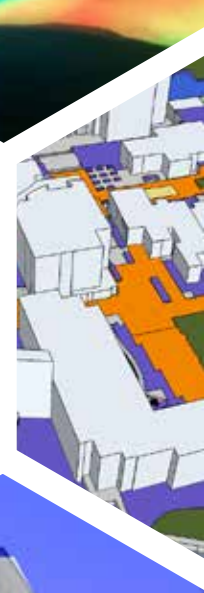
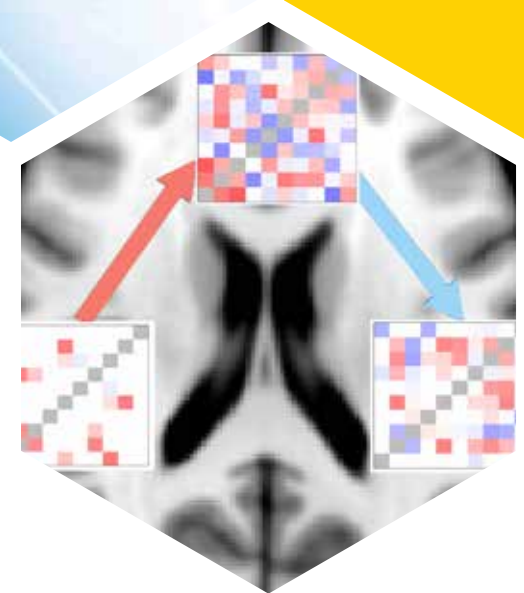
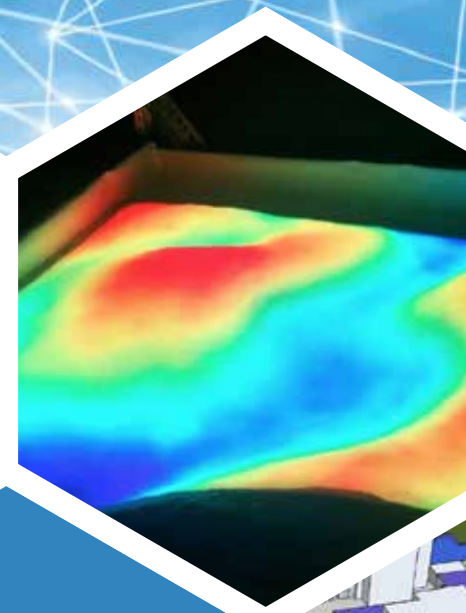


UCI Donald Bren

School of Information & Computer Sciences



ANNUAL REPORT

FALL 2016



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FALL 2016 ANNUAL REPORT

The Annual Report is published in the fall by the Donald Bren School of Information and Computer Sciences' Office of Communications.

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From the Dean

This year's Annual Report is my last as dean. I will be returning to the teaching and research faculty in the Department of Statistics in January 2017. It has been a pleasure to serve as the Ted and Janice Smith Family Foundation Dean for the Donald Bren School of Information and Computer Sciences (ICS) for the last six years. In that capacity, I've been honored to represent our faculty, staff, students and alumni as we provide technology leadership for the 21st century through outstanding and impactful research, innovative educational programs and curricula, and interdisciplinary collaborations and partnerships aimed at solving societal problems. Following an extensive search, I'm pleased to introduce Professor Marios Papaefthymiou from the University of Michigan, who will take over as the third dean of ICS in January. You can learn more about the new dean and his vision for ICS on Page 14.

Reading through this year's Annual Report, the underlying theme is growth. Our continued growth can be seen in the number of students, alumni, faculty, programs and accomplishments coming from ICS. For instance, this fall kicks off the first of two new professional master's programs offered by ICS. The Master of Human-Computer Interaction and Design welcomed its first cohort this fall, with the Master of Computer Science accepting applications now to begin in fall 2017. These two new graduate programs provide an opportunity for recent graduates or veteran alumni who are looking for a more flexible, hands-on program that will give them an edge in the workforce. You can learn about the two new programs on Page 4.

We continue to experience tremendous growth in our student enrollment numbers, closing in on 3,000 combined undergraduate and graduate students. Computer Science is now the fourth most popular undergraduate major at UC Irvine. Our active ICS alumni network is now more than 9,000 strong and we are increasing our outreach

efforts to stay connected with them—holding alumni receptions in San Francisco, New York City and Orange County over the last year.

Of course, the real strength of ICS is in its research. Without our world-renowned faculty, we would not be able to attract the quality of students that we do or produce the successful alumni who become tomorrow's technology leaders. The pages of this Annual Report touch on only some of the amazing faculty accomplishments from the last year, including Michael Franz and Paul Dourish both becoming UCI Chancellor's Professors and ACM Fellows; Crista Lopes becoming the first woman awarded the Antonio Pizzigati Prize for Software in the Public Interest; and Mike Carey receiving the prestigious IEEE Technical Committee of Data Engineering Computer Science, Engineering and Education Impact Award. ICS has also added a number of new faculty, both recognized leaders in their field and up-and-coming researchers, over the last year in order to keep up with the growing number of students and to diversify our research portfolio. You can read about our new faculty on Page 16.

We have come a long way in the almost 50 years since we first started as a department and nearly 15 years since ICS has been operating as an independent school. I'm proud to have been part of that growth as a professor, chair and dean, and to remain part of such a dynamic, cutting-edge environment that continues to explore the ways technology can revolutionize the world around us.

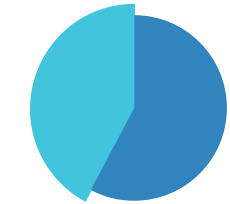


Hal Stern
Ted and Janice Smith Family Foundation Dean
icsdean@ics.uci.edu

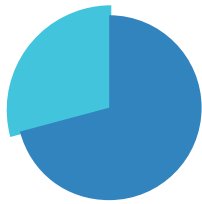


ICS: By the Numbers

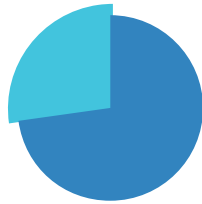
FALL 2015 INCOMING FRESHMEN



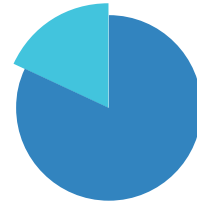
42%
First-Generation
College Students



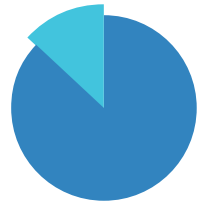
29%
Females
(Up from 23%
in Fall 2014)



27%
From Low-
Income Families



18%
Underrepresented
Minorities
(Hispanic, Black, American
Indian/Alaskan native)



13%
International
Students

402 Total Freshmen with an average GPA of **4.04**

#17 out of **500** influential U.S. computer science schools on Semantic Scholar Insights' list

2015-16 RESEARCH

\$7.7 Million

Total Research Extramural Expenditures
(74% Government Awards/26% Industry Awards)

172

Total Active Awards

72

New Proposals Submitted

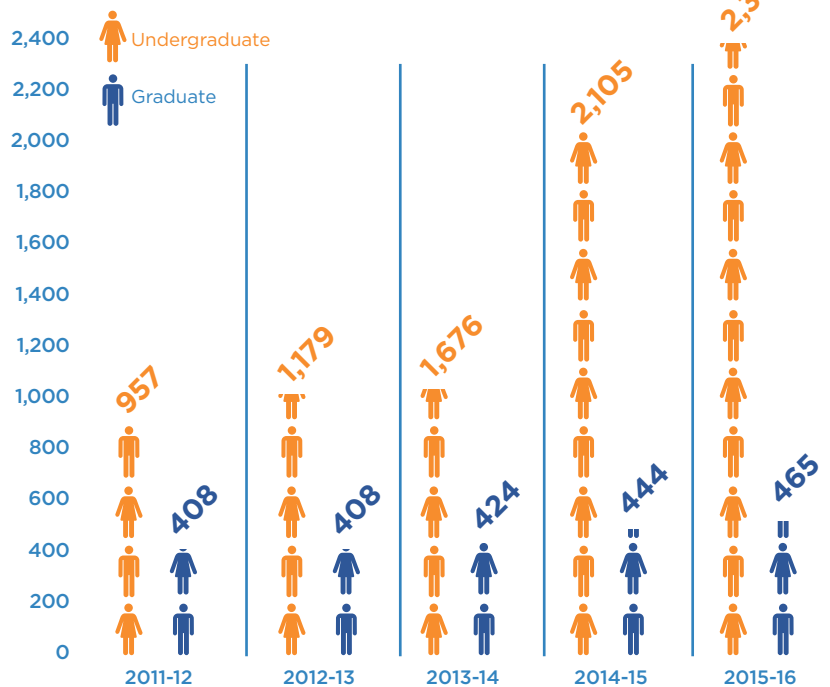
26

New Active Awards

\$9.8 Million

New Active Award Total Budget

STUDENT ENROLLMENT

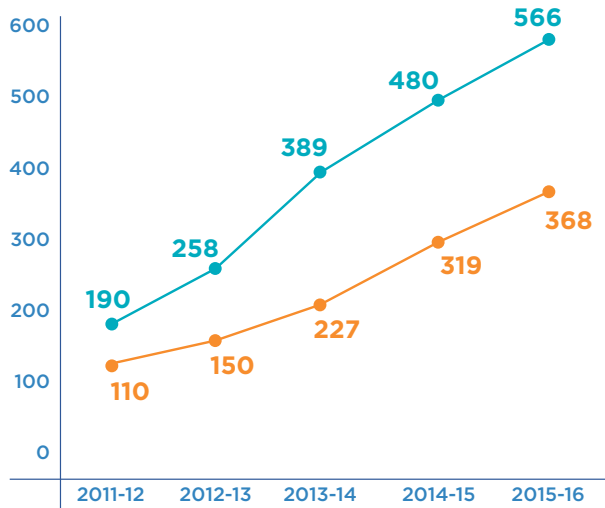


* 147% increase in undergraduate enrollment over 5 years

Computer Science **4th** most popular UCI major

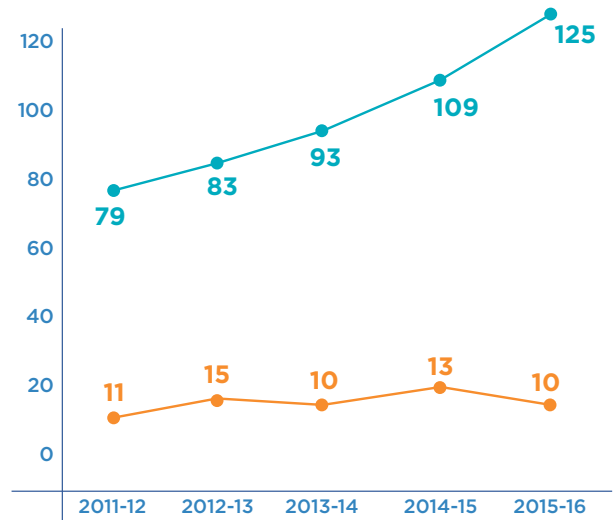
UNDERGRADUATE DIVERSITY

- Number of Female Undergraduate Students
- Number of Undergraduate Students from Underrepresented Minorities



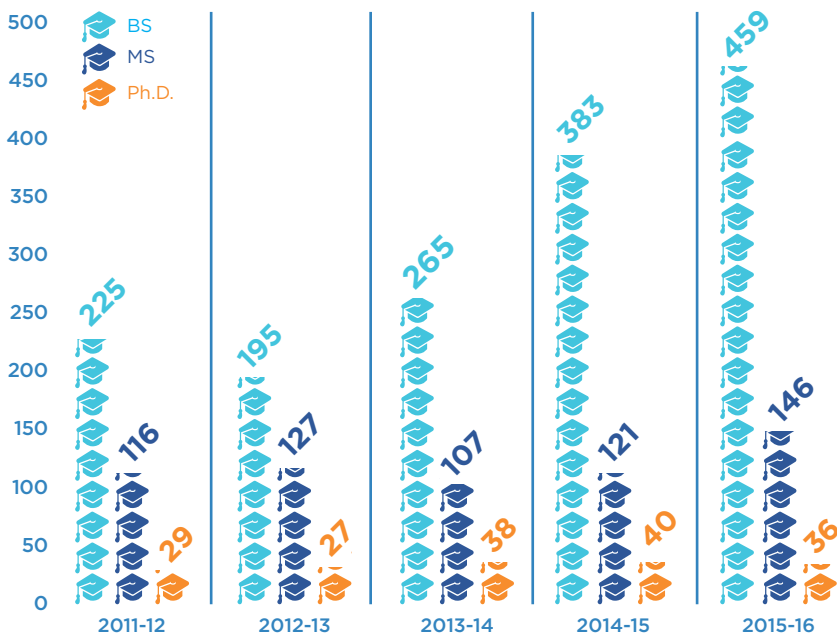
GRADUATE DIVERSITY

- Number of Female Graduate Students
- Number of Graduate Students from Underrepresented Minorities



One of the **TOP 30** Best Computer Science Programs in the World
 (2015 Academic Ranking of World Universities by the Center for World-Class Universities at Shanghai Jiao Tong University)

DEGREES GRANTED



7th among Top 10 West Coast Game Design Schools
 and **8th** among the Top 25 Public Game Schools
 (Animation Career Review, 2016)

FACULTY BY DEPARTMENT

49
Computer Science

24
Informatics

11
Statistics



Strengthening Skill Sets, Expanding Industry Ties

ICS introduces new professional master's programs in Human-Computer Interaction & Design and Computer Science.

Looking for a career that offers high pay, flexibility and the increasingly elusive prospect of a work-life balance? According to a 2015 list of the “25 Best Jobs for Work-Life Balance” by career rankings and review website Glassdoor, you’d be wise to pursue careers with underpinnings in technology, including user experience (UX) design, web development, computer programming and software engineering.

At the Donald Bren School of Information and Computer Sciences, the skills to bolster one’s preparation for jobs in UX and computer science are more accessible now than ever thanks to two new professional master’s degree programs: the Master of Human-Computer Interaction and Design (MHCID) and the Master of Computer Science (MCS). Both programs will offer opportunities to engage in projects with industry partners and allow students to attend while remaining in the workforce.

MHCID: MASTERING UX

Tailored to budding UX professionals or those looking to foster a career in the field, the MHCID is the newest degree offering from the Department of Informatics. The only mixed format—a blend of in-person and remote learning with group and individual work components—program of its kind, students can complete the MHCID degree in as little as one year while continuing to work. The program features a diverse faculty base, allowing it to focus on UX research and design, interaction design, information architecture, product design, and human-computer interaction.

“Our master’s program is a hybrid, where we want to give students the high-quality experience of in-person learning with the flexibility of distance,” MHCID Director and Robert A. and Barbara L. Kleist Professor of Informatics Gillian Hayes says of the program.

With an intensive, accelerated schedule, Hayes and the rest of the informatics team settled on making the program low-residency. “We thought, ‘How can we best design a program that would meet the needs of future professionals?’ With our program, we get the best of having people here doing intensive in-person work together, but we also allow students to develop learning-at-a-distance skills,” she says.



◀ MHCID Director Gillian Hayes (right) interacting with graduate students from the Department of Informatics in the classroom.

Built from the ground up, the MHCID program brings together the expertise of multiple departments on campus, including arts and education. Founding faculty members include Donald Bren Professor in Informatics and Business Judy Olson and former Associate Professor of Informatics Don Patterson. “We’re

of the UX field will still have the chance to develop a professional project. Hayes anticipates that the capstone project course will serve as a pathway to employment for many students, as is the case for other capstone project courses throughout ICS. “We find that employers really want people who are team-oriented and who are comfortable with ambiguity, which is great because it’s our first year so everything is a little ambiguous. We also find that people want to take risks and learn to learn, or figure things out on their own,” Hayes

“Within the next 10 years, we hope to have 300 to 500 of the top UX professionals in the world who are now in major positions and want to turn around and help mentor our undergraduate and graduate students.” —Gillian Hayes, MHCID director and Robert A. and Barbara L. Kleist Professor of Informatics

trying to leverage all of the strengths of the campus and add back to the community,” Hayes notes.

With MHCID, students can expect a program that meets them where they’re at in their careers. And with the capstone project course requirement, students who are already employed in the field will have the opportunity to tailor their projects to their employers’ needs. Thanks to the program’s Industry Advisory Board, which includes UX professionals from companies such as Google, Airbnb, Intel and Bloomberg, students who are not yet members

says. “These are the kinds of skills we see people excel with in their professional careers, and the kinds of students we’re going to try to find for the program.”

Ultimately, the MHCID program will usher in a new wave of UX education and industry relationships at UC Irvine. “Within the next 10 years, we hope to have 300 to 500 of the top UX professionals in the world who are now in major positions and want to turn around and help mentor our undergraduate and graduate students,” Hayes adds.



◀ The first MHCID cohort began its studies in fall 2016 with a week-long orientation and accelerated course.

Amelia Regan, computer science professor and lead MCS faculty member.

While the existing M.S. program has a strong academic research orientation, the new MCS degree will offer students looking to foster careers in industry a new pathway. “The courses

The first MHCID cohort began its studies in fall 2016. For more information on the MHCID program, visit <http://mhcid.ics.uci.edu> or email mhciddirector@ics.uci.edu.

will be much more project- and teamwork-oriented. They will have very active labs and discussion sections where students will be working on projects. It’s much more hands-on,”

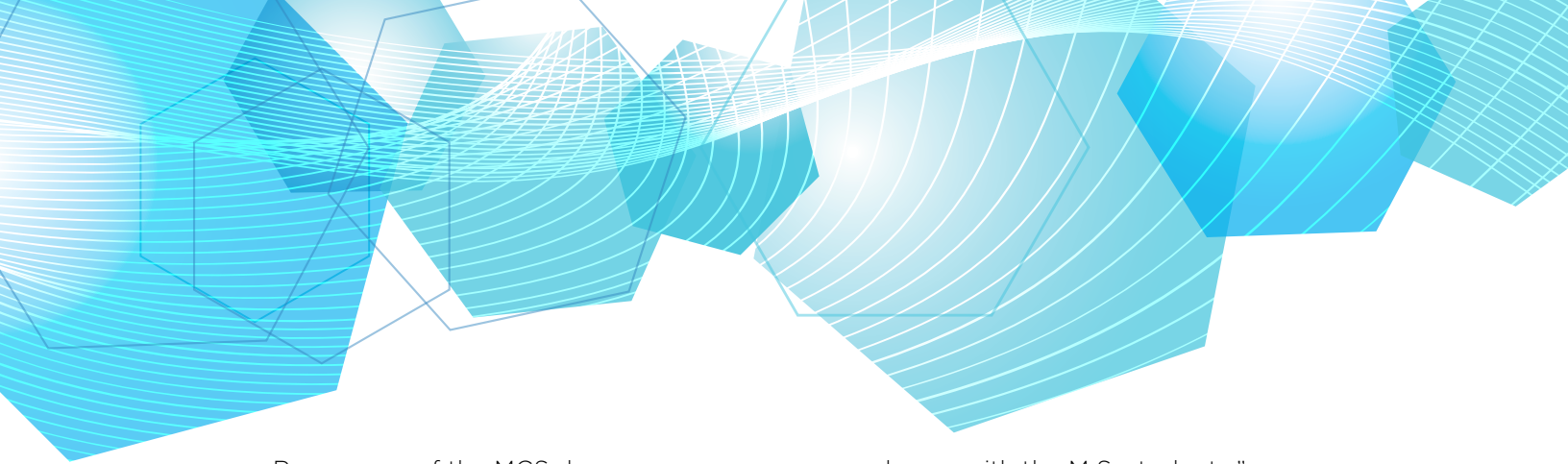
“By providing our students with the best possible educational experience, we will also strengthen our ties to industry through our relationship with these students.”

—Amelia Regan, lead MCS faculty member and computer science professor

MCS: MASTERING COMPUTER SCIENCE

Looking to better serve a variety of graduate students, the MCS offers a practical, hands-on education designed to prepare students for an industry career in a variety of computer science domains. The Department of Computer Science’s new MCS degree, coupled with its existing M.S. in Computer Science program, will allow the school to “better meet the needs and desires of its students,” according to





Regan says of the MCS degree.

The professionally oriented program, co-led by Chancellor's Professor of Computer Science Michael Goodrich, is anticipated to offer a close-knit, interactive educational experience to its students. Most courses will be project-based, capped at 60 students, and each course will include a teaching assistant and reader. Students can finish their degrees in four quarters—about one calendar year—including a summer internship component. Those who have already worked in the field can forgo the internship and potentially finish the degree even sooner.

With more specialized degree offerings and support, Regan anticipates a ripple effect on the department's other graduate programs. "We hope to provide a better educational experience for all of our master's students and, by extension, a better educational experience for our Ph.D. students who are in the research-oriented

classes with the M.S. students," she says.

The first cohort of MCS students is anticipated to begin in fall 2017. "We hope to attract a range of students. Most students will have a background in computer science, but we will be open to accepting well-qualified students from other types of engineering and science programs, like physics, chemistry or biology, and business programs if they have the appropriate technical skills," says Regan.

The MCS program will make a targeted effort to recruit underrepresented students with the help of the ICS Office of Access and Inclusion, a shared office with UC Irvine's Samueli School of Engineering. Full-time domestic students also have the potential to receive up to 50 percent fellowships based on their financial need.

Like the MHCID program, the new MCS program will expand industry ties for ICS. A capstone project course will allow students to interface directly with industry partners. "By providing our students with the best possible educational experience, we will also strengthen our ties to industry through our relationship with these students," Regan adds.

For more information on the MCS program, visit www.cs.uci.edu/mcs or email mcsdirector@ics.uci.edu.



◀ *The Department of Computer Science held a Computer Science Research Showcase in June to give its graduate students an opportunity to highlight their hands-on research and accomplishments for the ICS community.*

Department of Computer Science



With almost 50 faculty members, more than 300 graduate students and nearly 2,000 undergraduates, the Department of Computer Science continues to provide a world-class research environment that goes well beyond the core areas of computer science.

Our curricula and research focus on an array of topics, including computer architecture, system software, networking and distributed computing, data and information systems, the theory of computation, artificial intelligence, and computer graphics. But we also explore highly interdisciplinary topics such

as biomedical informatics, data mining, security and privacy, and ubiquitous computing.

The diverse research interests of our faculty, which are demonstrated in this Annual Report, are reflected directly in our educational programs. Our esteemed faculty members teach most of the undergraduate and graduate courses for the degree programs in computer science. With our colleagues in The Henry Samueli School of Engineering, we offer a joint undergraduate degree in computer science and engineering, as well as a graduate program in networked systems. Our department collaborates with many other institutions in the United States and abroad, and our door is always open to a multitude of visitors and collaborators from all corners of the globe.

We are also excited to be launching our new professional Master of Computer Science program next fall, which you can read about on Page 4. The program, spearheaded by Professors Amelia Regan and Michael Goodrich, will provide a hands-on, interactive experience for students looking to bolster their careers.

I invite you to explore some of the highlights of the cutting-edge work our department's faculty have performed in the past year in the pages of this Annual Report.

Alex Nicolau
*Professor and Chair
Department of Computer Science*

2015-16 RESEARCH

Total Research Expenditures

\$4.9 Million

Expenditures from
Government Awards

70%

Expenditures from
Industry Awards

30%

Total Active Awards

92

New Proposals Submitted

36

New Active Awards

12

FACULTY HIGHLIGHTS

Marco Levorato was named a Hellman Fellow for the 2016-17 academic year. The prestigious fellowship recognizes early career faculty members who show tremendous promise in their field and helps to support their scholarly endeavors with up to \$50,000 in funding. Levorato will use his fellowship to support his Internet of Things (IoT)-related project that aims to test out a “Smart City” concept where citizens are empowered with the ability to provide direct feedback on services, neighborhoods and infrastructure; thus, creating a virtuous cycle between technology, citizens and the city as a whole.



Michael Franz, a newly appointed UCI Chancellor’s Professor, has been recognized as both an ACM Fellow and IEEE Fellow for his contributions to just-in-time compilation, optimization and compiler techniques for computer security. Franz was also recently awarded nearly \$500,000 by the National Science Foundation (NSF) for a project that investigates practical cyber defense strategies based on synthesizing hybrid defenses; such strategies have the potential to achieve more than the sum of the individual components and have lower overhead than traditional layered security solutions. This most recent NSF award brings his cybersecurity research funding over the last few years to more than \$4 million.



AsterixDB—the multi-school effort to build a highly scalable data management system that can store, index and manage semi-structured data—has officially become an Apache project. The Apache Software Foundation is a highly regarded nonprofit organization with the mission of providing open-source software for the public good. The AsterixDB system, now dubbed Apache AsterixDB, was co-developed by faculty, researchers, staff and students primarily at UC Irvine and UC Riverside, including UCI Professors **Michael Carey** and **Chen Li**.



The Department of Homeland Security, under a subcontract of the Hughes Research Laboratories, has awarded **Gene Tsudik** \$300,000 for his project, “Secure Remote Attestation and Over-the-Air Software Updates for CPS (Cyber-Physical Systems).” The three-year project will focus on software and hardware co-design for the security of automotive IoT and CPS components. The research specifically aims to develop techniques to mitigate remote malware and physical side-channel attacks.



Harry Xu is developing a novel approach to counter software runtime redundancies and performance-blocking inefficiencies—known as “software bloat”—thanks to funding from the Office of Naval Research.



Aditi Majumder and **Chen Li** received \$115,000 from the U.S. Army Research Laboratory (ARL) to work on hardware and software frameworks for real-time large-scale data analytics along with ARL researcher Simon Su. The goal of this project, which is slated to begin in 2016-17, is to study how to explore, analyze and visualize large amounts of digital information in real time by utilizing the AsterixDB data management system in the back end and a multi-projector display at the front end.



Michael Carey has received the IEEE Technical Committee of Data Engineering (TCDE) Computer Science, Engineering and Education Impact Award, which is only awarded to one researcher annually to recognize database researchers who have a broad-reaching impact in fields beyond data engineering, like computer science, engineering or education.

Department of Informatics



It has been a terrific year for the Department of Informatics. On the heels of Sam Malek, Kai Zheng and Darren Denenberg joining our faculty last year, this year we welcome Bonnie Ruberg, Aaron Trammell and Rebecca Black. Bonnie (Ph.D., 2015, UC Berkeley) and Aaron (Ph.D., 2015, Rutgers) join us after serving as Provost Postdoctoral Scholars at the University of Southern California. Their research on issues of gender, ethnicity and sexuality in digital cultures could not be more relevant to today's IT industry. Rebecca joins us from the School of Education at UC Irvine; her research

on digital media and education is deeply in line with the department's mission to help society.

Our department continues to leave a mark on our community as well, with several of our faculty being internationally recognized for their accomplishments this year: Paul Dourish was named an ACM Fellow, Crista Lopes was awarded the Pizzigati Prize for Software in the Public Interest by the Tides Foundation, Jim Jones received the ACM SIGSOFT Impact Paper Award, and Gary Olson received the SIGCHI Lifetime Service Award. These recognitions demonstrate the extraordinary faculty and students we have in informatics.

We are also thrilled to have final approval for our new Master of Human-Computer Interaction and Design, which is featured on Page 4. Aimed at the working professional, the program builds on the department's tremendous expertise in HCI and design with an innovative set of online courses anchored by several intensive on-campus visits.

As the Department of Informatics continues to pursue a number of exciting initiatives, I encourage you to follow us on Facebook ([UCI.Informatics](#)) and Twitter ([UCI_Informatics](#)) to stay in touch.

André van der Hoek
Professor and Chair
Department of Informatics

2015-16 RESEARCH

Total Research Expenditures
\$2.3 Million

Expenditures from
Government Awards
87%

Expenditures from
Industry Awards
13%

Total Active Awards
48

New Proposals Submitted
28

New Active Awards
12

FACULTY HIGHLIGHTS

Gillian Hayes received one of only three Advanced Research Fellowships awarded by the Jacobs Foundation, a charitable organization that aims to benefit future generations through its support of research on child and youth development. The three-year fellowship provides nearly \$400,000 for Hayes' project, "Inclusive and Evidence-Based Technologies for Child and Youth Development," which seeks to understand how to involve children, young adults and their caregivers in creating technologies that are evidence-based, empowering and supportive of child and youth development.



Sam Malek received a \$1 million grant from the Air Force Office of Scientific Research for his project, "RASS: Resilient Autonomic Software Systems." The three-year project is a collaboration between UCI and George Mason University. The RASS project aims to develop a revolutionary new approach to mission support software (MS2) systems used by the United States Air Force, as well as by other areas of the Department of Defense and the Department of Homeland Security. The project is focused on monitoring, organizing and dynamically adapting these software systems so that they continue to operate effectively under conditions of system impairment.



Crista Lopes won the Antonio Pizzigati Prize for Software in the Public Interest from the Tides Foundation, a social justice and sustainability-focused organization. The prize, which includes a \$10,000 cash grant, is given annually to a leader in open-source software development who has made strides in the nonprofit sector and in social change movements. Lopes, the first woman to receive the award, was recognized for her groundbreaking work in developing OpenSimulator, the open-source application server and framework that's opening up 3-D virtual environments such as "Second Life" to educational institutions and other nonprofits worldwide.



Paul Dourish, a newly appointed UCI Chancellor's Professor, was named a 2015 Association for Computing Machinery (ACM) Fellow for his contributions in social computing and human-computer interaction. Dourish also recently received nearly \$195,000 from the National Science Foundation for his two-year project studying the way that technical aspects of the design of network protocols and data representations may also encode, enshrine or constrain organizational practices and institutional arrangements.



Gary Olson received a Lifetime Service Award from the ACM Special Interest Group on Computer-Human Interaction (SIGCHI) as part of the group's annual effort to recognize and honor leaders and shapers within the field of human-computer interaction.



Alfred Kobsa has received a Mercator Fellowship from the German Research Foundation that will enable him to engage in intensive, long-term project-based collaborations with researchers from both domestic and foreign institutions. Throughout the duration of the fellowship, Kobsa will work both on-site at the University of Duisburg and continue his project collaboration in Irvine.



Department of Statistics



It is an exciting time for the field of statistics because of the increased interest in empirically driven solutions to problems in research and industry, and UCI's Department of Statistics continues to grow as a leader in creating statistical methodology for use in data science applications. In fall 2015, we welcomed Assistant Professor Weining Shen to the faculty. Weining earned his Ph.D. in statistics from North Carolina State University and later completed a post-doctoral research position at the University of Texas MD Anderson Cancer Center. He brings additional

expertise in non-parametric Bayesian statistics, asymptotic inference and high-dimensional data methods to the department. We also look forward to welcoming Associate Professor Michele Guindani from the MD Anderson Cancer Center in fall 2016.

In other faculty news, Statistics Professor Wesley (Wes) Johnson retired in June. Wes is a renowned expert in Bayesian statistical methods and has been a key member of our statistics department for more than 10 years. Thankfully, Wes will continue as professor emeritus, so he will remain an invaluable resource for our students and faculty.

I am also very pleased to announce that, in a joint effort with UCI's Program in Public Health, our Master of Public Health program with an emphasis in biostatistics has been approved and is now accepting applications for admission. In addition, our Center for Statistical Consulting (<http://statconsulting.uci.edu>) remains a valuable resource to the entire UCI campus and continues to grow with the hiring of two new research staff members.

Many other initiatives are currently underway, and in the coming years we expect the Department of Statistics to continue growing in reputation through the efforts of our outstanding faculty, students and alumni. Please continue to follow our progress by visiting us online at www.stat.uci.edu.

Dan Gillen
Professor and Chair
Department of Statistics

2015-16 RESEARCH

Total Research Expenditures
\$825,965

Expenditures from
Government Awards
55%

Expenditures from
Industry Awards
45%

Total Active Awards
4

New Proposals Submitted
8

New Active Awards
2

FACULTY HIGHLIGHTS

The recently formed Center for Statistics and Applications in Forensic Evidence (CSAFE)—co-led by **Hal Stern**—has landed on a White House Impact Report that features 100 examples of President Obama’s leadership in science, technology and innovation during his presidency. Funded by a five-year \$20 million grant from the National Institute of Standards and Technology, CSAFE is a consortium of four universities—UC Irvine, Iowa State University, Carnegie Mellon University and the University of Virginia—that aims to improve criminal evidence analysis nationwide.

Dan Gillen and **Hernando Ombao** have been named fellows of the American Statistical Association, one of the highest honors in the profession. Gillen is noted for his contributions to statistical methodology in censoring-robust survival analysis, group sequential methods and genetic epidemiology; for continuing and effective mentoring of students; for exemplary statistical consulting; and for significant contributions to the statistical profession. Ombao is noted for his contributions to time series analysis, spatio-temporal models and signal processing, and their applications to brain imaging and neuroscience; and for student mentoring in these research areas.

As president of the American Statistical Association (ASA), **Jessica Utts** continues to fight for a more accurate use of statistics, starting with the organization’s recently released statement against the misuse of p-values, the first of its kind in the association’s 177 years. The “Statement on Statistical Significance and P-Values” outlines six principles underlying the proper use and interpretation of statistical p-values, one of the most commonly used determinants of statistical significance. The statement has been downloaded thousands of times. Utts also continues to travel around the globe, to places including Bangladesh and India, in an effort to forge new relationships with statisticians worldwide as part of her ASA presidential duties.

Babak Shahbaba, together with co-principal investigators Hongkai Zhao and Jeffrey Streets from UCI’s Department of Mathematics, received \$250,000 from the National Science Foundation for his project, “Theory and practice for exploiting the underlying structure of probability models in big data analysis.” The project aims to develop a theoretical framework to study underlying structures of statistical models and use this framework in practice to design efficient and scalable computational methods and algorithms for Bayesian inference. Due to its interdisciplinary nature, this research is expected to contribute to several fields, including statistics, machine learning, applied mathematics and data-intensive computing.

Wesley Johnson has been named a fellow of the International Society for Bayesian Analysis (ISBA) for his fundamental research contributions to Bayesian predictive modeling, Bayesian regression through informative prior elicitation and diagnostics, Bayesian nonparametrics, diagnostic screening tests, and biostatistical and veterinary applications; for exceptional mentoring, advising and teaching; and for long-standing service to the Bayesian community.



Stern



Ombao



Utts



Shahbaba



Johnson

Meet the Dean

Q&A with Professor Marios Papaefthymiou, who will serve as the third dean of the Donald Bren School of Information and Computer Sciences when he arrives at UC Irvine in January 2017.



Professor Marios Papaefthymiou, chair of the computer science and engineering division and professor of electrical engineering and computer science at the University of Michigan, will begin his term as the third dean of the Donald Bren School of Information and Computer Sciences on Jan. 1, 2017. Prior to his appointment as chair of the division at Michigan, he was director of the university's Advanced Computer Architecture Laboratory for 11 years.

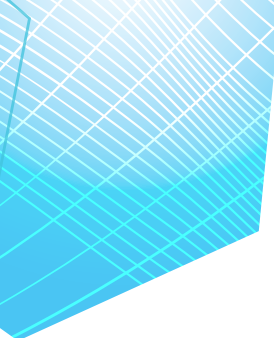
He also spent three years teaching at Yale. Dean Papaefthymiou's research addresses a broad spectrum of problems in computer design with an emphasis on architectures and design methodologies for energy-efficient, high-performance computers. Dean Papaefthymiou is also a successful entrepreneur, co-founding and serving as Chief Scientist of Cyclos Semiconductor, a startup specializing in energy-efficient chips for power-critical applications. Dean Papaefthymiou earned his doctorate and master's degrees in electrical engineering and computer science from MIT, and a bachelor's degree in electrical engineering from Caltech. Prior to arriving in Irvine in January, Dean Papaefthymiou kindly agreed to answer some questions about himself and his vision for ICS.

What interested you most about becoming dean of ICS?

As an independent school focused on computing, ICS is strategically positioned to lead in the exploration and dissemination of the information and computing technologies that are transforming our society. With informatics, computer science and statistics under the same roof, ICS provides the broad foundation for research and education programs in core computing technologies as well as their application in numerous domains. It is therefore in an ideal position to leverage the intellectual diversity of the UC Irvine campus for the advancement of the arts, business, economics, education, engineering, healthcare and science through innovations in information technology. Furthermore, ICS is presented with tremendous opportunities for transferring these advancements to society through the expansive entrepreneurial ecosystem in Southern California.

What's your vision for ICS, and what do you hope to achieve as dean?

I envision a further elevated ICS that will serve as a national resource for the advancement of our society through innovations in information technology. To that end, I expect ICS to place increased emphasis on leading large-scale research centers and national-level initiatives in vital and transformative areas of information technology, such as, for example, data science, cybersecurity and digital healthcare. I also expect ICS to accelerate the transfer of research findings to our society through entrepreneurial activities led by its faculty



and students. Furthermore, I see ICS leading new education initiatives in emerging areas of information technology, and enriching the student experience by building on an already strong tradition of innovation and vision in education as exemplified by the recently launched program in data science, one of the first in the nation. Reflecting the pervasiveness and broad reach of information technology, ICS will pursue this vision of excellence and national prominence while further strengthening its efforts to provide an inclusive and accessible environment for learning and discovery. An essential element for the realization of this

in the security and energy efficiency of these processors, extending battery lifetime from days to months, enabling additional features within a constrained power envelope, and significantly decreasing their vulnerability to security threats.

How has being an entrepreneur helped you in academia?

In my view, the lessons from my entrepreneurial experiences have been invaluable complements to my academic pursuits. They have enriched my classroom teaching and graduate student mentoring, allowing me to offer a broader perspective beyond the narrow technical aspects of a topic. They have also enabled me

“As an independent school focused on computing, ICS is strategically positioned to lead in the exploration and dissemination of the information and computing technologies that are transforming our society.”

vision will be the further growth of ICS through the development of additional resources for expanding its teaching and research programs.

Please tell us a little about your personal research interests.

For the past several years, I have been exploring design technologies for building energy-efficient computers. My research and, subsequently, my startup, Cyclos, have focused on improving energy efficiency in high-performance processors such as the ones found in data centers. Recently, my attention has turned to design technologies for building secure and energy-efficient low-end processors, such as the ones found in embedded computers for the emerging “Internet of Things.” These processors are often deployed in the wild, running off a small battery or by scavenging energy from the environment, and can be exposed to a variety of security attacks. My research focuses on technologies that have the potential to achieve order-of-magnitude improvements

to serve as a mentor for colleagues and students with entrepreneurial aspirations or startups underway. I look forward to working with the UC Irvine community to further entrepreneurial opportunities for ICS students and faculty.

What aspect of technology are you most passionate about at this point in time?

The potential of information technology to transform healthcare. From sophisticated algorithms that analyze genomic information to help customize therapies for individual patients, to smart devices that monitor patients away from the hospital and suggest lifestyle improvements in real time or predict an impending heart attack and remotely alert their attending physicians, information technology stands to vastly improve the quality and reduce the cost of healthcare. In my opinion, the impact of information technology on healthcare will be far greater than its impact on any other aspect of our lives so far.

New Faculty 2015-2016

The Donald Bren School of Information and Computer Sciences is proud to have welcomed several outstanding faculty members over the last two years. These talented researchers are leaders in their communities and will help ICS maintain its strength in a broad array of information and computer science domains.



Rebecca Black

*Associate Professor of Informatics
Ph.D., University of Wisconsin, Madison*

Rebecca Black's research centers on the literacy and socialization practices of young people from diverse cultural and linguistic backgrounds who are writing and participating in online popular culture-inspired environments. This work includes an explicit focus on the 21st century skills and forms of literacy and learning that youth are engaging with in online spaces. Her 2008 book, *Adolescents and Online Fan Fiction*, explored how English language-learning youth represent their cultural and linguistic identities through fan fiction texts. Black joins ICS after serving on the faculty at UCI's School of Education.



Michele Guindani

*Associate Professor of Statistics
Ph.D., Università Bocconi (Milan, Italy)*

Michele Guindani's research interests include the use of a Bayesian (parametric and nonparametric) modeling framework for the analysis of problems in biostatistics, genetics, and spatial statistics, and the solution of inverse problems (with particular regard to pharmacokinetics/pharmacodynamics modeling). He is additionally interested in developing statistical models for data integration as well as Bayesian decision-theoretical approaches to address multiple comparison problems in hypothesis testing. Guindani joins UCI after serving as a faculty member at the University of Texas MD Anderson Cancer Center.



Sam Malek

*Associate Professor of Informatics
Ph.D., University of Southern California*

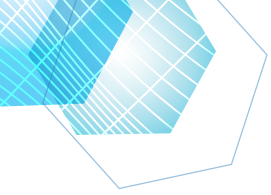
Sam Malek is a member of UC Irvine's Institute for Software Research and the director of the Software Engineering and Analysis Lab. Malek's general research interests are in the field of software engineering, specifically focusing on software architecture, autonomic computing, mobile computing, and software analysis and testing. The underlying theme of his research has been to devise techniques and tools that aid the construction, analysis and maintenance of large-scale software systems. Malek is a UCI alumnus who joins the faculty after a stint at George Mason University.



Bonnie Ruberg

*Assistant Professor of Informatics
Ph.D., UC Berkeley*

Gaming guru Bonnie Ruberg is a former Provost's Postdoctoral Scholar at the University of Southern California where she worked in the Interactive Media and Games Division on issues of gender and sexuality in digital cultures. She is also the lead organizer and co-founder of the annual Queerness and Games Conference (QGCon), as well as the co-editor of the forthcoming volume *Queer Game Studies: Gender, Sexuality, and a Queer Approach to Game Studies*. Ruberg's primary research areas include video games, digital cultures, digital media, media studies, social media, the digital humanities, sexuality, gender, queer studies and intersectionality.



Ardalan Amiri Sani

*Assistant Professor of Computer Science
Ph.D., Rice University*

Ardalan Amiri Sani's research interests include mobile systems, operating systems and virtualization. He is currently working on the challenges and opportunities of the large number of I/O devices appearing in modern computers from mobile systems to servers. Sani was also recently awarded a \$500,000 National Science Foundation grant to investigate different methods to enhance the security and performance of GPU-accelerated graphics in commodity web browsers.

Weining Shen

*Assistant Professor of Statistics
Ph.D., North Carolina State University*

Weining Shen comes to ICS after serving as a postdoctoral researcher for the Department of Biostatistics at the University of Texas MD Anderson Cancer Center. Shen's research focuses on the theory of Bayesian methods and development of new methods for biostatistics applications. His current interests include: Bayesian nonparametric/semi-parametric models, asymptotics, high-dimensional inference and variable selection, biomarker evaluation, risk prediction of cancer, Bayesian clinical trial designs, and longitudinal data analysis.

Sameer Singh

*Assistant Professor of Computer Science
Ph.D., University of Massachusetts, Amherst*
Sameer Singh's current research is on large-scale and interactive machine learning applied to information extraction and natural language processing. As a Ph.D. candidate, he had the opportunity to intern at Microsoft Research, Google Research and Yahoo! Labs. Singh also was selected as a DARPA Riser, won the grand prize in the Yelp Dataset Challenge, has been awarded a Yahoo! Key Scientific Challenges Award and was a finalist for the Facebook Ph.D. Fellowship. Singh joins the ICS faculty after serving as a postdoctoral fellow at the University of Washington.

Aaron Trammell

*Assistant Professor of Informatics
Ph.D., Rutgers University*

Aaron Trammell was a Provost's Postdoctoral Scholar for Faculty Diversity in Informatics and Digital Knowledge at the Annenberg School for Communication and Journalism at the University of Southern California before coming to ICS. His research is focused on revealing historical connections between games, play and the U.S. military-industrial complex. Trammell is also interested in how military ideologies become integrated into game design and how these perspectives are negotiated within the imaginations of players.

Shuang Zhao

*Assistant Professor of Computer Science
Ph.D., Cornell University*

Shuang Zhao's research interests are in computer graphics and visualization with a focus on material appearance modeling and physically-based rendering. His research aims to computationally reproduce the appearance of the real world using physically-based models, allowing the prediction of object appearance under a wide range of conditions. Zhao joins UCI after serving as a postdoctoral researcher at MIT.

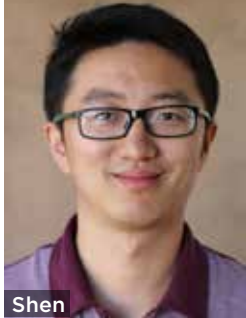
Kai Zheng

*Associate Professor of Informatics
Ph.D., Carnegie Mellon University*

Known as a leading expert in the field of health informatics, Kai Zheng is pioneering new ways of harnessing and utilizing information to improve health outcomes and maximize the quality of life. As part of his research, he is creating intuitive, consumer-facing applications that empower people to take control over their own health and wellness management. Zheng serves as co-director of the Center for Biomedical Informatics within the UCI Institute for Clinical and Translational Science. Zheng joins UCI after serving as a faculty member at the University of Michigan.



Sani



Shen



Singh



Trammell



Zhao



Zheng

ICS Alumni Celebrate from C

On the heels of UCI's 50th Anniversary Celebration in 2015, the Donald Bren School of Information and Computer Sciences continued its outreach in 2016 with a series of alumni and community events. ICS kicked off the year with Homecoming in January when thousands of Anteaters came to Aldrich Park, despite the

brought nearly 50 ICS and engineering alumni who came to network and reminisce with fellow alumni and the deans, while taking in evening views of Central Park. With the overwhelming popularity of the New York alumni reception, ICS hopes to return to the East Coast soon to continue building on the momentum from this year's event.



Nearly 50 alumni came out for the inaugural ICS and Engineering New York City Area Alumni Reception in April.



Bay Area alumni were treated to a special event at Autodesk's San Francisco Gallery in May.

rain, to celebrate with fellow alumni. The ICS Homecoming booth included giveaways, alumni representatives looking to restart the ICS alumni chapter at UCI, as well as a poster session featuring Ph.D. candidate Raúl Díaz García who talked about his current research with Computer Science Professor Charless Fowlkes on automatic scene understanding to enhance computer vision.

In April, ICS and engineering held their first New York City Area Alumni Reception. The inaugural event was hosted in Midtown Manhattan by ICS alumnus Tim Kashani (BS '86, MS '88) and his wife, Pamela Winslow Kashani. Their Apples and Oranges Studios helped produce the highly acclaimed Broadway show *An American in Paris*. The private reception

Shortly after returning from New York City, ICS returned to the Bay Area in May for an alumni event at Autodesk's San Francisco Gallery. The special artistic and educational evening featured talks by ICS alumna Erin Bradner (MS '98, Ph.D. '01), research scientist at Autodesk Research, who spoke about generative design, and Informatics Professor Crista Lopes, who spoke about her work developing a framework for simulating urban life. The event allowed alumni an intimate opportunity to tour the innovative, interactive Autodesk Gallery overlooking the Bay Bridge, as well as network with alumni and faculty. We look forward to seeing everyone again for our 3rd Annual ICS and Engineering Bay Area Alumni Event in spring 2017.

Coast to Coast

Finally, in June, the academic year ended with Ingenuity 2016, our annual “best of” student technology showcase. This year’s Ingenuity, which took place at UCI’s Beckman Center, featured keynote speaker Eben Upton, Broadcom technical director and Raspberry Pi founder, and student teams from ICS and

farewell reception held for Dean Hal Stern prior to Ingenuity where alumni, as well as UCI staff and faculty, were able to say goodbye and thank the dean for all his work and dedication in advance of his stepping down at the end of 2016.



André van der Hoek and Gillian Hayes from the Department of Informatics with Sheldon Razin (center), founder of Quality Systems Inc., at Ingenuity 2016.



Kitty Ho and Sarah Shekher, Class of 2011, volunteered at Homecoming to help restart the ICS alumni chapter.

engineering who demonstrated their hard work. During the evening’s formal presentation, special Ingenuity awards were given to Broadcom Foundation President Paula Golden and ICS alumnus Jon Teichrow ’86, founder of Mirth Corp. (now part of Quality Systems Inc.), for their continued support of the two schools and our students. There was also a special

We look forward to seeing everyone again at our events during the 2016-17 academic year! Continue checking your email and the ICS website for more information about future events. If you don’t want to wait, please contact Kristin Huerth, associate director of external relations, at khuerth@ics.uci.edu to discuss how you can meet ICS alumni in your area.

ICS HALL OF FAME NOMINATIONS

In 2015, as part of UC Irvine’s 50th Anniversary Celebration, the Donald Bren School of Information and Computer Sciences established an ICS Alumni Hall of Fame. We are once again soliciting nominations of alumni who have made a significant impact in their profession (business, academic, government, etc.) or have otherwise brought distinction to UC Irvine and ICS. For more information and to nominate someone (including yourself), please visit www.ics.uci.edu/community/alumni/hall_of_fame/.

DEAN'S LEADERSHIP COUNCIL

The Dean's Leadership Council is an advisory board composed of 30 executive-level leaders who help advance our research, teaching and public service goals by strengthening the school's ties to industry and the community. Council members provide invaluable input to the dean of the school from their industry and community perspective on things such as industry trends and ICS curricula. If you are interested in getting involved in the ICS Dean's Leadership Council, please contact Ed Hand, assistant dean for development, at elhand@uci.edu or (949) 824-6563.

Arthur Hitomi, B.S. '96

Chair of the Dean's Leadership Council
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Mohamed Alkady

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Sullivan LLP

Paul Butterworth, B.S. '74, M.S. '81

CTO, IQvantage

David Cheng, B.S. '91

CTO and Co-Founder, Zaka Inc.

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Kevin Daly, Ph.D.

CEO, Iteris Inc.

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Richard Sudek, B.S. '81

Executive Director, UCI Applied Innovation

CORPORATE PARTNERS PROGRAM

The Corporate Partners Program provides concierge-level service to assist companies in growing their relationships with ICS students, faculty and staff to reach their strategic goals. Members gain a single point of contact for identifying and recruiting interns and full-time employees, increasing brand visibility, as well as accessing resources and individuals within the schools and the university. Moreover, corporate partners are highly visible collaborators in moving the missions of UCI's schools of ICS and engineering forward. For more information about the Corporate Partners Program, please contact Shana Chance, director of corporate relations, at schance@uci.edu or (949) 824-3977.



HONOR ROLL OF DONORS JULY 1, 2015-JUNE 30, 2016

Thanks to the generous supporters of the Donald Bren School of Information and Computer Sciences, ICS raised \$1.6 million in gifts and grants from businesses, foundations, alumni and friends during the 2015-2016 fiscal year. These gifts helped fund faculty research and teaching, undergraduate scholarships, graduate student awards, and other essential expenses. For more information on giving to ICS, please visit www.uadv.uci.edu/DonaldBrenSchoolofICSAnnualGiving.

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COMMENCEMENT 2016

This year's commencement included our largest graduating class with 459 undergraduate, 146 master's and 36 Ph.D. students joining the more than 9,000 ICS alumni worldwide. Congratulations to all of our ICS graduates! Zot! Zot! Zot!

