

# Annual Report 2006-07



## Donald Bren School of Information and Computer Sciences

UNIVERSITY of CALIFORNIA  IRVINE



Donald Bren Hall Dedication. June 20, 2007. (L to R) Vice Chancellor Tom Mitchell, Brenda Drake, Chancellor Michael V. Drake, Donald Bren, and Dean Debra J. Richardson

Dear Bren School Community,

2006-07 was an exciting academic year at UC Irvine's Donald Bren School of Information and Computer Sciences. We had many successes and firsts as we moved into the new Donald Bren Hall and welcomed many new graduate and undergraduate students.

Today, we are an academic community of more than 1,500 students, over 100 full-time faculty and staff, and approximately 7,000 alumni worldwide. In teaching and scholarship, we continue to be among the top in information and computer sciences. To add to our list of accolades, our Networked Systems program was just rated number one by *Academic Analytics*, in addition to being ranked third in Information Systems.

At the Bren School, we have a unique perspective on computing and information technology, stimulating society daily. Our vibrant community, comprised of researchers and educators as well as industry-leading scholars, explores innovative topics ranging from building complete computer systems on chips smaller than a finger nail to developing user interface systems that allow engineers on opposite sides of the world to collaborate effectively.

I invite you stay in touch with us throughout the year by subscribing to our RSS feed or visiting our Web site regularly ([www.ics.uci.edu](http://www.ics.uci.edu)).

Many thanks for your continued support of our vision.



**Debra J. Richardson**

The Ted and Janice Smith Family Foundation Dean

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# Bren School Faculty

Faculty members in the Bren School are of national and international renown, including an AAAS Fellow, ACM and IEEE Fellows, AAAI Career Fellows respected authors, and preeminent researchers and scholars.

Despite an exhaustive list of accolades, the most notable trait of each faculty member is the unparalleled commitment to teaching and instruction as demonstrated in the classroom.

The Bren School's 68 faculty (and their primary research area) are listed in alphabetical order. For more about our faculty and their research, please visit: [www.ics.uci.edu/faculty](http://www.ics.uci.edu/faculty).

**Thomas A. Alspaugh**  
Software Engineering

**James Arvo**  
Computer Graphics

**Pierre Baldi**  
Artificial Intelligence and Machine Learning

**Lichun Bao**  
Networked and Distributed Systems

**Lubomir Bic**  
Networked and Distributed Systems

**Alfred Bork**  
Computer Science Education

**Elaheh (Eli) Bozorgzadeh**  
Embedded System Design

**Rina Dechter**  
Artificial Intelligence and Machine Learning

**Michael Dillencourt**  
Theory of Computing

**Paul Dourish**  
Human-Computer Interaction

**Nikil Dutt**  
Embedded System Design

**Magda El Zarki**  
Networked and Distributed Systems

**David Eppstein**  
Theory of Computing

**Julian Feldman**  
Computer Science Education

**Stephen D. Franklin**  
Networked and Distributed Systems

**Michael Franz**  
Compilers and Operating Systems

**Dan Frost**  
Computer Science Education

**Daniel Gillen**  
Statistics (Biostatistics)

**Tony Givargis**  
Embedded System Design

**Michael T. Goodrich**  
Security, Privacy and Cryptography

**Richard Granger**  
Bio-Medical Informatics

**Ian G. Harris**  
Embedded System Design

**Wayne Hayes**  
Database and Information Management

**Daniel S. Hirschberg**  
Theory of Computing

**Sandra Irani**  
Theory of Computing

**Norman Jacobson**  
Computer Science Education

**Ramesh Jain, Bren Chair in ICS**  
Experiential Multimedia Computing

**Stanislaw Jarecki**  
Security, Privacy and Cryptography

**Wesley O. Johnson**  
Statistics

**David G. Kay**  
Software Engineering

**Dennis Kibler**  
Artificial Intelligence and Machine Learning

**Alfred Kobsa**  
Human Computer Interaction

**Roberta Lamb**  
Social Informatics

**Richard Lathrop**  
Artificial Intelligence and Machine Learning

**Chen Li**  
Database and Information Management

**Gang Liang**  
Statistics (Machine Learning)

**Cristina V. Lopes**  
Compilers and Operating Systems

**George S. Lueker**  
Theory of Computing

**Aditi Majumder**  
Graphics and Visual Computing

**Gloria Mark**  
Human Computer Interaction

**Gopi Meenakshisundaram**  
Graphics and Visual Computing

**Sharad Mehrotra**  
Database and Information Management

**Eric Mjolsness**  
Artificial Intelligence and Machine Learning

**Bonnie Nardi**  
Human Computer Interaction

**Alexandru Nicolau**  
Embedded System Design

**Renato Pajorola**  
Graphics and Visual Computing

**Donald J Patterson**  
Artificial Intelligence and Machine Learning

**Natasa Przulj**  
Bio-Medical Informatics

**David Redmiles**  
Software Engineering

**Amelia C. Regan**  
Database and Information Management

**Debra J. Richardson**  
Software Engineering

**Suzanne K. Schaeffer**  
Software Engineering

**Isaac D. Scherson**  
Network and Distributed Systems

**Susan E. Sim**  
Software Engineering

**Padhraic Smyth**  
Artificial Intelligence and Machine Learning





# Bren School Faculty

**Thomas A. Standish**

Software Engineering

**Hal Stern**

Statistics (Bayesian Statistics)

**Tatsuya Suda**

Networked and Distributed Systems

**Shannon Tauro**

Embedded Systems Design

**Richard Taylor**

Software Engineering

**Alex Thornton**

Computer Science Education

**Bill Tomlinson**

Arts Computation Engineering

**Gene Tsudik**

Security, Privacy and Cryptography

**Andre van der Hoek**

Software Engineering

**David van Dyk**

Statistics (Bayesian Statistics)

**Alexander Veidenbaum**

Computer Architecture

**Nalini Venkatasubramanian**

Experiential Multimedia Computing

**Max Welling**

Artificial Intelligence and Machine Learning

**Xiaowei Yang**

Network and Distributed Systems

**Yaming Yu**

Statistics (Statistical Computing)

**Hadar Ziv**

Software Engineering

Curiosity about the world and a commitment to solving problems are the passions that drive faculty at the Bren School. Their research in the information and computer sciences are applicable to many scholarly and scientific fields. But, our faculty don't do it alone. Students work side-by-side with nationally renowned professors to advance knowledge - and improve lives. Below is a list of key research areas tackled by our faculty.

**» Computer Architecture**

Computer architecture is the conceptual design and fundamental operational structure of a computer system. It is a blueprint and functional description of requirements and design implementations for the various parts of a computer — focusing largely on the way by which the CPU performs internally and accesses addresses in memory.

**» Embedded System Design**

Focuses on issues relating to embedded systems, a special-purpose system in which the computer is completely encapsulated by the device it controls. Unlike a general-purpose computer, such as a personal computer, an embedded system performs pre-defined tasks, usually with very specific requirements.

**» Network and Distributed Systems**

Researchers investigate various issues in the design and analysis of high-speed networks for multimedia applications. They are actively involved in research on computer networks and distributed systems, with the goal of designing, analyzing and implementing communication systems that allow high-speed transport of multimedia information between end-users.

**» Compilers and Operating Systems**

Compilers and Operating Systems concentrates on reasons for wanting to translate source code is to create an executable program and the set of computer programs that manage the hardware and software resources of a compute. At the foundation of all system software, an



# Research Areas

operating system performs basic tasks such as controlling and allocating memory, prioritizing system requests, controlling input and output devices, facilitating networking, and managing files.

## » Programming Models and Languages

Sets of software technologies express parallel algorithms and match applications with the underlying parallel systems. Programming models and languages enclose the areas of applications, programming languages, compilers, libraries, communications systems, and parallel I/O. A programming model is usually judged by its expressibility and simplicity, which are by all meanings conflicting factors. The ultimate goal is to improve productivity of programming.

## » Security, Privacy and Cryptography

The development of secure communication protocols is a critical issue in today's age of pervasive communication and researchers in this area work on issues that include anonymity and authentication in network security, key agreement and digital signatures.

## » Ubiquitous Computing

Ubiquitous computing builds upon and unites virtually all of the current research strengths in the Bren School. Researchers are addressing issues such as context-aware computing, whereby mobile computing responds to one's current context.

## » Experiential Multimedia Computing

A very important but often ignored fact in information-centric computing environment designs is that humans are

very efficient in perceptual analysis and relatively weak in logical analysis; computers today are exactly opposite. By using computers and users synergistically as a system, a very different type of computing environment, experiential environments, could be developed. Experiential environments allow a user to directly observe data and information of interest related to an event and to interact with the data based on his interests in the context of that event.

## » Graphics and Visual Computing

Focuses on the field of visual computing, where one utilizes computers both to generate visual images synthetically and to integrate or alter visual and spatial information sampled from the real world. Current and future research areas include multi resolution modeling, surface reconstruction and image based rendering.

## » Artificial Intelligence and Machine Learning

Research in AI is concerned with producing machines to automate tasks requiring intelligent behavior. Examples include computer vision, bioinformatics, constraint-based problem solving, text understanding, data mining and smart sensor networks.

## » Bio-Medical Informatics

Involves the use of techniques from applied mathematics, informatics, statistics, and computer science to solve biological problems. Current areas of research at the Bren School include medical information access and knowledge representation for health-care guidelines.

## » Scientific Computing

Refers to the application of computers to scientific problems, from astrophysics to zoology. The mode of application can be system modelling, data analysis and mining, or visualization. The focus can be on developing new computational techniques, such as parallel algorithms or new data mining ideas, or on the novel application of existing techniques to new scientific problems.

## » Theory of Computing

Bren School faculty members have made significant contributions to many topics in this field, including graph algorithms and graph drawing (computing with systems of pairwise interactions between objects such as web page links, protein interactions, or social networks) and computational geometry (computing with planar or spatial data).

## » Statistics

Researchers are concerned with developing and studying methods for collecting, analyzing, interpreting and presenting empirical data. Statistical principles and methods are important for addressing questions in public policy, medicine, industry and virtually every branch of science.

## » Databases and Information Management

Database and Information Management studies both the structure and behavior of computers systems from repositories, interfaces and channels to services and messages.



# Research Areas

## » Information Design

Information Design is the art and science of preparing information so that human beings can use it with efficiency and effectiveness. More specifically, it focuses on visual displays of data, information architecture, the design of information systems, databases and data structures.

## » Software Engineering

Software research is aimed at creating new software technology and solutions, furthering the information revolution. The central goal of this research is improvement in software development, evolution, deployment, quality, understandability and cost-effectiveness.

## » Human Computer Interaction

Human Computer Interaction explores the interaction between people (users) and computers. It is an interdisciplinary subject, relating computer science with many other fields of study and research. Interaction between users and computers occurs at the user interface, which includes both software and hardware, for example, general-purpose computer peripherals and large-scale mechanical systems such as aircraft and power plants.

## » Computer Supported Collaborative Work

Computer Supported Collaborative Work researches and innovates collaborative technologies. The discipline studies the hardware, software and processes designed to aid in group related tasks such as basic communication, information sharing, decision making, scheduling, and design.

## » Social Informatics

Social informatics is part of a larger body of socio-economic research that examines the ways in which the technological artifact and human social context mutually constitute the information and communications technology ensemble. UCI is an

internationally recognized center for research on the social and managerial dimensions of computerization, computer-supported cooperative work, and human-computer interaction.

## » Arts Computation Engineering

Arts Computation Engineering (ACE) addresses emerging practices and career paths that combine skills and sensibilities of technical and scientific disciplines with arts and humanities. The ACE program is oriented towards informed production. ACE students make things that work, and they understand the technical, historical and socio-cultural locations of their work. ACE favors originators of novel techno-cultural formations, makers of machines, responsive environments, socio-politically situated action and non-standard technological systems.

## » Computer Science Education

Computer Science Education concentrates on curricular development and evaluation of student software. The program at the Bren School focuses on finding new delivery methods for materials being taught instead of the traditional research in software engineering education that tends to focus on the materials to be taught or the kinds of class projects to be used in training students.



# Department of Computer Science

## About Computer Science

Computer science is the catalyst for every evolutionary — and revolutionary — step in computer development. From mathematical theories, data structures and algorithms to the operating systems and programs that employ them, an understanding of computer science is essential if you wish to develop the next advances in computer technology and applications.

The Department is internationally recognized as a unique group of faculty, visiting researchers, students and educational programs. Computer science faculty conduct research in numerous aspects of computer science including:

- » Computer Architecture
- » Embedded Systems Design
- » Networked & Distributed Systems
- » Compilers and Operating Systems
- » Programming Models & Languages
- » Databases and Information Management
- » Artificial Intelligence and Machine Learning
- » Security, Privacy and Cryptography
- » Ubiquitous Computing
- » Graphics and Visual Computing
- » Experiential Multimedia Computing
- » Scientific Computing
- » Theory of Computing
- » Computational Biology and BioInformatics

## Noteworthy



Baldi



Dutt

**Pierre Baldi, Nikil Dutt** and **Michael Goodrich** have been awarded the title of Chancellor's Professor. The title is conferred for a five-year renewable term and recognizes scholars who have demonstrated unusual academic merit and whose continued promise for scholarly achievement makes them of exceptional value to the university.

**Pierre Baldi** was named a fellow of the Association for the Advancement of Artificial Intelligence, recognized for his

contribution to statistical machine learning. **Baldi** is also the recipient of unrestricted gift of \$45,000 from Microsoft Research. The award will be used to support Machine Learning research in the Baldi group and help develop the new upcoming Bren School Center for Machine Learning and Data Mining.



**Magda El Zarki** was appointed Cor Wit Chair at Delft University of Technology in the Netherlands. Established in 2003 by the Cor Wit Foundation, the Cor Wit chair is awarded annually to international researchers in the field of telecommunications and informatics who focus on research questions at the interface of technology and society.



**Michael Franz** received a \$400,000 grant from the National Science Foundation (NSF) for his research project entitled MLS-VM: Design and Implementation of a Next-Generation Information-Centric Target Platform for Trusted Internet Computing. **Franz** also received grants from Mozilla Corporation and the National Intelligence Community. He was recently elected a Distinguished Member of The Association for Computing Machinery.



**Michael Goodrich** has been elected a Distinguished Scientist of The Association for Computing Machinery. **Goodrich** was also awarded the 2006 Technical Achievement Award from the IEEE Computer Society. The award cites his "outstanding contributions to the design of parallel and distributed algorithms for fundamental combinatorial and geometric problems".



**Bren Professor Ramesh Jain** gave an invited keynote lecture entitled "From Pervasive Computing to EventWeb" at the Fifth Annual IEEE International Conference on Pervasive Computing and Communications conference in White Plains, New York. **Jain** also gave a keynote talk, Event Web: The next disruptive evolutionary stage in WWW, at the International Conference on Intelligent Sensing and Information Processing, held in Bangalore December 16-



# Department of Computer Science

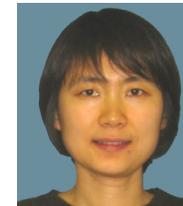


**Chen Li** received a Google Research Award for \$37,500. The funds, renewable for a second year, will be applied to Li's research entitled "Efficient Approximate String Searching in Large Dictionaries" which will research data cleaning, especially on approximate string searching.



**Tatsuya Suda** received grants totaling more than \$1.35 million for his research in molecular communication aimed at creating a communication system for biological nano machines to communicate. The first grant of \$100,000 from the National Science Foundation's Nanoscale Exploratory

Research program (NSF-NER) supports Suda's research entitled Exploratory Research in Molecular Communication between Nanomachines. Two additional grants from the National Institute of Information and Communications Technology (NICT) will support his research project entitled Molecular Communication: Exploratory Research to Integrate Bio Technology. **Suda** also received the IEEE Communications Society 2006 Outstanding Service Awards at the INFOCOM 2006 conference in Barcelona.



**Xiaowei Yang** received two NSF awards to study ways to improve Internet architecture. The first award, provides \$300,000 to NeTS FIND: An Internet Architecture For User Controlled Routes. The project will attempt to develop an Internet architecture that enables users or their end-systems to select the paths their packets take through the network. The second project, awarded \$200,000 and entitled a CT-ER: A DoS-Resistant Internet Architecture, funds research to design and evaluate an Internet architecture that is resistant to Denial-of-Service (DoS) flooding attacks of any scale.



**Sharad Mehrotra** and **Nalinii Vekatasubramanian** appeared on the Today Show September 10t, 2006 on KNBC. Mehrotra and nkatasubramanian, along with a team of graduate students working on Project RESCUE, discussed and demonstrated emerging technologies for security and emergency communications.

Mehrotra



**Sharad Mehrotra**, was also awarded the 2005-06 Bren School Outstanding Mentor Award. Mehrotra was nominated by eight of his Ph.D. students.

Vekatasubramanian



**Natasa Przulj** received a \$570,000 National Science Foundation CAREER grant in support of her 5-year project entitled "CAREER: Tools for Analyzing, Modeling, and Comparing Protein-Protein Interaction Networks". The project proposes improvements in tools for analyzing and modeling of Protein-Protein Interaction (PPI) networks.



**Padhraic Smyth** has been awarded a 3-year \$250,000 grant to develop new machine learning algorithms that use historical records of climate data as a basis for making seasonal climate predictions. The work is funded by the US Department of Energy's Climate Change Prediction program as part of the SciDAC initiative (Scientific Discovery Through Advanced Computing).



**Gene Tsudik** has been awarded a Fulbright Scholar grant to lecture and conduct research at the University of Rome, Italy during the 2006-07 academic year. **Tsudik** also chaired the technical program at the second annual IEEE International Conference on Security and Privacy in Communication Networks (SecureComm) held July 2007 in Baltimore, Maryland. He gave keynote talks at PRISE '07, SAR-SSI '07, and EUROPKI '07.

## Best Paper Awards



**Eli Bozorgzadeh** and **Love Singhal**, a Ph.D. candidate in computer science received the Best Paper Award at the 2006 IEEE International Conference on Field Programmable Logic and Applications (FPL'06) that took place in Madrid, Spain, August 28-30 2006. The awarded paper is titled "Multi-layer Floorplanning on a Sequence of Reconfigurable Designs".

A paper written by professors **Magda El Zarki**, **Nikil Dutt** and **Nalini Venkatasubramanian** was awarded the Best Paper Award, 1st Place Winner at the 3rd IEEE *Consumer Communications and Networking Conference* that took place in Las Vegas, January 2006. The paper titled "Backlight Optimization Scheme for Video Playback on Mobile Devices," examined ways to create substantial energy savings by

dynamically adapting backlight intensity levels on low power portable devices like the Compaq iPAQ.



The Editorial Board of ACM TODAES selected **Tony Givargis'** paper, entitled "Zero Cost Indexing for Improved Processor Cache Performance," for the ACM *Transaction on Design Automation of Electronic Systems* (TODAES) 2006 Best Paper Award. Givargis received the award at the 43rd Design Automation

Conference in San Francisco.

**Bren Professor Ramesh Jain** was awarded the Best Paper Award at the International Conference on Multimedia Modeling, held in Singapore. The paper entitled *Ontology-based Annotation of Paintings using Transductive Inference Framework*, proposed a framework for ontology-based annotation of paintings with application-level concepts of art period.

Ph.D. candidate **Sudeep Pasricha** and professor **Nikil Dutt** received the Best Paper Award at the *Asia and South Pacific Design Automation Conference* (ASPAC) that took place in Yokohama, Japan in January 2006. The paper, titled "Constraint-driven Bus Matrix Synthesis for MPSoC," proposes novel techniques to reduce the cost and development time of communication architectures for high performance electronic systems used in the next generation electronic devices.

## Research Highlight: Communicating E2E

**Donald Bren Professor of Computer Science Ramesh Jain** and his research group are taking an event-centric approach for realizing E2E connection. Communication has typically been a person-to-person (P2P) interaction. Computers, cell phones and other technology have transitioned communication to occur in a device-to-device (D2D) method.

Jain is looking at taking this interaction back to a P2P approach using technology to bring people closer together in an ever-connected world. This new approach, Environment to environment (E2E) connectivity, can be achieved by placing multiple heterogeneous sensors (cameras, microphones, infrared, etc.) in an environment to detect appropriate objects and events continuously and creating a dynamic Situation Model of the environment.

This situation model can be used to provide adequate symbolic as well as sensory (experiential) information to users in other environments. By creating a similar situation model for the other environments, a joint situation model can be prepared that can help in presenting appropriate information in both environments at adequate locations.

According to Jain, this innovative communication model will make interactions among people in different locations much more natural because unlike current device-to-device models, "people will be free and natural in their environment and will be able to interact with remote environments as if they are at the same place."



The applications of E2E technologies are diverse. There are business applications in which two international office can have truly one on one meetings, to bringing an interactive museum exhibit into your own home. In situations where interaction and transmission of large volumes of data are critical issues, E2E will provide a convenient communications mechanism from remote sites with a convenient display interface.

The first prototype E2E communications are now taking place between UC Irvine and the National University of Singapore.

Professor Jain hopes to take what has become such a device-centric communication into a person-centric communication. "People should not be concerned about the functionality and focus of communication through a single medium, such as teleconferencing. They should worry only about communication not the medium."



## Research Highlight

### Molecular Communication

Communication plays a crucial role in our lives – from the daily interactions we have with people to the molecular connections of our cells that keep us alive.

As new technology emerges in medicine and computing, it has become ever more important to understand and make sure that genetically engineered cells, or nanomachines, are able to communicate.

This engineered biological communication is the budding field of molecular communication.

Computer science professor Tatsuya Suda and his students are exploring the possibility of molecular communication as a solution for sharing information between biological nanomachines such as motor proteins, ATPases and bacterium.

Suda's research explores how cells compute information and share them with other biological (cells) and biologically derived nanomachines, or molecular sensors.

Nanomachines perform computation and senses its environment. Molecular communication provides a mechanism for these nanomachines to communicate over a short distance using molecules as a communication carrier.

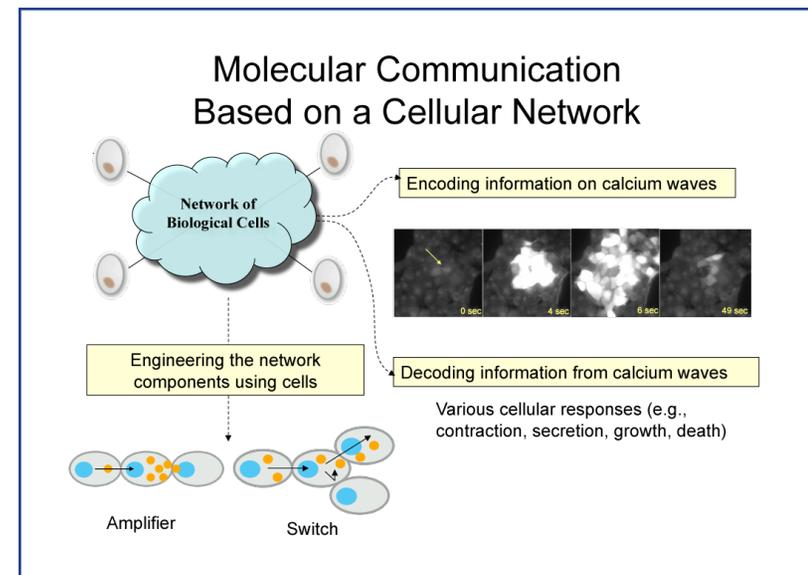
Suda and his research team are focusing on understanding these biological nanomachines and on artificially creating counterparts of biological nanomachines.

"Communication provides a means by which nanomachines perform coordinated tasks that cannot be accomplished by a single nanomachine," says Suda. "For example, medical nanomachines with communication capabilities may perform coordinated monitoring of human health."

So what is the ultimate goal of this molecular communications research?

Suda hopes to design and engineer molecular-scale information processing and communication systems by understanding cellular behaviors including cell-to-cell communications.

In particular, his research group hopes to control calcium signaling which is universally used to modulate cellular behaviors, such as growth and death, in many types of cells.





# Department of Informatics



Professor Bill Tomlinson and his Social Code Group have created the Protohuman Project, a creation of communities of believable autonomous characters that inhabit heterogeneous networks of computational devices.

## About Informatics

Informatics is the interdisciplinary study of the design, application, use and impacts of information technology. It goes beyond technical design, to focus on the relationship between information system design and use in real-world settings. These investigations lead to new forms of system architecture, new approaches to system design and development, new means of information system implementation and deployment as well as new models of interaction between technology and social, cultural and organizational settings.

Informatics faculty conduct research in numerous aspects of Informatics including:

- » Social Informatics
- » Ubiquitous Computing
- » Computer Supported Collaborative Work
- » Software Engineering
- » Programming Models & Languages
- » Computer Science Education, Informatics Curriculum
- » World Wide Web / Internet Technology
- » Arts Computation Engineering
- » Human Computer Interaction
- » Information Visualization
- » Information Design & Management
- » Usable Security and Privacy

## Noteworthy



*Alspaugh*

**Thomas A. Alspaugh, Cristina V. Lopes** and **Richard Taylor** were recently awarded IBM's Eclipse Innovation Award. This brings the total number of Eclipse award winners at UC Irvine to eight, which is also the most of any university worldwide.



*Kobsa*

**Alfred Kobsa** published the book "The Adaptive Web: Methods and Strategies of Web Personalization" together with two colleagues from the University of Pittsburgh and the University of Hanover, Germany. The 24-chapter 760-page volume provides an in-depth overview of current research on personalized interaction on the World Wide Web.



*Lopes*



*Dourish*

**Crista Lopes** led the UC Irvine-hosted Ubicomp 2006, the Eighth International Conference of Ubiquitous Computing, as conference chair in September.

**Paul Dourish** and **Don Patterson** served as Program Chair and Local Arrangements Chair, respectively.



*Patterson*

Ten years after its publication, the first paper on Aspect-Oriented Programming, co-authored by **Crista Lopes** is currently the #23 most cited paper in all Computer Science publications indexed citeseer. The paper, co-authored by Gregor Kiczales, John Lamping, Anurag Mendhekar, Chris Maeda, Jean Marc Loingtier, and John Irwin, is considered a seminal paper in software design research.



# Department of Informatics



**Bonnie Nardi's** article entitled "Why We Blog" was recently ranked as the most popular paper downloaded from the Association for Computing Machinery's magazine and computing surveys articles. The paper, co-authored with Diane J. Schiano, Michelle Gumbrecht and Luke Swartz was originally published in December 2004 for Communications of the ACM.



**Debra J. Richardson** was appointed by California Governor Arnold Schwarzenegger to the bipartisan Broadband Task Force. The Broadband Task Force will bring together public and private stakeholders to remove barriers to broadband access, identify opportunities for increased broadband adoption and enable the creation and deployment of new advanced communication technologies.



**Susan Elliot Sim** has been awarded \$5,000 from the Ted and Janice Smith Faculty Seed Fund for her project entitled *Maintaining Traceability Links in Extreme Programming*.



**David Redmiles** and professor of computer science professor **Gene Tsudik** have each been awarded Graduate Assistance in Areas of National Need (GAANN) Program fellowships of over \$383,000 from the U.S. Department of Education. The GAANN will support several graduate students annually, over a three year period in the study of problems in the design, application, use and impacts of computer and information technology and issues in security and privacy.



**Richard Taylor's** paper "A Classification and Comparison Framework for Software Architecture Description Languages" has been identified by Information and Software Technology as the most cited article in software engineering articles for the year 2000. Over the last 20 years, the paper ranks fourth as most cited. The paper was co-authored by Nenad Medvidovic.



**Bill Tomlinson** has received a \$500,000 National Science Foundation CAREER grant in support of his project entitled "CAREER: An Agent-Based Approach to Human-Computer Interaction for Systems of Collocated Devices. The grant will fund Tomlinson's research into ways in which several collocated devices (i.e. PDAs, mobile phones) may be enabled to work together as a system and take advantage of the unique characteristics of collocation.



**André van der Hoek** and research scientist Emily Navarro have been awarded \$450,000 from the National Science Foundation to expand their educational software engineering tool. SimSE, an innovative educational tool, provides students the opportunity to practice managing software engineering processes in a simulated environment. Van der Hoek also received a 2007 HP Technology for Teaching grant, which is designed to transform teaching and improve learning in the classroom through innovative uses of technology.

## Research Highlight

### Have you switched tasks lately?



In a study of the work practices of analysts, software developers and managers, graduate student Victor M. González and his advisor, Informatics professor Gloria Mark, has come to the rather stunning revelation that people average a mere three minutes on a single task.

Tool use in completing these tasks, on average, is somewhat more than two minutes. The longest duration of tool use is with PCs, yet this averages only slightly more than three minutes at any one time.

These are the key results from a seven-month ethnographic study in which González and Mark observed work practices and interviewed key personnel at a representative information technology organization.

This landmark study demonstrates the far-reaching extent of the frequency of interruptions on the fragmentation of work. People are just as likely to interrupt themselves as to be interrupted by others. An interesting area for future research is to understand the reasons that lead information workers such as these to interrupt themselves so frequently.

Current information technology is designed to support individual events such as word processing or e-mail use rather than to provide mechanisms to integrate the multiple information objects required by some working spheres.

The research shows that design of information technology needs to consider how information workers switch constantly among working spheres. The implications are tremendous: virtually all of today's tools are centered around a single task and context, and do not facilitate easy switching.

González and Mark argue that tools should be centered on working spheres, individual's conceptualizations of their basic units of work, and must facilitate rapidly and seamlessly switching among tasks within such spheres.





# Department of Statistics



## About Statistics

The Department of Statistics was founded in 2002 with an emphasis on research in statistical theory and interdisciplinary collaborations. Statistics — concerned with developing and studying methods for collecting, analyzing, interpreting and presenting empirical data — is important for addressing questions in public policy, medicine, industry and virtually every branch of science.

Interest in statistical methods has increased dramatically with the abundance of large databases in fields like computer science (Internet and Web traffic), business and marketing (transaction records), and biology (the human genome and related data). It is the substantial questions in the various areas of application that drive the development of new statistical methods and motivate the mathematical study of the methods' properties.

Statistics faculty conduct research in numerous aspects of Statistics including:

- » Bayesian Methodology
- » Statistical Computing
- » Biostatistics
- » Astrostatistics

## Faculty Awards and Accolades



**Daniel Gillen** was appointed to the Federal Drug Administration's advisory committee for Reproductive Drugs as a statistician for the panel. Gillen was recommended and selected for the four-year appointment based upon his work in the design and analysis of clinical trials.



**David van Dyk** was selected as a Fellow of the American Statistical Association (ASA) by the 2006 ASA Committee on Fellows. Each year, ASA members nominate their peers as fellows of the ASA. Qualifications include having made outstanding contributions in some aspect of statistical work." ASA annually selects no more than one-third of one percent of its members as fellows. **Van Dyk** was also named Editor-elect for the Journal of Computational and Graphical Statistics. Established in 1992, this journal contains cutting-edge research, data, surveys, and more on numerical graphical displays and methods, and perception. Articles are written for readers who have a strong background in statistics but are not necessarily experts in computing.



## Research Highlight

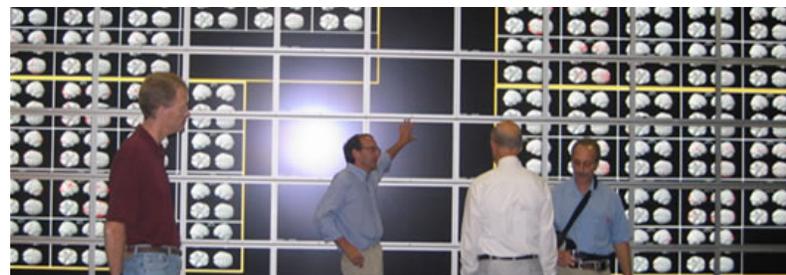
### CHARACTERIZING VARIATION IN MEDICAL IMAGING EXPERIMENTS

Statistics professor Hal Stern, along with Computer Science professor Padhraic Smyth and graduate students, are working to characterize the variation in medical imaging at different sites and on different subjects. A National Institutes of Health-funded Biomedical Informatics Research Network (BIRN) research project is developing methods to facilitate inter-university collaborations in mental health research.

Specifically, 11 sites across the United States are attempting to share functional MR images. As an initial step a set of five volunteers visited each of the 11 sites and performed the same cognitive, sensorimotor, breathholding, and rest tasks on each of two days.

This data provides an opportunity to characterize the relative contribution to estimated brain activation of run-to-run variation within a visit, visit-to-visit variation for the same person at the same site, site-to-site variation and subject-to-subject variation.

The research focuses on developing a number of different ways of characterizing the variation, including the possibility of characterizing variation in extent and location of brain activation to a particular task. It has been striking to see the amount of variation in this influential imaging technique even when the same person is performing the same task on the same machine on the same day.



Professors Falko Kuester, Hal Stern, Biff Bunney, and Steven Potkin (left to right), are working to characterize the variation in medical imaging at different sites and on different subjects.



# Bren School Events

The Bren School is proud to feature colloquiums, seminars and speaker series' sponsored by our departments and research centers. The following is a selected list of events that the Bren School offered to our faculty and students during the 2006-07 academic year.

## Fall Quarter '06

- New Graduate Student Welcome
- Informatics Seminar: Alessandro Garcia
- Informatics Seminar: Gloria Mark
- Avande Information Session
- Informatics Seminar: Ricardo Morla
- Spatio-Temporal Satellite Data Processing
- Edwards Lifesciences Information Session
- Microsoft Information Session
- Accenture Information Session
- CS Seminar: Privacy in Outsourced Databases
- Where can an Insider Attack? Christian W. Probst
- Smith Distinguished Speaker: Stephen Barley, Gurus Hired Guns
- DIRECTV Information Session
- Informatics Seminar: Paulo Maurin
- Informatics Seminar: Susan Sim
- CS Seminar: Learning Time-Intensity Profiles of Human Activity
- Apple Information Session
- AIML seminar - Chih-Jen Lin
- IGB Distinguished Speaker: Gunnar von Heijne
- The 'New' Science of Networks - A Front-Line Report
- Informatics Seminar: Matthew Bietz
- Myrmic: Secure and Robust DHT Routing
- IGB Distinguished Speaker Series: Jack W. Szostak
- Informatics Seminar: Mark Poster
- Approaches to Small Area Estimation for Unemployment Data Series
- Project:ICS Showcase
- Smith Distinguished Speaker: Leonida Guibas, Local-to-Global Methods in Shape Modeling and Physical Simulation
- Computer Game Development Open House
- Informatics Seminar: John Hosking

## Winter Quarter '07

- ACM Panel Discussion: The Need for Internships
- hITEC OCTANE incubator/networking session
- Informatics Seminar: Thomas Herrmann
- Application Mapping for FPGAs with Partial Dynamic Reconfiguration
- ACM Career Expo
- Informatics Seminar: Ken Anderson
- hITEC OCTANE Competition Kickoff
- Informatics Seminar: Thomas Alspaugh
- CS Seminar: Research, Discovery and Prediction: The Many Uses of Topic
- Statistics Seminar: Investigating Psychic Phenomena with Statistics
- Statistics Seminar: Suboptimality of Bayesian Inference When the Model Is Wrong
- Statistics Seminar: Dynamic Matrix-Variate Graphical Models
- Informatics Seminar: Calit2
- ISR Distinguished Speaker: John Canny
- CS Seminar: Efficient Architectural Design Space Exploration via Predictive Modeling
- Bayesian Hidden Markov Modeling of Array-CGH Data
- Sun Microsystems Netbeans Tech Talk
- Google Tech Talk: Test Engineering at Google
- Informatics Seminar: Eric Klopfer
- Vista and .NET Technology Showcase by Avande
- ISR Distinguished Speaker: Brenda Laurel
- CS Seminar: Is the Solar System Really Chaotic?
- Colloquium: Structural Genomics: Target Selection and Assessment, Jinfeng Lui
- Impact of Web 2.0 on IT
- Colloquium: Statistical Failure Diagnosis in Software and Systems, Alice Zheng
- Colloquium: Tapan Parikh, University of Washington
- Faculty Candidate Charles Fowlkes Colloquium: Computer vision for natural scenes and biological images
- Friday Informatics Seminar: Werner Beuschel
- Southern California Computer Science Conference
- Faculty Candidate Yun Song Colloquium: Computational and Mathematical Aspects of Meiotic Recombination
- Sun Microsystems Netbeans Mobility Pack Tech Talk
- Faculty Candidate Donald Metzler Colloquium: Beyond Bags of Words: Effectively Modeling Dependence and Features in Information Retrieval
- Colloquium: Gregory D. Abowd, Georgia Tech
- Faculty Candidate Nilesh Dalvi Colloquium: Managing Uncertainty Using Probabilistic Databases.
- Informatics Seminar: Andre van der Hoek
- CS Seminar: EventWeb

- Faculty Candidate Jianlin Cheng Colloquium: Machine Learning Algorithms for Protein Structure Prediction
- Colloquium: Karrie Karahalios, University of Illinois
- A Short Course for Building Virtual Worlds
- Faculty Candidate Alex Ihler Colloquium: Graphical Models for Estimation in Sensor Networks
- Faculty Candidate Trevor Darrell Colloquium: Visual Recognition and Tracking for Perceptive Interfaces
- Colloquium: Gillian Hayes, Georgia Tech
- Faculty Candidate Julia Hockenmaier Colloquium: Protein folding and parsing
- Informatics Seminar: Paul Dourish
- Faculty Candidate Deva Ramanan Colloquium: Training a computer to see people.
- Project:ICS Showcase
- Faculty Candidate Junfeng Yang Colloquium: EXPLODE: a Lightweight, General System for Finding Serious Storage System Errors
- 2007 RESCUE Distinguished Lecture Series: Scaling Computer Games to Epic Proportions
- Colloquium: Process Migration in Heterogeneous Distributed Environments

## Spring Quarter '07

- Faculty Candidate Xiaohui Xie Colloquium: Deciphering Information Encoded in the Dark Matter of the Human Genome
- A Short Course on Text Mining
- Colloquium: Daniel Avrahami, Carnegie Mellon University
- Faculty Candidate Wei Li Colloquium: ChIP-chip on Genome Tiling Arrays: Towards an Understanding of the Global Transcriptional Regulation
- Informatics Seminar: Bill Tomlinson
- ISR Distinguished Speaker: Colin Ware
- Informatics Seminar: Amaya Becvar
- ISR Distinguished Speaker: Hiroshi Ishii
- Informatics Seminar: Drs. Willie Krenz and Joe Bannister
- Smith Distinguished Lecture: Michael Kearns
- Avande's Technology Showcase
- Molecular Communication: A New Paradigm for Communication Among Biological Nanomachines
- Friday Informatics Seminar: Gloria Mark
- Sun University World Tour
- Department of Informatics Guest Speaker Christine L. Borgman
- ISR Distinguished Speaker: Jeff Magee
- Smith Distinguished Lecture: Judy Olson
- Smith Distinguished Lecture: Gary Olson
- ISR Research Forum & Grad Student Research Symposium
- Informatics Seminar: Gilad Ravid
- Smith Distinguished Lecture: Wojtek Szpankowski



# In the News

Subscribe to the Bren School's RSS (Really Simple Syndication) feed to get news delivered directly to your desktop. To view the Bren School feed in your RSS Aggregator, copy and paste this URL into your reader:

<http://www.ics.uci.edu/community/news/rss/news.xml>

## Press Releases

- » Bren School of ICS to offer graduate degrees in Statistics
- » UCI researchers 'text mine' the New York Times, demonstrating evolution of potent new technology
- » Professor Tsudik Receives Fulbright Scholar Award
- » Bren School to offer Master's degree part time in Naples, Italy
- » Lawrence A. Rowe earns Distinguished Alumni Award
- » Bren School honors graduates at 2007 commencement

## In the News

- » **How wired is too wired?**  
The Orange County Register  
Person Quoted: **Gloria Mark**
- » **UCI computer researchers test new technology**  
The Orange County Register  
Person Quoted: **David Newman**

- » **Cortex interruptus**  
The Sydney Morning Herald  
Person Quoted: **Gloria Mark**
- » **Mining the New York Times with machines**  
Ars Technica  
Person Quoted: **David Newman**
- » **At ZeroOne, Paintings Are So Last Century**  
The New York Times  
Person Quoted: **Beatriz da Costa**
- » **Engaging kids to appreciate habitat restoration**  
Irvine World News  
Person Quoted: **Bill Tomlinson**
- » **'Data miners' at UCI moving beyond Google**  
The Orange County Register  
Person Quoted: **David Newman**
- » **From documents to experiences**  
DevSource  
Person Quoted: **Ramesh Jain**
- » **Shattering stereotypes**  
The Orange County Register  
Person Quoted: **Debra J. Richardson**
- » **Fishes and fitness**  
The Orange County Register  
Person Quoted: **Silvia Lindetner**
- » **Microsoft's A.U.R.A. project - information at your fingertips**  
ZDNet.com  
Person Quoted: **Bill Tomlinson**

- » **The End of the Book?**  
The Orange County Register  
Person Quoted: **Ramesh Jain**
- » **Best and Final Offer Lands Contract**  
Security + Life Safety Systems  
Person Quoted: N/A
- » **Informatics professor interviewed on Second Life Nightly News**  
Second Life Nightly News  
Person Quoted: **Crista Lopes**
- » **Fun with a focus on interaction**  
Daily Pilot  
Person Quoted: **Simon Penny**
- » **Bren Dedicates UCI Computer School Building**  
Orange County Business Journal  
Person Quoted: **Donald Bren**
- » **UCI building dedicated to Bren**  
Daily Pilot  
Person Quoted: **Debra J. Richardson**

*Graduate student Silvia Lindtner discusses Fishes and Fitness.*





# Centers of Excellence

The Bren School is proud to be affiliated with nearly a dozen research centers on the UCI campus. Many of the centers are under the auspices of the School or its faculty.

Organized research programs provide a mechanism and organizational structure within which collective research activities can take place that are fundamentally different from those that occur normally within the schools and departments. They are intended to foster the development of short- and long-term research programs that span disciplines and academic units thereby making it possible for faculty to acquire extramural resources for which they might not otherwise qualify.

**abrc**

ada byron research center for diversity  
in computing & information technology  
uc irvine school of information and computer science



The Ada Byron Research Center for Diversity in Computing and Information Technology (ABRC) – a virtual research center created within the Bren School – studies and promotes diverse access to and participation in computer science, engineering, digital media and related information technology fields.

ABRC is an active participant with the National Center for Women and Information Technology, a coalition of organizations joining forces to ensure that women are fully represented in the influential work of information technology. ABRC serves as the University of California hub of this national effort. [abrc.uci.edu](http://abrc.uci.edu)



The Arts, Computing and Engineering (ACE) program addresses emerging practices and career paths that combine skills and sensibilities of technical and scientific disciplines with arts and humanities. ACE exists at the intersection of Arts, Humanities, Social Sciences, Computer Sciences, Engineering and other disciplines.

The sensibilities of sculpture, installation and performance art, graphics, improvisatory dance, drama and music are central in the production of new cultural forms. Real time computation, robotics and motion control, microcontroller and sensor technologies,

immersive media technologies, computer graphics, networking/telematics, gaming, embedded and wireless technologies are key technical areas. ACE is a partnership between the Bren School, the Claire Trevor School of the Arts, and The Henry Samueli School of Engineering. [www.ace.uci.edu](http://www.ace.uci.edu)



California Institute for Telecommunications and Information Technology (Calit2) is one of four institutes launched in December 2000 through the California Institutes for Science and Innovation initiative. An experiment in inventing the collaborative research environment for the digital future, Calit2 creates research

teams consisting of members from multiple academic departments often across multiple campuses. These teams integrate individuals' deep expertise across a broad range of disciplines to enable more comprehensive studies beyond those led by single principal investigators.

The Institute extends its involvement beyond faculty to students, industry, government, and community partners. "Living laboratories of the future" make it possible to push prototype projects one step beyond academic theory and peer-reviewed publishing to building and testing integrated systems under real world conditions. Calit2 also Provides technical professionals as the bridge between academia and industry to support activity in the living labs. [www.calit2.net](http://www.calit2.net)



The Center for Cyber-Security and Privacy (CCSP) focuses on the importance of security and privacy in our increasingly computerized life is difficult to overestimate. This importance is evident in the prevalence of major news stories about identity theft, privacy-eroding legislation and industry practices, spam, phishing, worms, and viruses.

CCSP aims to develop feasible and effective remedies that are legally permissible and enforceable, and understandable and acceptable for computer users. Building on the efforts of the SCONCE Lab, the CCSP focuses on the following areas: applied cryptography, network security, information assurance, intrusion detection, wireless security, peer-to-peer integrity, computational grid protection, user trust assurance, usability issues in security and privacy, anomaly control in databases, mobile code safety, and privacy enforcement.  
[www.ics.uci.edu/~ccsp](http://www.ics.uci.edu/~ccsp)



The Center for Embedded Computer Systems conducts leading-edge interdisciplinary research in embedded systems, emphasizing automotive, communications and medical applications, and promotes technology and knowledge transfer for the benefit of the individual and society.

Embedded systems are having a profound impact on society as it transitions into the information era. With applications ranging from electronic wallets to information appliances, implanted adaptive insulin pumps, smart automobile air bag systems, and wireless wrist communicators - they are changing the way we live. CECS continually strives to be at the forefront of this exciting product and technology evolution. The Center is a collaboration between the Bren School and The Henry Samueli School of Engineering. [www.cecs.uci.edu](http://www.cecs.uci.edu)

**CML** The Center for Machine Learning and Data Mining address the challenges of the modern data-driven world, using computer algorithms to discover useful information from vast data archives. The applications range across areas as different as web search engines, text mining, spam e-mail filtering, information retrieval, image and video data analysis, sensor networks, astronomy and planetary sciences, ocean and atmospheric sciences, systems biology, medical diagnosis, chemical informatics, and microarray genomics. Huge data repositories, including genomic data, satellite imagery of the Earth, and even Web pages and their hyperlinks, have created unprecedented scientific opportunities and challenges.

Machine learning also has a strong interdisciplinary component. For example within computer science at UC Irvine, researchers in the Center are engaged in collaborations in areas ranging from sensors and ubiquitous computing, to databases and computer vision, to software engineering and Web applications. And projects outside of computer science are also numerous, including automated analysis of brain images, analysis of microarray gene expression data with microarrays, tracking storms in satellite data of the Earth's oceans, and many more.



# Centers of Excellence



The Center for Research on Information Technology and Organizations (CRITO) is one of the world's leading think tanks on the impact of information technology on

organizations and society, and on the management of information technology. CRITO has a rich tradition of studying the impacts of information technology (IT) on organizations and society that stretches back more than two decades. It is home to well over a dozen internationally recognized experts in the fields of management, computer science, and social science, often bringing the advantages of multidisciplinary perspectives to the problems at hand.

Researchers focus on the management of IT, the IT-enabled enterprise, technology-intensive user environments, and the increasingly global nature of IT use and production. They have been consultants to international corporations and government agencies, have published over a dozen books and have won numerous major awards for excellence in their fields. CRITO conducts both academic and applied research.

The Center's core group of investigators is comprised of faculty from The Paul Merage School of Business, the Donald Bren School of Information and Computer Sciences, School of Social Sciences, and the Department of Education.

[www.crito.uci.edu](http://www.crito.uci.edu)



The Center for Pervasive Communications and Computing (CPCC) is dedicated to serving the vision of wearable computers with wireless connections that enable anyone to have continuous voice, video, and data connectivity.

Fueled by the widespread development of the Internet, as well as digital cellular voice service, the vision of voice, video, and data communication anytime, anywhere is becoming closer to reality every day. CPCC researchers help develop the technologies to realize this vision of not only man-to-man but man-to-machine and machine-to-machine communication anytime, anywhere possible.

[www.cpcc.uci.edu](http://www.cpcc.uci.edu)



The Institute for Software Research (ISR) aims to Advance software and information technology through research partnerships. ISR fosters innovative basic and applied research in software and information technologies. Researchers work with established companies, start-ups, government agencies, and standards bodies to develop and transition the technologies to widespread and practical application.

ISR also aims to educate the next generation of software researchers and practitioners in advanced software technologies, while supporting the public service mission of the University of California in developing the economic basis of the State of California.

ISR's research emphases include software, interactive and collaborative technologies, design, ubiquitous computing, gaming culture and technologies.

[www.isr.uci.edu](http://www.isr.uci.edu)



The mission of the UCI Institute for Genomics and Bioinformatics (IGB) is to promote innovation at the intersection of the life and computational sciences. This interface is leading the way in revolutionizing biology, medicine, and society. As part of the revolution, IGB fosters collaborative multi- and interdisciplinary research, institutes major innovative educational programs for computational biologists, and actively transfers research information and technologies through outreach efforts.

IGB investigators collaborate with scientists at UCI and other universities, as well as scientists and representatives of industry and government. Key institute activities include: the Biomedical Informatics Training (BIT) program; the leading and seeding of major inter- and intra-campus research projects; and, the development and public dissemination of extensive software, databases and servers. IGB also takes pride in its innovative approaches to furthering technology transfer from the Institute into widespread use, including the active incubation and development of commercially-relevant research and start-up ideas.

[www.igb.uci.edu](http://www.igb.uci.edu)



LUCI, the Laboratory for Ubiquitous Computing and Interaction, serves as a focal point for research that follows from this vision. Our group of researchers are interested in the challenges of designing, using, and understanding the elements of a ubiquitous computing world. Some of these different facets

include computing in the face of mobile computers and mobile users, understanding and exploring new patterns of socio-technical behavior, and the design and construction of technology which supports ubiquitous computing.

LUCI explore the thought in ubiquitous computing, which predicts that we will each have tens or hundreds of computers -- not just on our desktop, but computers that we carry with us, computers that we wear, and computers that are embedded in our world. These computers will gracefully leave the offices and research labs and move into the larger, uncontrolled, everyday world of people. [luci.ics.uci.edu](http://luci.ics.uci.edu)



The Networked Systems Center (NSC) addresses the need for computing devices to communicate and interact has exploded: consider internet communications such as web surfing, e-commerce, e-mail, and chat; teleconferencing; transportation networks; and all kinds of defense vehicles and devices.

The last decade has seen an explosion in the number and types of computing devices: laptop and desktop PCs, wireless phones, PDAs, vehicles (planes, trains, and automobiles), appliances, sensors, and even the buildings where we live and work. We see a future in which all kinds of these intelligent devices are networked. Our vision is to advance the science and technology of networking to meet the challenges of this future.

NSC goals are to facilitate research on large-scale problems with integrated solutions by providing shared infrastructure for collaborations between research groups; promote synergistic research between academia and industry, both educating and learning from the rest of the networking community; and support the public service mission of the University of California in developing the economic basis of the State of California.

[www.networkedsystems.uci.edu](http://www.networkedsystems.uci.edu)



# Student Affairs

## About Student Affairs

The Student Affairs Office (SAO) is staffed by nine professionals and several peer advisors who are committed to the success of our students, guiding them through important milestones and encouraging their timely progress to graduation. In a typical year, SAO has approximately 3,600 advising contacts with undergraduates and 1,200 with graduate students.

Additionally, SAO hosts numerous special events for prospective and current students, fosters student leadership and campus involvement, and encourages community among School faculty and student scholars. These efforts contribute to the School's goals of attracting, retaining and graduating students whose accomplishments while at UCI – and later – reflect the quality and scope of their Bren School of ICS education.

### 2006-07 Students by the Numbers

	Enrollment <sup>1</sup>	Agerage Test Scores <sup>2</sup>
<b>Undergraduates</b>		
Bachelor of Science	855	588 Verbal
Minor	40	651 Math
		585 Writing
<b>Total</b>	<b>895</b>	<b>1824</b>
<b>Graduates</b>		
Master of Science	60	540 GRE Verbal
Doctor of Philosophy	209	763 GRE Quantitative
<b>Total</b>	<b>269</b>	<b>1303<sup>3</sup></b>

<sup>1</sup>Three term average for 2006-07.

<sup>2</sup>Based on cumulative maximum SAT score of 2400 for new freshmen entering Fall 2006.

<sup>3</sup>Based on cumulative maximum GRE score of 1600 for new graduate students entering Fall 2006.

## Highlights for 2006-07

Student Affairs hosted many programs and events that addressed the varying needs of students at different points in their educational progress. From programs for newly admitted students to those who are about to graduate, the aim is to provide information, facilitate networking and build community. The SAO staff also provided administrative support to the Associate Dean for Student Affairs in curriculum review and development.

Below is a list of highlights from the 2006-07 academic year for prospective, newly admitted, and continuing undergraduate and graduate students in the Bren School.

### Graduate Activities

- » New Student Matriculation and Orientation
- » ACE Orientation
- » TA Training and Orientation
- » Dean's Lunch/BBQ
- » Grad Student/Faculty Wine and Cheese Mixers (quarterly)
- » Assisted in development of Graduate Brochure
- » Graduate Admissions
- » Graduate Recruitment Incentive Grant
- » Grad Visit Day
- » Commencement

### Undergraduate Activities

- » Dean's Welcome
- » Transfer Student Welcome
- » Success Strategies Workshop
- » ICS/Campuswide Honors Experience
- » First Annual So. CA Computer Science Conference (High School outreach)
- » ICS Faculty Forum (No. CA Community College outreach)
- » Destination UCI for newly admitted students (Northern CA)
- » Experience ICS/Experience CSE Days (classroom visits)
- » Explore UCI 2007
- » ICS High School Scholars Day
- » ICS Transfer Scholars Day
- » ICS Honors and Awards Banquet
- » Food for Thought Bags (finals, each quarter)
- » Commencement



*Professor of computer science Ian Harris with at the new student welcome pizza social.*



# Bren School Alumni

## About the Bren School Alumni Chapter

2006-07 Officers:

President	Farshad Farhand '94
Vice President, Connect	Mark Bryant '82
Vice President, Engage	Jesse Hsia '05
Vice President, Serve	Eric Smith '96

The Bren School Alumni Chapter welcomes alumni interested in leadership and volunteer roles. In addition to networking and alumni outreach, the chapter offers opportunities to get involved with Bren School student groups. To get involved, e-mail [alumni@ics.uci.edu](mailto:alumni@ics.uci.edu).

Be sure to check out the Alumni Chapter blog for the latest news and events: [alumni.ics.uci.edu](http://alumni.ics.uci.edu).

developing an idea into a viable product. To find out about the competition, visit the Web site at <http://www.ics.uci.edu/hitec> or contact Lara Farhadi at [lfarhadi@uci.edu](mailto:lfarhadi@uci.edu).

### ICS Alumni Mentor Program

Each Fall quarter, ICS offers its alumni the opportunity to get involved with current students through the ICS Mentor Program. Students are able to select mentors from a diverse pool of alumni. Mentors and students are matched for the duration of the academic year, with the hope that both alumni and students will be able to form long-lasting relationships. Additional information is available online at <http://www.ics.uci.edu/mentor>.

### Career Events

Alumni are always welcomed back to campus for Career Events that range from the UCI Career Center's annual Career Fest panels, to conducting workshops with one of the several student groups at ICS. If you are interested in this type of program, please email [alumni@ics.uci.edu](mailto:alumni@ics.uci.edu).

### UCI Alumni Association

The UCI Alumni Association strives to enrich the lives of UCI alumni and engage them in a lifelong advancement of the university. Members make a difference in the tone and vitality of the organization. Founded in 1968, the association seeks to provide alumni with a lasting bond to the university. Not a member yet? Information on membership, benefits and alumni events can be found online at <http://www.alumni.uci.edu>.

## Bren School Alumni Sponsored Programs

### Mentoring Program

The alumni mentoring program matches Bren School alumni with current students. Similar career goals, shared interests or common academic backgrounds provide the foundation for the student/mentor relationship.

[www.ics.uci.edu/community/alumni/mentor](http://www.ics.uci.edu/community/alumni/mentor)

### Opportunities for involvement

There are many opportunities for involvement with ICS, both for those who like to commit to long-term program, and those who have limited time and prefer to commit to programs that are easier to fit into their busy every-day schedule.

### HITEC – the ICS Technology and Entrepreneurship Competition

The annual student product development competition focuses on the creation of new products that have potential for commercialization. Teams of students are paired with alumni and industry mentors who understand the process of

## Alumni by the Numbers

5,370	Bachelors of Science
951	Masters of Science
345	Doctors of Philosophy



# By the Numbers

## 2006-07 Quick Facts

Total allocation (all fund sources):	\$29,327,824
Total expenses:	\$18,557,848
Number of Contracts and Grants processed:	44
Total of Contracts and Grants processed:	\$16,873,731
Contract and Grant expenditures:	\$4,407,202
Contract and Grant funds received:	\$13,424,098
Number of processed/audited reimbursements or payment requests:	1,905
Total of processed reimbursements or payment requests:	\$1,451,820

## Bren School Facility Overview

ICS 1	24,416
ICS/Engineering Research Facility	9,954
Computer Science 2	9,731
Computer Science/Engineering	6,681
Donald Bren Hall	89,000

(in assignable square feet)

## Computing at a Glance

- 500+ workstations available for instructional use
- 24-hour remote computing access for students
- 12 special-purpose labs
- Wireless access available throughout the Bren School complex

## Faculty & Staff

63	Professors
5	Emeriti Professors
14	Technical Staff
30	Professional Staff
11	Administrative Staff
29	Postdoctoral Scholars and Researchers
14	Lecturers
16	Visiting Scholars
117	Teaching Assistants
366	Graduate Student Researchers
84	Readers

## Current Recruitments

The Bren School of ICS has a number of faculty, staff and research positions open throughout the year.

We also provide information for students and alumni that are in the market looking for part time, full time and internship opportunities within the computing industry.

### Distinguished Faculty

A recent endowment gift will allow the accelerated recruitment of leading scholars to fill distinguished professor position(s). For more information visit the distinguished faculty positions page.

### Faculty

The faculty of the school are of national and international renown, giving us a unique blend of distinguished scholars and talented young researchers to lead our growing program. For more information on how you can join our growing community of scholars visit the faculty positions page.

- » Assistant or Associate Professor, Organizational Studies of Information Technology, Department of Informatics - Tenure Track
- » Assistant or Associate Professor, Software Engineering, Department of Informatics - Tenure Track
- » Assistant or Associate Professor, Medical/Health Informatics Department of Computer Science - Tenure Track
- » Assistant or Associate Professor, Bio-Medical Informatics, Computational and Systems Biology, Chemical Informatics - Tenure Track
- » Associate or Full Professor Biostatistics Faculty Position - Tenure Track

Find out more about our current faculty recruitment at:

[www.ics.uci.edu/employment](http://www.ics.uci.edu/employment)

### Lecturer

Lecturers support the teaching mission of the school and serve in an invaluable role of educating tomorrow's technology leaders.

### Research

Our faculty occasionally recruit top researchers to assist them with their innovative research projects.

### Staff

Consider a career at the Bren School of ICS, we are continually searching for qualified individuals to join our diverse and dynamic staff. To review current open staff positions and apply online, please visit UCI's Job Website at [www.hr.uci.edu](http://www.hr.uci.edu).





# Bren School Development

## Friends of the Bren School

As public funding for our state's universities declines and the costs and risks of corporate research and development escalate, there is increasing motivation for forging bonds between academia and industry. The Bren School is research oriented - even at the undergraduate level - with formal projects addressing hardware, software, algorithm design, artificial intelligence and the societal impacts of computing.

Research orientated education means Bren School students arrive at companies already comfortable on the leading edge and poised to make an immediate impact. In addition to students, our world renowned faculty work with outside companies and frequently collaborate with professionals in other academic areas to create even greater synergy. This results in a combination of corporate insight, faculty guidance and student energy that has proven time and again to be the spark that ignites tomorrow's products and services.

In 2006-07, the Bren School development office raised over \$1 million in individual and corporate donations (in addition to the \$13 million in contract and grant funds collected by faculty, students and project scientists).

The Bren School programs listed below offers individual and corporate donors an opportunity to interface with our students and faculty.

### PROJECT:ICS

Through this in-class internship program, your company can augment its IT staff for a 10-week period partnering with a dynamic, senior-level team of Bren School students to start, develop or complete an existing technology project.

### hITEC

The ICS Technology Entrepreneurship Competition (hITEC) is a student competition designed to encourage the development of new products by UCI undergraduate and graduate students. hITEC, formerly *Extreme Computing*, offers you a chance to mentor a team of students as they develop a new product and attempt to enter it into the marketplace.

### Scholarships and Fellowships

Support a student by sponsoring a scholarship or fellowship. In forging relationships with the students they support, current donors have discovered that Bren School students are more than scholars, they also are community volunteers, dedicated youth leaders, responsible young adults and promising future professionals.

## CORPORATE DONORS

### \$100,000+

Cisco Systems, Inc.

### \$50,000 - \$99,999

D-Link Systems, Inc.  
Hitachi America, Ltd.  
IBM Corporation  
Intel Corporation  
Mozilla Corporation  
School Broadcasting Company

### \$25,000 - \$49,999

Google, Inc.  
Merit/Andrew  
Microsoft Corporation  
WebReach, Inc.

### \$10,000 - \$24,999

California Community Foundation, Inc.  
Conexant Systems, Inc.  
Lanier Worldwide, Inc.  
Printronic, Inc. Global Printing Solutions  
The Beall Family Foundation

### \$5,000 - \$9,999

Springer SBM LLC  
The Aerospace Corporation  
Troxell Communications, Inc.  
Tustin Irvine Medical Group

### \$2,500 - \$4,999

Abroadcasting  
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# Honor Roll of Donors

## Bren Hall, New Home to ICS Formally Dedicated

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More than 400 alumni, community and campus guests celebrated the opening of Donald Bren Hall June 20, 2007. ICS was on display as bold innovations in information and computer sciences were showcased when the Bren School opened the doors to Donald Bren Hall with a ribbon cutting and dedication ceremony.

Donald Bren, Dean Debra J. Richardson and Chancellor Michael Drake participated in the ceremonial ribbon cutting, toured the building's laboratories and reviewed faculty and student research. Other distinguished guests joining in the activities were Brenda Drake, Assemblyman Todd Spitzer, Orange County Supervisor Bill Campbell and Irvine Mayor Beth Krom.

An open house followed the dedication ceremony. Guests were treated to hors d'oeuvres with a different ethnic cuisine served on each floor. Interdisciplinary research laboratories were open for demonstrations of the school's various projects and centers of excellence. Many of the sessions were hand-on, inviting active participation, and featuring how ICS has a global impact on everyday lives.

High-tech projects representative of the wide breadth of ICS-conducted research and its impact were displayed on 42" LCD monitors hung in numerous locations throughout the six-floor building. The <number of inches> high-tech screen that is prominently located in the first floor lobby featured pictures of alumni and community friends of the Bren School. Those who were unable to make the trip to UC Irvine were able to tour



*Associate Professor Eric Mjølssness presents his exhibit on the Computable Plant to community members at the Bren Hall Dedication and Open House event.*

the building by creating a "Second Life" avatar on "TechCoast."

The school and building were named in honor of The Irvine Company Chairman, Donald Bren, whose \$20 million gift bolstered the school's efforts to become a top-ten computer science program and supports ICS faculty through endowing chair positions.

The event can still be relived through photos and videos online: <http://www.ics.uci.edu/dedication/>.



# Honor Roll of Donors

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# The Year in Pictures

This page (left to right): Associate Dean Michael Goodrich, Ted and Janice Smith at ICS' annual New Year's reception; Robert Olsen and Abishek Amit earned first place honors as freshmen in the Extreme Computing competition (renamed hITEC for 2007); Robert Kliest, founder and CEO of Printronix addresses the Class of 2006.

Opposite page (clockwise): The Bren School awarded over 250 Bachelors, Masters and Doctoral degrees in June 2006; Associate Professor of Informatics André van der Hoek hoods Emily Navarro; Tam Dang Phan, Lu Qian Zheng, Ray Ray Shen and Elizabeth Kim placed second at University of Illinois' Games 4 Girls competition; Donald Bren Hall under construction; Students demonstrate their project at the first annual Project ICS Showcase; AmberPoint CTO Paul Butterworth '74, MS '81 receives the UCI Alumni Association's Distinguished Alumnus Lauds and Laurels Award from UCIAA President Steve Capps and Executive Director Jorge Ancona.



# Annual Report 2006-07

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**Campus Safety.** Pursuant to the Federal Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act of 1999, UCI annually makes available to all students, faculty, and staff (at [www.police.uci.edu/jeanneclery.html](http://www.police.uci.edu/jeanneclery.html)) statistics on the reported crime that occurred on campus and at the UCI Medical Center.

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