Assistant*

Chad Peiper

*W. J. Poppelbaum Memorial Award*

Raghupathy Sivakumar

*Ray Ozzie Fellowships*

Pengyu Hong, Prasun Sinha

*Raytheon Fellowship*

Kiran Lakkaraju

*Altera Scholarships*

Steve Schrock, Jawed Karim

*Crowe Chizek Scholarship*

Razvan Mathias

*Daniel L. Slotnick Scholarship*

Albert Chu

*Dunn Systems Scholarship*

Timothy Hinrichs

*Franz Holm and J. P. Nash Scholarship*

Galina Pushkareva

*Inforte Scholarship*

John "Will" Musgrove

*Microsoft National Female Tech. Award*

Sabrina Merchant

*Mavis Memorial Award*

Tanya Berger-Wolf, Katherine Connelly

*Sara and Louis Cohen Scholarships*

Pedro DeRose, Ricardo Lachman

*Spyglass Scholarships*

Sara Ashraf, Erica Fierro, Jennifer

Gloekner, Veronica Horvath, Sara

Lawson, Elizabeth Lin, Shannon

Melfi, Yi-Yun Qian

*3M Undergraduate Scholarship*

Michael Resnick

*Warren William Young Scholarship*

Nathan VanderKraats

*William and Ruth Witt Scholarships*

Brooke Herman, Jennifer Yam ■



Timothy Hinrichs and Bill Dunn, who presented Hinrichs with the Dunn Systems Scholarship.



Albert Chu, winner of the Daniel L. Slotnick Scholarship, with Joan Slotnick.



Ira Cohen and Debra Jo Cohen presented the Cohen and the Witt scholarships.

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# Classnotes

**Bill Wulf**, BS 61, MS 63, was elected president of the National Academy of Engineering on April 15, 1999. Wulf is AT&T Professor of Computer Science at the University of Virginia, Charlottesville. Wulf helped program the ILLIAC while he was at Illinois and earned Virginia's first PhD in CS in 1968. Before returning to Virginia as a faculty member, he was on the faculty at CMU and founded Tartan Laboratories, a developer of optimizing compilers.

**Fontaine Richardson**, PhD 68, was elected chairman of the board of directors for Mentor Graphics, in Wilsonville, Ore. Richardson is a general partner with Eastech III and VP of Eastech Management Co. (affiliated private venture capital firms). Before joining Eastech, Richardson co-founded Applicon, one of the earliest companies in the EDA industry.

**Michael Hart**, BA IPS 73, is still hard at work on Project Gutenberg, an attempt to offer 10,000 downloadable volumes of text by 2001. At present, 2,500 volumes of literary classics are available at [www.gutenberg.net](http://www.gutenberg.net). He began his effort in 1971 with \$100,000 worth of free computer time on the U of I's Xerox Sigma V mainframe in the Materials Research Lab.

**Stu Schuster**, PhD 73, is a venture partner at Brentwood Venture Capital, a leading early-stage firm based in Menlo Park, Calif. He was recently named to the board of directors of MarketMakers and of ShortCycles. Before joining Brentwood in 1995, Schuster was executive VP of marketing at Sybase. He is on the College of Engineering's Advisory Board.

**Rick Schell**, BA Math 72, MS 77, PhD 79, founded iSharp in 1999 after serving as senior VP at Netscape

from 1994-98. iSharp is a management services provider based in San Mateo, Calif. He has been VP of engineering at Central Point Software (now part of Symantec) and VP of the languages and database business for Borland International and has held a variety of positions at Sun Micro-systems and Intel Corp. He is also on the board of directors of McAfee.com, a subsidiary of Network Associates.

**Samuel P. Chan**, BS 73, is owner of TradeEasy USA and a partner in TradeEasy.com, a Cayman Islands holding company. Before TradeEasy, Chan was a programmer for Official Airline Guide and a software consultant with CGI. TradeEasy was started in 1993 to provide FAX-on-demand. Today it facilitates imports and exports of goods via the Internet, servicing B2B and consumer product importers in the United States and exporters in China. TradeEasy USA is based in Monterey Park, Calif.

**Linda A. Mills**, MS 73, is VP of information systems and processes for TRW Systems & Information Technology Group in Reston, Va. She joined TRW in 1979 and served as VP for the company's global year 2000 program.

**Alan Bernstein**, BS 74, is senior VP of global alliances and global practices for Netigy, an architect of e-business-ready networks based in San Jose, Calif. Bernstein joined Netigy from EDS. He has held positions at MIC/Systemhouse and was one of the founding partners of The Information Consulting Group, a systems integration firm.

**Linda Petzold**, BS 74, PhD 78, is vice president-at-large of the Society for Industrial and Applied Mathematics (SIAM). She is also a professor at UC-Santa Barbara and director of the computational science and engineering program.

**Bill Tao**, MS 74, is VP of engineering at Sirocco Systems, an optical networking startup in Wallingford, Conn. Before joining Sirocco in 1999, he was VP of engineering at InfoLibria, an Internet infrastructure provider, and VP of engineering at NetEdge Systems, where he managed high-performance ATM edge access systems.

**Benn Schreiber**, BS 75, is VP of engineering at PulsePoint Communications (acquired by Unisys), a developer of carrier-class enhanced services solutions for the communications industry in Carpinteria, Calif. He came to PulsePoint after a long career at Digital Equipment Corp., where he most recently he was director of Windows NT system software.

**Tom Siebel**, BA History 75, MBA 83, MS 85, established the Siebel Classic, a senior PGA tour golf tournament in Silicon Valley in June 2000. Proceeds from the tournament, which is played at Coyote Creek, will benefit The Sharks Foundation and the Children's Scholarship Fund.

**Tom Manteuffel**, MS 75, PhD 75, will become president of the Society for Industrial and Applied Mathematics (SIAM) in January 2001. He was recently editor-in-chief of *SIAM Journal on Numerical Analysis* and is a faculty member in the applied mathematics department at the University of Colorado at Boulder.

**Mark Anastas**, BS 77, is co-founder and COO of Webridge, based in Beaverton, Ore., which develops and implements private exchanges. Before that, he was president of Huzley, a start-up client/server applications company. He was also product line architect for Intel's Internet Product Division and was an early employee of Sequent Computer Systems.



**Brad Boston**, BS 77, is executive VP of operations at Corio, an application service provider based in San Carlos, Calif. Before joining Corio, he was president of the Sabre Group's outsourcing and software solutions unit. He also serves on the board of directors for Travelocity.com and on the boards of advisors for BMC Software, Compaq, AT&T, and NCR.

**Tim Halvorsen**, BS 77, one of the creators of Lotus Notes, is CTO of Iris Associates, which develops Notes/Domino. He was recently appointed to the advisory board of IT FACTORY, a supplier of collaborative e-business solutions in Cambridge, Mass. Before co-founding Iris with CS alumni Ray Ozzie and Len Kawell, he was at Digital Equipment Corp.

**Len Kawell**, BS 77, co-creator of Lotus Notes, is founder, president, and chairman of Glassbook, Inc., a

company that builds high-fidelity e-book reading software. The company, started in 1998, was acquired by Adobe in August 2000 and is located in Waltham, Mass. Kawell helped write Notes at Iris Associates, where he was VP for 13 years. Before that, he was with Digital Equipment Corp.

**Mory Bahar**, MS 77, is president and CEO of apps4biz.com, a provider of Internet-based, industry-specific business applications for small businesses based in Andover, Mass. He is also author of the book *Object Technology Made Simple* (Simple Software Publishing, 1996).

**Steven Vetter**, BS 78, MS 80, is co-founder, president, and CEO of Molecular Manufacturing Enterprises Inc., a St. Paul, Minn., company involved in molecular nanotechnology. He is also co-founder and president of Angstrom Tools, Ltd., and president of Computer Solutions Integrators and Products, a consulting company specializing in building custom test systems for biomedical devices. Vetter is a senior advisor of the Space Studies Institute and senior associate of the Institute for Molecular Manufacturing and the Foresight Institute. He also organizes the Minnesota Nanotechnology Study group.

**Peter Mastro**, BS 79, TDMA strategic team leader at Lucent Technologies, is responsible for planning and delivery of its time division multiple access wireless network products and system features.

**Ray Ozzie**, BS 79, creator of Lotus Notes, is founder of Groove Networks in Beverly, Mass. Groove offers revolutionary peer-to-peer collaborative software. After three years in stealth mode, the company released its first product in October 2000.

**Cyrus Azar**, BS 80, is co-founder of Full House Control, a home automation company in Ann Arbor, Mich., and co-founder of Symplex Communications, a data compression company in Whitmore Lake, Mich. He is also a bass player for Black Forest, a rock band from Spokane, Wash.

**Won Kim**, PhD 80, founder and CEO of Cyber Database Solutions in Austin, Tex., was named to the technical advisory board of Interactive Silicon. Cyber Database Solutions is a consulting and systems integration service provider linking U.S. and Pacific-Asia corporations engaged in information technology. Previously, he founded and managed UniSQL as chairman and CEO for six years. There, he created the first commercial object-relational database server. He is chairman of ACM SIGKDD (data and data mining) and is editor-in-chief of *ACM Transactions on Database Systems* and *ACM Transactions on Internet Technology*.

**Mark Bernett**, BS 82, was married in January 2000 to Andrea Anderson. He is senior project manager at IBM in Austin, Tex.

**Chip Quade**, BS 82, has been working for University of Wisconsin, Madison, since 1989. After a seven years in health services research, he returned to software engineering and builds Web applications for the graduate school.

**Chan Chiu**, BS 83, is founder and CTO of AboveTrade, a provider of online investment advice technology, based in San Mateo, Calif. Before starting AboveTrade, he was U.S. development manager for Sina.com, the world's most trafficked Chinese-language Web site. He co-founded Pictra, one of the first companies to create an e-photo commerce Web application (sold to Fuji).

## In memorium

**Gregory E. Stillman**, MS 65, PhD 67, died on July 30, 1999. He had been an ECE professor at U of I since 1975 and the first director of the NSF's Engineering Research Center for Compound Semiconductor Microelectronics on campus, considered the top university lab for III-V compound semiconductor research.

**Robert J. Benza**, BS 99, died following an airplane crash in Vermillion County, Ill., on December 9, 1999. Benza, who was a passenger, had been a flight instructor at the U of I's Institute of Aviation and worked as a mechanic at Flightstar. ■

**Greg Eisenhauer**, BS 83, MS 85, is a research scientist in the College of Computing at Georgia Tech. He and his wife, Peggy, an attorney, had a son Stephen in July 2000, who joins brother Daniel. He is an avid diver and spends several weeks each year in the Caribbean. He completed his PhD at Georgia Tech in 1998 and conducts research on parallel and distributed programming tools, program monitoring and steering systems, and high-performance event middleware.

**Jeffrey Huppertz**, BS 83, is VP of marketing at ClearBand, a video-to-PC company based in Chicago. Before that, he was director of business development and strategy for Motorola's broadband communications sector.

**Raymond J. Mooney**, BS 83, MS 85, PhD 88, is associate professor of computer science at UT-Austin where he leads the machine learning research group. He also has a part-time affiliation with Whizbang! Labs, an Internet startup company that uses machine learning to develop systems for extracting and integrating information on the Web.

**Mark Tebbe**, BS 83, stepped down as president of Lante, a Chicago-based Internet consulting firm, and is now chairman of the board. Founded by Tebbe in 1984, Lante went public in February 2000.

**David Kilgore**, BS 84, is global head for the convertible bond product at Barclays Capital, Chicago. Before that, he was with Citadel Investment Group and IBM. At IBM, he was global brand manager for the visualization data explorer products.

**Charley Kline**, BS 84, MS 86, principal research programmer for U of I's Computing and Communications Services Office, was the recipient of the university's Chancellor's Aca-

demic Professional Excellence Award in March 2000. Charley is architect of the campus network, UIUCnet, which provides connectivity to 290 campus-related buildings, with 370 individual networks for 45,000 machines.

**Michael E. Young**, BS 84, is an assistant professor of psychology at SIU-Carbondale. He and his wife, Carolyn Noble Young, a biology grad (BS 84, MS 86), and their three children live in Herrin, Ill.

**Eric M. Johnson**, MCS 84, and his wife, Katherine, established the W. Hilton Johnson Professorship in Geology at the U of I, in honor of his father, an alum and longtime teacher in the geology department. Eric Johnson is a software engineer with Nortel Networks in Santa Clara, Calif.

**Michael J. O'Hara**, MCS 84, is VP of product strategy for NetCurrents, an Internet intelligence agency that analyzes communications from targeted Internet locations in real time. O'Hara is a long-time executive at Hughes Information Technology Systems and Hughes Space Communications. Most recently, he was senior VP of business development at eSat, a broadband ISP.

**Tom Deeke**, BS 85, and his wife, PattiLu, adopted two boys from India, Joshua Prasad and Caleb Abishek. They arrived in November 1999 and joined sister Miriam Nitya at their home in St. Louis, Mo. Tom is project manager at Raytheon.

**Roger G. Douglas**, BS 85, is VP of professional services at Mediaplex, an e-business marketing and technology company based in San Francisco. Before that, he was VP at Cambridge Technology Partners.

**Ken Gaebler**, BS 85, was co-founder, director, and COO for Chicago-based

BeautyJungle.com, a provider of e-commerce services for beauty products that recently closed its doors. He was co-founder of VREAM, Inc., a developer of 3D data visualization products, and served as a management consultant at McKinsey & Co.

**Todd A Livingston**, BS 85, principal at Crowe Chizek in Cleveland, heads their systems integration practice.

**Dan Sanders**, BS 85, JD 94, is the attorney who represented Anthony Porter, a death row inmate whose case was "adopted" by a Northwestern University journalism class. Sanders had gotten Porter's execution delayed, which gave the journalism class time to prove his innocence. After all this, Porter turned his legal affairs over to Johnnie Cochran, of O. J. Simpson Dream Team fame.

**Peter Tannenwald**, BS 85, recently left flooz.com where he was VP of strategic solutions. Before that, he was director of consulting at Dunn Systems. In summer 2000, he and his wife, Felice Bernstein, traveled to China to adopt a baby girl, Skylar. They live in New York.

**Mark Tuomenoksa**, MS 85, founded OpenReach, the first network service provider to deliver managed VPN services over the Web that work with any combination of Internet access technologies and network equipment. The company, founded in 1999, is in Boston. Before that, he was CTO and VP of marketing for Shiva, a VPM software company that merged with Intel while he was there. He was also a VP at Lucent, where he developed advanced voice and data services.

**Wu-Tung Cheng**, PhD 85, was appointed an IEEE Fellow for advances in technologies within the area of design-for-test. Cheng is chief scientist and system-on-chip test



business unit manager for Mentor Graphics, in Wilsonville, Ore. Cheng was selected for his contributions in the area of automatic test-pattern generation and fault simulation for digital circuits. In 1990, Cheng co-founded CheckLogic Systems. Product success resulted in a merger with Mentor Graphics in 1993.

**Pankaj Jalote**, PhD 85, is professor and chairman of the Department of Computer Science at ITT-Kanpur, India. Before that, he was assistant professor at the University of Maryland. From 1996–98, he was VP of quality at Infosys Technologies, Inc., an IT consulting company. He is author of several books on software engineering, including *CMM in Practice*, published by Addison-Wesley in 1999.

**Larry Jones**, CS professor 1986–92, is VP of engineering for Cadabra Design Automation, a provider of automated layout creation tools in San Jose, Calif. Before that, he held senior management positions at Motorola.

**Ed Boon**, BS 86, co-creator of Mortal Kombat, finished his first non-MK game in eight years. The game, called The Grid, is a combination QUAKE-style and fighting game. He still enjoys creating games and programming at Midway Games in Chicago.

**Seth Dietz**, BS 86, and his wife Emily had their first child, Hannah Marie, in October 1999. Dietz is a systems engineer for EDS in Hollywood, Fla.

**Lawrence B. Holder**, BS 86, MS 88, PhD 90, is associate professor and associate chair of computer science and engineering at UT-Arlington. His research is in artificial intelligence and machine learning. He is faculty advisor to the local student branch of ACM and IEEE.

**Paul A. Travis**, BS 86, culminated a decade of software engineering positions with a stint at Microsoft, where he was on the Windows 3.0 team. He then jumped the proverbial fence to focus on the marketing and branding of software products and Internet services. Most recently, he was VP of marketing for Net Nanny Software and is now consulting to select Seattle startups. Travis and wife, Nancy, and their two young children live on Bainbridge Island, just west of Seattle.

**Mark Klein**, MS 86, PhD 89, a principal research scientist in the Center for Coordination Science at MIT, is developing technology that supports more effective coordination among humans and computer-based agents. Before that he worked at the Hitachi Advanced Research Lab in Japan, Boeing Computer Services, and the Applied Research Lab at Penn State. His interests include international travel, Buddhism, and Tai Chi. He lives with his wife and daughter in Norwood, Mass.

**John T. Bradford**, BS 87, won top prize for his presentation titled *Java meets database technology* at the 6th Annual International Oracle Users Group Americas conference in April 1999. Bradford works for Greenbrier and Russel as a senior database administrator.

**Eng-Kiat Koh**, BS 87, MS 88, is founder and VP of product development for Private Express, a digital courier service headquartered in San Mateo, Calif. Before that, he was multimedia program manager at Singapore's Information Technology Institute.

**Gary Mills**, BS 87, is VP of marketing for the hedge fund and family wealth business unit of SS&C Technologies, in Winsor, Conn. Mills had been working for Shepro Braun, which

was acquired by SS&C in 1997. Before that he was with Coopers & Lybrand.

**John R. Oltman**, BS 87, is chairman of the board of XOR (formerly Hollyer & Schwartz), an e-business consulting firm in Chicago. He is former chairman and CEO of SHL Systemhouse and before that was a managing partner at Andersen Consulting.

**Neil Verplank**, BS 87, is founder of Dovetail, a small, Chicago-based technology and strategic consulting firm. He has traveled extensively, designs and builds custom furniture and acoustic classical guitars, and has held a variety of positions, including operator at Purdue's nuclear accelerator, advertising executive and copywriter, CEO of an Internet startup, and fledgling actor.

**Daniel B. Bernstein**, MCS 87, is professor of computer science at UI-Chicago. In June 1999, the U.S. Department of Justice asked an appeals court to reconsider a ruling that struck down export limits on computer data scrambling technologies, according to a Reuters report. The department asked a panel to rehear a decision that said the export limits violated the Bernstein's free speech rights. Bernstein wanted to post the source code for "Snuffle," his encryption software program, on the Internet. In a 2–1 decision, the panel ruled that the source code was a form of speech protected by the first amendment of the Constitution.

**John K. Estell**, MS 87, PhD 91, was married to Melinda Geithmann in July 1999. He is associate professor of computer science at Bluffton College in Bluffton, Ohio and serves on the board of directors for the Computers in Education Division of the American Society for Engineering Education. He is chair of the Western Lake Erie Group of the Sierra Club.

**Frank Lopez**, MS 87, is founder of Online Planet, a Palo Alto, Calif., maker of personal finance software that enables consumers to accurately compare, select, and use long distance services. Lopez was previously at NASA's Johnson Space Center.

**John Hegarty**, BS 88, MS 91, married Hope Bradley in June 1999. He is a lead software engineer at NovaNET, in Champaign, Ill.

**Shigeki Makino**, BS 88, is managing director and senior portfolio manager for the global core equities units at Putnam Investments in Boston, Mass. Makino came to Putnam from Fidelity Management and Research, where he served for the last two years as director of the London-based European equities research group.

**Rose Marshack**, BS 88, bassist for the rock group Poster Children, husband Rick Valentin, and other members of the group were featured in the June issue of *Wired*. They are working on a film about their travels.

**William Pittges**, BS 88, is VP of product development for OTelNet, a software infrastructure company involved with mobile Internet and next-generation network services. The company is based in Berkeley, Calif. Before that he was a senior manager at Andersen Consulting.

**Sandra Dee Ruth-Diesen**, BS 88, and her husband Kevin Diesen, BS ME 88, had a girl, Brieta Ruth, in April 2000. She is a programmer with Parker-Hannifin in Huntsville, Ala.

**David Marcovitz**, MS 88, coordinator of educational technology for the education department at Loyola College in Maryland, participated in the International Society for Technology in Education, National Forum on Educational Technology Standards for Teachers, in Washington, D.C., in

December 1999. Wife Emily has an MA 92 in art education.

**Naomi Abe Voegtli**, MS Math 88, MS 91, is an attorney at Hogan & Hartson, L.L.P., in Washington, D.C., where she specializes in software patent prosecution and litigation. After graduating from the U of I and before attending Harvard Law School, she worked at Nippon Motorola and Eastman Chemical Co. She and husband Leo Voegtli, MS 88 and PhD ChemE 89, have one daughter, Katie, and a dog, Hana-chan.

**Edward Gornish**, MS 89, PhD 95, was married to Naomi Mitchell in May 1999. He is a software design engineering with Hewlett Packard in Cupertino, Calif.

**Robert M. Frank**, BS 90, was married in March 1999 to Lynn Mohler. He is a computer engineer for Apple.

In March 2000, **Susan Nagel**, BS 90, and husband Robert Nagel, BA Econ 89, had a daughter, Mackenzie Elizabeth, who joins sister Kelsey Lauren. Formerly with Hewitt Associates, Susan Nagel is at home with the children in Cary, Ill.

**Eric Sink**, BS 90, is founder of SourceGear, a software development company in Champaign devoted to Internet collaboration tools. He previously worked for Spyglass as project lead for its browser team.

**Panos Kougiouris**, MS 91, is chief engineer at Healtheon/WebMD Corp. Before that, he held positions at Oracle and Sun.

In 1999, **Scott Corley**, BS 92, founded Red Mercury, a developer of Web-based, network-based, Palm Pilot, and Handspring Visor games. The company's new game for the Palm OS, Puppyshu, is due out by Christmas 2000. Previously he was VP of

software development at High Voltage Software. He and his wife, Melissa, live in Chicago.

**Sean Parham**, BS 92, is director and general manager of Motorola's Internet Products Operation. Before that, he was a research software engineer for the Department of Defense. He was also the founding chairman of the ATM Forum's end-user technical committee.

**Jodi Anderson**, BS 94, was married in March 2000 to John Mench. She is a consultant with Ceridian and lives in Champaign, Ill.

**Marc Andreessen**, BS 94, left AOL in 1999 to form Loudcloud, an Internet infrastructure services provider in Sunnyvale, Calif. He co-founded Netscape in April 1994, where he served as its CTO. He was AOL's CTO after the company merged with Netscape in March 1999.

**Scott Nash**, BS 94, was married in October 1999 to Sarah Kennedy, BLA 94. He is a software developer at Informix in Downers Grove, Ill.

**Alexander Franco**, MCS 94, is an attorney practicing intellectual property law with Knobbe, Martens, Olson & Bear in Newport Beach, Calif. His work primarily involves patent practice with emphasis on computer-related technologies.

**Paul Rajlich**, BS 95, MS 98, and his wife Cynthia, BS Kines 96, had their second son, Joseph Paul, on August 26, 2000. Rajlich, a research programmer at NCSA, recently wrote a game loosely based on Quidditch from the Harry Potter books. Play it on the Web at [brighton.ncsa.uiuc.edu/broomsticks/](http://brighton.ncsa.uiuc.edu/broomsticks/).

**Joseph B. Zell**, BS 95, was promoted in the Air Force to the rank of captain and was awarded the Joint Service Commendation Medal in July 1999.



Zell is a nuclear planning and execution system applications team chief assigned to the U.S. Strategic Command at Offutt Air Force Base, Bellevue, Nebr.

**Alex Zoghlin** was named CTO of Orbitz, a consumer-oriented travel industry portal being developed by a group of airlines. Zoghlin was founder of Neoglyphics Media Corp. and Sportsgear LLC, both in Chicago.

**Abhay Samant**, MS 96, is coauthor of a guide to LabVIEW signal processing, published by Prentice-Hall in 1998. He works for National Instruments in Austin, Tex., on numerical algorithms, digital signal processing, and communication systems.

**Sharad Mehrotra**, PhD 96, is co-founder, chairman, and CEO of Procket Networks, a developer of high-performance, scalable Internet infrastructure products, headquartered in San Jose, Calif. Previously, he was in the Processor Architecture Group at Sun and an IC designer with Silicon Systems. His wife, Rachna, has an MS 95 in accountancy.

**David L. Morgan III**, BS 97, was married in September 2000 to Dorothy Gray, BS AeroE 98. He works for Aechelon, a real-time computer graphics company in Sunnyvale, Calif., and she is a baker for Noe Valley Bakery, an artisan bakery in San Francisco.

**Jen Mozen**, BS 97, recently joined PlanetFeedback.com, an Internet start-up company in Cincinnati, Ohio, where she manages the company's engineering department and leads several new product initiatives. Before that, she was with Procter & Gamble.

**Richard K. Walter**, BS 97, was married in April 2000 to Kendra Heilman, BA Soc 99. He is a senior consultant with One Inc. in Oakbrook Terrace, Ill.

**Jerry Schlabach**, MS 97, was married in January 1999 to Tracey VanMeter, JD 93, MBA 93. He is chief of technology integration for the U.S. Army Intelligence and Security Command. They live in Springfield, Va.

**Jason Alt**, BS 98, was married in February 2000 to Mandi Skinner, BS Accy 98. Jeff Thompson, BS 96, was best man. Alt and Thompson work for Argus Systems Group, an e-business security firm in Savoy, Ill.

**Cory Johannsen**, BS 98, was married in June 1999 to Erin Day. He is employed in Chicago by software developer STR.

**Jay Lickfett**, BS 98, was married in August 1999 to Kara Anne Corbin. He is a systems analyst for Procter & Gamble in Cincinnati.

**Charles D. Schultz**, BS 98, married Heather Grush in June 1999. He is a database administrator for the U of I.

**Roberto Melo**, MS 98, MBA 98, is president of dChain Commerce (formerly CollaTech), a Champaign-based, e-commerce company he founded in 1996. The company recently received funding from the Illinois Coalition, a state-run government agency, marking the coalition's first investment outside the Chicago metropolitan area.

**George Gruschow**, BS 99, was married in June 1999 to Catherine Chou, BS BioE and Psych. He works for Motorola, Arlington Heights, Ill.

**Benjamin Mitchell**, BS 99, was married in July 1999 to Jolynn Walker. He is a software engineer at Motorola, in Schaumburg, Ill.

**Craig Materick**, MCS 99, was married to Karen Anderson in June 1999. He works for Technology Services Group in Oak Brook, Ill.

While he was a student, **Steven R. Baker**, BS 00, wrote the first version of a Champaign-Urbana Web site linking local volunteers and local groups offering opportunities via the Internet, [www.cuvolunteer.org](http://www.cuvolunteer.org). He maintains the site on a volunteer basis. Baker now works for Excite@Home, a broadband, new media company, in Redwood City, Calif., as a software engineer working on the portal site [sports.excite.com](http://sports.excite.com).

**Joshua Hall**, BS 00, was married in May 2000 to Tammi Kandel. ■

University of Illinois  
*Computer Science Alumni News*

Editor: Judy Tolliver

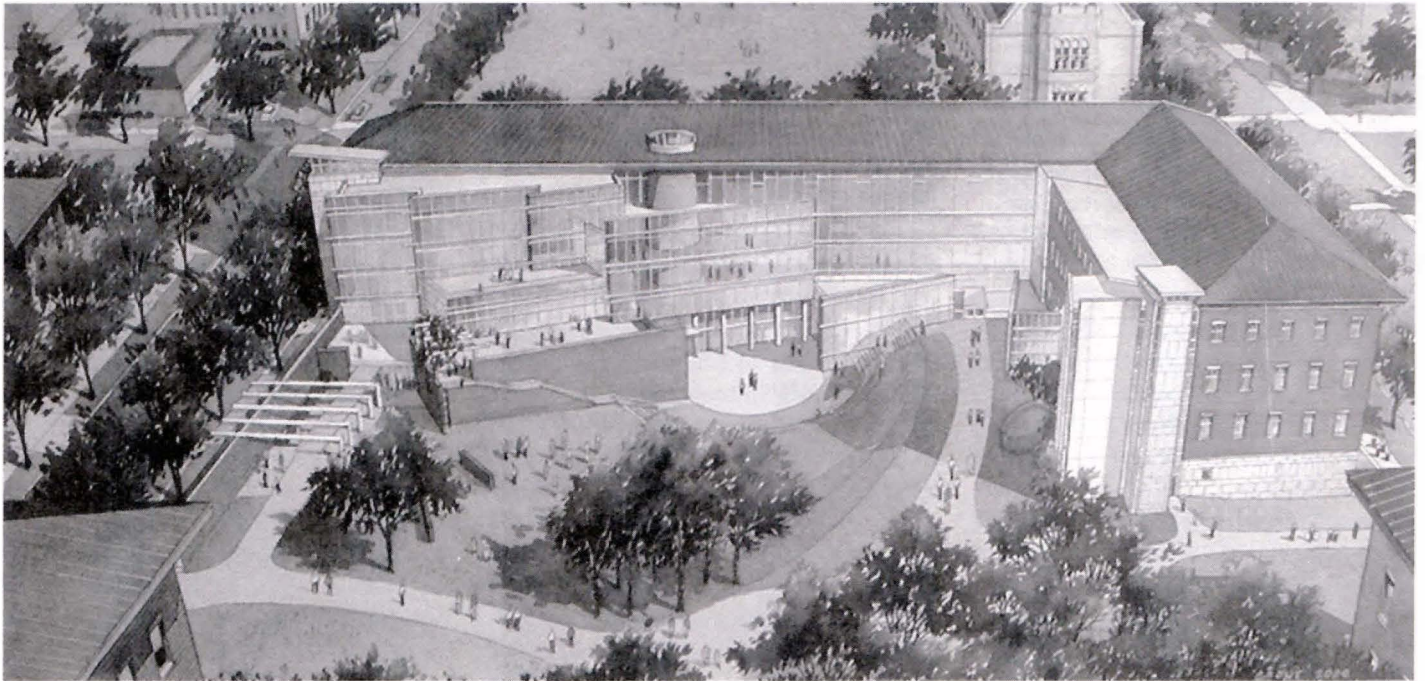
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*Siebel Center (looking south), the future home of the Department of Computer Science, will have about 224,000 total square feet, with a large expanse of glass facing north toward a large quad area that will be shared with the NCSA building. Siebel Center will continue the traditional look of the campus, with a red brick and limestone exterior matching other buildings on campus, according to architect Jon Jackson of the firm Bohlin, Cywinski and Jackson. The building is a \$74 million project, funded with a gift from Tom Siebel, MS 85, and the state. Groundbreaking is in 2001, and completion is expected in the summer of 2003.*



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