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2016 CRA Distinguished Service and A. Nico Habermann Awardees Announced

The CRA Board of Directors is pleased to announce its selections for the 2016 CRA Awards.

Maria Klawe: Distinguished Service Award Winner

Maria Klawe was selected as the 2016 recipient of the CRA Distinguished Service Award for her tireless commitment to and profound impact on the computing research community. Klawe is the president of Harvey Mudd College and has previously served as president of the Association for Computing Machinery. She helped Anita Borg and Telle Whitney establish the Institute for Women in Technology (now the Anita Borg Institute) and served as a board chair.

Klawe has used her leadership positions to strengthen the research discipline of computer science and to establish new norms and policies to increase the percentage of women and minorities in computer science and technology. She is dedicated to increasing the percentage of women and underrepresented minorities in STEM, with a focus on increasing computing researchers and engineers. In 2004, Klawe and Nancy Leveson were the recipients of the A. Nico Habermann Award in recognition for their roles as founding co-chairs of the highly successful CRA-W Committee.

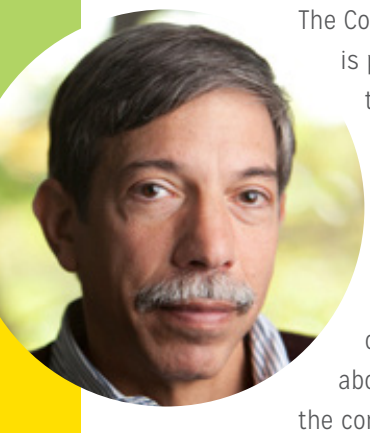
Ayanna Howard: A. Nico Habermann Award Winner

Ayanna Howard was selected as the recipient of the 2016 A. Nico Habermann Award for her sustained commitment to increasing diversity, combined with her distinction in research. She has a decades-long track record of improving access to research for women and underrepresented minorities (URMs), as well as students with disabilities. Dating back to her work at JPL in the late 1990s, she ran a mentoring program for undergraduate women and, continuing today, she works on increasing minority participation at the graduate, undergraduate, and high school levels.

Howard is currently a CRA-W board member and faculty member at Georgia Tech, where she has provided research opportunities to dozens of undergraduates (more than 75% of whom are URMs and/or women)—and a majority of these students have gone on to graduate school.

Howard has taken an increasingly visible role as a spokesperson for improving diversity in STEM and robotics, and has garnered impressive media visibility for her work. In the last year, she was recognized as one of the 23 most powerful women engineers in the world by Business Insider and was named to The Root 2015, a list of 100 African-Americans responsible for the year's most significant moments, movements, and ideas. Additionally, Howard serves as the principal investigator of an NSF National Research Traineeship grant for Healthcare Robotics Technologies that aims to increase STEM's appeal to a wide range of people.

Fred Schneider Receives Service to CRA Award



The Computing Research Association (CRA) is pleased to honor Fred Schneider, the Samuel B. Eckert Professor and Chair of Computer Science at Cornell University, with a Service to CRA Award for his work with the organization. Fred was a member of the CRA Board from 2007 to 2016, during which time he thought deeply about how to have positive impact on the computing research community and spearheaded several key initiatives.

As chair of the Government Affairs Committee (2009-2016), Fred helped drive CRA's policy agenda and developed the Leadership in Science Policy Institute, intended to educate computing researchers on how science policy in the U.S. is formulated and how our government works. The event has been held biennially since 2011, with more than 115 total participants, many of whom have gone on to advocate for the field, testify before Congress, or take on positions in Washington that help steer Federal policy for computing.

As chair of the Committee on Best Practices for Hiring, Promotion, and Scholarship, Fred led the committee over a period of 18 months in conducting interviews with more than 75 academic and industry computing and information unit heads to understand the issues and gain insights from practice. Preliminary recommendations were vetted with department chairs and CRA Deans at the CRA Conference at Snowbird in July 2014, and were published in a CRA Best Practices memo entitled, Incentivizing Quality and Impact: Evaluating Scholarship in Hiring, Tenure, and Promotion.

Fred played a central role in the development and success of the Computing Community Consortium, beginning with the 2010 site visit and follow on 2012 proposal for continued funding. He provided oversight of the Visioning Program process and was always a strong voice in shaping important research initiatives.

But Fred's importance extends beyond his knowledge, intelligence, and dedication. Fred speaks his mind, regardless of whatever direction the tide may be flowing, and there is always sense in what he says. Time and again, a thoughtful interjection by Fred has caused us to reconsider and change direction, to the enormous benefit of CRA and the field.

The award will be presented at the upcoming 2016 CRA Conference at Snowbird.

Check out the updated program online at:
http://cra.org/events/snowbird-2016/#agenda

Introducing the CRA-E Undergraduate Research Faculty Mentoring Award Winners

The Education Committee of the Computing Research Association (CRA-E) is proud to announce three winners of the inaugural CRA-E Undergraduate Research Faculty Mentoring Award. Congratulations to the 2016 award recipients: Pieter Abbeel, from the University of California, Berkeley; Marie desJardins, from the University of Maryland Baltimore County; and Judy Goldsmith from the University of Kentucky. These outstanding individuals are recognized for providing exceptional mentorship, undergraduate research experiences, and, in parallel, guidance on admission and matriculation of these students to research-focused graduate programs in computing. The 2016 selection committee included Nancy Amato (Texas A&M University, committee chair); Eric Aaron (Vassar College); Pat Morreale (Kean University); and Barbara Ryder (Virginia Tech). This year's awards will be presented at the 2016 CRA Conference at Snowbird.

Pieter Abbeel

Pieter Abbeel is an associate professor of computer science at the University of California, Berkeley. He works in machine learning and robotics, more specifically on making robots learn from people (apprenticeship learning) and how to make robots learn through their own trial and error (reinforcement learning). His robots have learned advanced helicopter aerobatics, knot-tying, basic assembly, and organizing laundry. He currently advises and mentors 15 undergraduates. In 7 years on the faculty at UC Berkeley, the research opportunities he provided has motivated 33 of his undergraduate mentees to pursue graduate programs in computing, with the majority pursuing or having received a Ph.D.

His successful mentoring of undergraduates focuses on early identification of students, individual encouragement to pursue research, weekly research meetings, discussion of research skills, ongoing advice about graduate school, and help during the graduate application process. Pieter co-authored more than 40 journal or conference publications with his undergraduate researchers. The number of undergraduates mentored, the high quality of the student accomplishments, and the regular, annual placement of his students in top-tier Ph.D. programs over the past decade, demonstrates not only the success of his approach but also his energy, dedication, and vision for his students.

Marie desJardins

Marie desJardins is an associate dean of engineering and information technology and a professor of computer science at the University of Maryland, Baltimore County. Her research is in the area of artificial intelligence, machine learning, and computer science education. Currently, her research group includes six undergraduates and five graduate students. Since 2005, she has mentored more than 70 undergraduate students. At least 29 of them have enrolled in graduate programs in computing, with 8 of the 29 having pursued a Ph.D. in computer science.

Many of the undergraduates Marie has mentored never imagined that they would be involved in research and consider graduate education. Marie's strategy for working with undergraduate majors involves engaging with students in their first two years and building teams in which her more senior research students, both graduate and undergraduate, help train and lead the junior students. She is known for her unconditional support, encouragement, and dedication. Marie encourages students from underrepresented minorities to get involved with national

organizations and programs, including CRA-W, NCWIT, Grace Hopper, IJCAI, and AAAI. She stays in touch with her mentees beyond their graduation, and has helped some to become effective mentors themselves.

Judy Goldsmith

Judy Goldsmith is a professor of computer science at the University of Kentucky. Her research is in the area of artificial intelligence and theory of computation. She is dedicated to promoting participation of underrepresented groups, especially women, not only at University of Kentucky, but also other institutions in the state. Judy has mentored more than 25 undergraduate students, involving them in her research program or in software projects. In the last 10 years, four of her mentored students have enrolled in Ph.D. programs in computer science.

Judy's mentoring approach is influenced by the diversity of the students. Many students have worked to put themselves through college, are the first in their family to attend college, and may not know why one would attend graduate school. Judy gives attention to students in and outside of her classroom and provides an active model of mentoring. She works tirelessly on personalized ways to excite them about research, attract them to her research program, and, most importantly, retain them. Her weekly AI seminar doubles as a key mentoring experience for undergraduates. She provides all of them with a window into academic research and stresses the importance of professional training in conduct and engagement.

2016 CRA Board Election Results

CRA members have elected four new members to its board of directors: Penny Rheingans, Shashi Shekhar, Josep Torrellas, and Min Wang. Current board members Chris Johnson and Ron Brachman were re-elected to the CRA board. Their terms run from July 1, 2016 through June 30, 2019. Retiring from the board as of June 30, 2016 are Tracy Camp, Ann Condon, Laura Haas, and Fred Schneider. CRA thanks them all for contributions during their service on the board.

Penny Rheingans

Penny Rheingans is a professor of computer science and electrical engineering and director of the Center for Women in Technology (CWIT). As CWIT director, she oversees a scholarship program for undergraduates committed to increasing gender diversity in the technology fields and develops programs to increase the interest and retention of women in technology programs. She received a Ph.D. in computer science from the University of North Carolina, Chapel Hill and an A.B. in computer science from Harvard University. Her current research interests include the visualization of predictive models, visualization of data with associated uncertainty, volume rendering, information visualization, perceptual and illustration issues in visualization, non-photorealistic rendering, dynamic and interactive representations and interfaces, and the experimental validation of visualization techniques.

Shashi Shekhar

Shashi Shekhar, a *McKnight Distinguished University Professor* of computer science at the University of Minnesota, is a prominent researcher in the area of geographic information systems (GIS) and spatial computing. For contributions to these areas, he received the IEEE Computer Society *Technical Achievement Award* as well as the University Consortium for GIS *Education Award* (2015) and was elected an IEEE Fellow as well as an AAAS Fellow. He has a distinguished academic record that includes 300+ publications including a popular textbook on Spatial Databases (Prentice Hall, 2003), an authoritative *Encyclopedia of GIS* (Springer, 2008) and a massively open online course (Coursera, Fall 2014).

Shashi co-organized an NSF workshop (2015) to identify data science research challenges in the cross-directorate initiative on innovations at the nexus of food, energy, and water systems (INFEWS). Shashi has also served on multiple National Academies' committees including *Models of the World for USDOD-NGA* (2015), *Geo-targeted Disaster Alerts and Warning* (2013), *Future Workforce for Geospatial Intelligence* (2011), *Mapping Sciences* (2004-2009) and *Priorities for GEOINT Research* (2004-2005).

Shashi represented the CRA in a recent Congressional reception titled *"Deconstructing Precision Agriculture"* for the house agricultural committee. He also served on the CRA's Computing Community Consortium (CCC) Council (2012-15), where he coordinated the Blue Sky tracks initiative to help many conferences catalyze community to pursue bold new research directions. He also co-organized the CRA/CCC visioning workshop titled "From GPS and Virtual Globes to Spatial Computing 2020" and gist of the workshop report was published recently as a cover article for the *Communications of the ACM* (January 2016).

Josep Torrellas

Josep Torrellas is a Professor at the Departments of Computer Science and (by courtesy) Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. He is the Director of the Center for Programmable Extreme Scale Computing, and past Director of the Illinois-Intel Parallelism Center (I2PC). He was also the Coordinator of the Illinois OpenSPARC Center of Excellence. He is a

Fellow of IEEE (2004) and ACM (2010). He received the IEEE Computer Society 2015 Technical Achievement Award, for "Pioneering contributions to shared-memory multiprocessor architectures and thread-level speculation".

Prof. Torrellas has served the computing research community extensively. From 2005 to 2010, he served as Chair of IEEE Technical Committee on Computer Architecture, where he contributed in a myriad of professional advancement activities; he continues to serve in its Advisory Board. He was a Council Member of CRA's Computing Community Consortium (CCC) from 2011 to 2014. Prof. Torrellas has served in many initiatives from DARPA, NSF, DOE, NSA, NASA and CRA. For example, he co-organized two CCC workshops on Advancing Computer Architecture Research, and co-edited a CCC visioning white paper on 21st Century Computer Architecture. Torrellas has served in the organization of numerous professional conferences and workshops.

Torrellas received a Ph.D. from Stanford University. He has graduated over 35 Ph.D. students, who are now leaders in academia and industry.

Min Wang

Min Wang joined Visa as the senior vice president and head of Visa Research in May 2015. Visa Research is a newly created organization as part of the company's continued effort to expand technology research capabilities globally. Visa Research conducts applied research on the most challenging problems in the payment industry and provides technical thought leadership for the company's future. In her role, Wang leads the research on data analytics, security, and the future of payments.

Prior to Visa, Wang was part of Google Research where she was a senior staff research scientist and research manager focused on knowledge integration and inferencing at Google's headquarters in Mountain View, California. Before Google, Wang was director of HP Labs China in Beijing, China, where she was also named an HP Distinguished Technologist. Wang also held a senior research role as the manager of the Unified Data Analytics Department at IBM's Thomas J. Watson Research Center in Hawthorne, New York.

Wang has received several distinguished research awards for her work on data management. In 2009, Wang received the ACM SIGMOD Test of Time Award for her 1999 SIGMOD paper, "Approximate Computation of Multidimensional Aggregates of Sparse Data Using Wavelets."

Wang received her Ph.D. in computer science from Duke University and B.S. and M.S. degrees, both in computer science, from Tsinghua University, Beijing, China.

Sneak Preview: 2015 Taulbee Report Details

By Stu Zweben and Betsy Bizot

The 2015 Taulbee Report will be published in the May 2016 issue of CRN. As we have done for the past several years, we are providing a preview of the degree and enrollment numbers for bachelor's and doctoral level programs in the departments responding to the survey.

The total number of Ph.D.s awarded declined by 8.2 percent, from 1,940 from the departments responding in 2014 to 1,780 from the departments responding in 2015. Since the set of departments reporting from one year to the next varies, for understanding enrollment trends it is of interest to focus on the set of departments that reported in both years.

When considering only departments that reported both years, the overall decline in doctoral production was slightly more than 4 percent. When only U.S. CS departments are considered, however, doctoral production was steady among departments that reported both years. Overall doctoral enrollment among all departments reporting both years rose a little above 2 percent, while the number of new doctoral students declined by a similar percentage at these departments. At U.S. CS departments reporting both years, there was little change in either the number of new students or the total doctoral enrollment.

At the bachelor's level, there continues to be rampant growth. Bachelor's degree production at departments reporting both years increased more than 20 percent, and increased more than 15 percent when only U.S. CS departments are considered. Overall bachelor's enrollment and the number of new bachelor's students at departments reporting both years also increased from 15-20 percent; this was true whether all departments are considered or whether only U.S. CS departments are considered.

Watch the May 2016 *CRN* for a more complete analysis of the Taulbee data.

Want to Explore the Data Buddies Data?

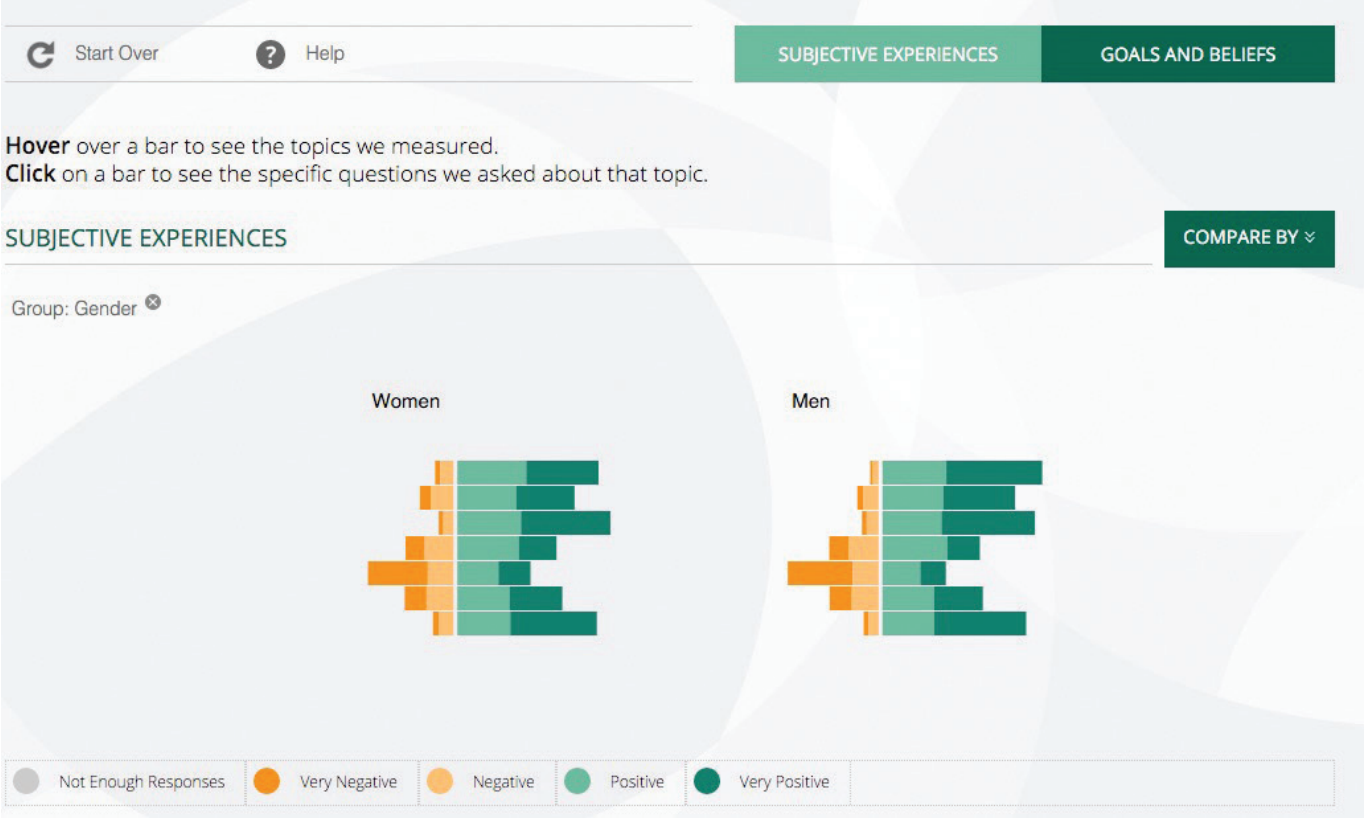
By Jane Stout, CERP Director

CERP is thrilled to launch its new data visualization website displaying Data Buddies data. Ron Metoyer, associate professor of computer science and engineering at the University of Notre Dame, designed the website, alongside a team of student developers, and CERP Research Scientist Burçin Tamer. This project was funded by an NSF award to the CRA: CNS-1246649.

The data visualization website allows viewers to explore trends in students' experiences in the computing community, and features the capability to compare data across student groups (e.g., women vs. men; students of different racial background). Currently, the website is displaying data collected during the fall semester of 2014.

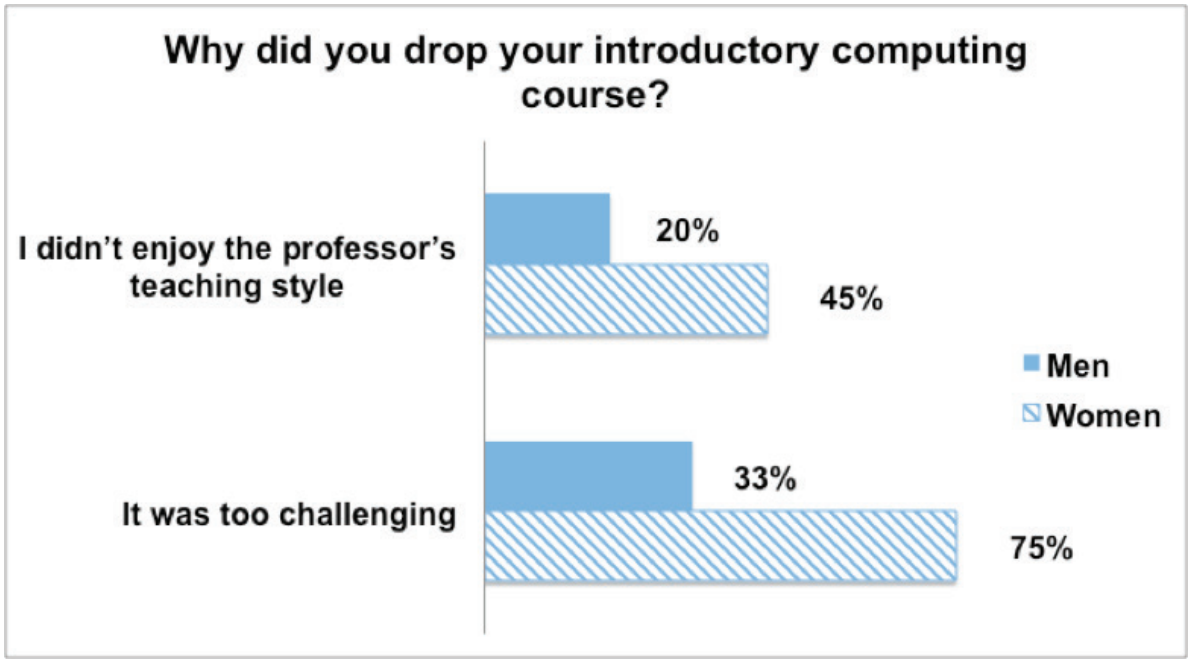
Data were collected from Data Buddies departments. Is your department a buddy? If not, help the computing community by volunteering your department to become a Data Buddy today!

Visit CERP's website to sign up: http://cra.org/cerp/data-buddies/.



Women More Likely Than Men to Leave Intro CS Courses Due to Teaching Style and Rigor

By Jane Stout, CERP Director



CERP recently collected data from Intro CS students as part of the "booming enrollments" research underway at the CRA. Within this dataset, a sample of undergraduate students (N = 50) who had recently dropped an Intro CS course reported their reasons for doing so. Women were significantly more likely than men to report they did not enjoy their Intro CS professor's teaching style, and that the course content was too challenging, $p < .05$. These findings suggest that the "weed out" technique in Intro CS may have a more negative impact on women than men, and that the current "boom," if left unchecked, has the potential to impair diversity efforts in CS.

Notes. Data were collected from 2,477 undergraduate Intro CS students as part of the Data Buddies initiative in fall 2015. Of those students, 2% (N = 55) indicated that they had recently dropped their Intro CS course. Of those 55 students, 30 were men, 20 were women, and 5 did not indicate their gender; the five students who did not indicate their gender were not included in the current analyses, rendering N = 50. Of the 50 students in this analysis, 50% were computing majors, and 50% were non-computing majors; 88% of students were attending Ph.D.-granting institutions, and 12% were attending M.S.-granting institutions; 24% were Asian/Asian American, 10% were African American/Black, 6% were Hispanic/Latina/o, 42% were White, 14% were Mixed ethnicity/race, and 4% did not indicate an ethnic/racial identity. Students were asked *Why did you drop your introductory computing course?* and indicated whether the following reasons applied to them using a Yes/No response: *I didn't enjoy the professor's teaching style; It was too challenging.* Chi-squared tests indicated the gender differences depicted in the graphic above were significant, $p < .05$.

CERP
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Evaluation

This analysis is brought to you by the CRA's Center for Evaluating the Research Pipeline (CERP). CERP provides social science research and comparative evaluation for the computing community. To learn more about CERP, visit our website at http://cra.org/cerp/

Expanding the Pipeline

Building Recruiting and Inclusion for Diversity (BRAID): Emerging Research on Diversifying the CS Major

By Linda J. Sax, Kathleen J. Lehman and Jennifer M. Blaney

In August 2014, Maria Klawe, President of Harvey Mudd College (HMC), and Telle Whitney, President of the Anita Borg Institute for Women and Technology (ABI), jointly established Building Recruiting and Inclusion for Diversity (BRAID). The BRAID initiative, with support from Facebook, Google, Microsoft, and Intel, involves 15 computer science departments across the U.S. that are committed to implementing changes to their introductory computer science courses, pathways into the major, departmental climate, and outreach efforts in hopes of increasing the recruitment and retention of women and underrepresented minority (URM) students in the computer science major. See http://anitaborg.org/braid-building-recruiting-and-inclusion-for-diversity/ for more information and a list of the BRAID institutions.

To document the results of the BRAID initiative and identify best practices, the UCLA-based BRAID research team is conducting a mixed-methods, longitudinal study of the BRAID initiative. The research effort is being led by Linda Sax of UCLA's Graduate School of Education and Information Studies and her team of graduate student researchers. With additional funding from the National Science Foundation (NSF) and the Computing Research Association (CRA), the BRAID research team is collecting data from students, faculty, staff, department chairs, and administrators in order to answer a variety of research questions related to the departmental change process and best practices for attracting and retaining women and URM students to the CS major. Additionally, the BRAID research team is collaborating with the CRA's Center for Evaluating the Research Pipeline (CERP) to compare the experiences of computing students at BRAID departments with students at other CS departments across the United States. This article will outline the research design for the BRAID research project, share some preliminary results from one of our student surveys, and discuss plans for future research.

BRAID Research Design

The research team is currently collecting baseline mixed-methods data to gauge the success of the BRAID initiative in diversifying the CS major. The qualitative data collection involves interviews and focus groups. Specifically, our team is conducting interviews with department chairs as well as faculty and other key administrators about the departmental change process. We are also conducting focus groups with students to learn about their views on the culture and climate of CS and their specific CS departments. The quantitative data collection involves faculty and student surveys. The faculty survey will be administered each term during the 2015-2016 and 2016-2017 academic years to instructors teaching introductory CS courses to learn more about their pedagogical techniques and experiences in those courses. The student surveys target two populations: CS majors and minors and students enrolled in introductory CS courses. Each fall, all computing students (i.e., CS majors and minors) will receive a survey that parallels the Data Buddies Survey (DBS) administered by CERP. Data from this survey will be merged with data collected from CERP's DBS, and comparative analyses will be conducted. Additionally, each term during the 2015-2016 and 2016-2017 academic years, students enrolled in introductory CS courses will receive pre- and post-test surveys to gather data on their backgrounds, self-ratings, perceptions of CS and computing, and experiences in the course and CS department. The following section will share some early results from the first administration of the introductory course student surveys.

Preliminary Findings

These results represent only the first term of baseline data collection on introductory computer science students. Of the 15 institutions included in our study, nine participated in the first term of data collection; more institutions are participating in subsequent waves as IRB approvals are secured. A total of 5,552 students enrolled in an introductory computer science course at the nine institutions participating in the fall 2015 administration, 1,904 of which completed our introductory course pretest survey for a response rate of 34%.

In terms of gender and racial/ethnic diversity, our sample includes 28% women and 23% URM students (including 7.5% African American/Black and 13% Chicano/Latino). The representation of women in the BRAID sample is higher than the proportion of women earning bachelor's degrees in computer science (18% nationally and 17% across BRAID institutions), which is likely due to women's higher survey response rates. We are further investigating the representativeness of our sample with respect to race/ethnicity.

Our sample illustrates the diverse computing backgrounds of introductory computing students. Of the students who responded to our survey, a quarter (26.5%) reported no programming experience prior to enrolling in the introductory course. At the same time, 29.4% reported having taken a programming course in high school and 19.9% reported having taught themselves how to program prior to the course. Gender differences in programming experience also exist, with 36% of women, compared to 27% of men, reporting the fall introductory class as their first experience with programming. Similarly, 33% of URM students reported no prior programming experience, compared to 25% of non-URM students.

Of the students who participated in our introductory course pretest survey, 40% completed a follow-up survey administered at the end of the term. These students represent the beginning of a longitudinal sample that we will continue to survey annually for the next four years. Of the students in our longitudinal sample of introductory students, 59.8% reported taking the course because it was a requirement and 25% enrolled because of an interest in computing. Influence of parents or teachers played a small role in why students enrolled in CS, with only 3.2% reporting that they enrolled because of encouragement from their parents and 3.6% reporting enrollment due to encouragement from teachers or other mentors. Students also noted the most common teaching methods used by their professors, with nearly two-thirds (62.3%) reporting that the professors in their introductory course frequently or always lectured. By continuing to track these students' annual progress, we will learn more about which specific teaching practices and student experiences best-predict students' persistence in CS.

Plans for Future Research

In addition to documenting the BRAID departments' efforts and identifying best practices for diversifying the major, one of the most promising aspects of the BRAID research project is that it will establish a unique longitudinal database of thousands of undergraduate computer science students at institutions across the United States. Our research team was recently awarded a $2 million NSF grant to conduct annual follow-up surveys on the approximately 10,000 students who are estimated to respond to the introductory CS course surveys at the 15 BRAID institutions in either 2015-2016 or 2016-2017. Tracking the students beyond their introductory CS course will also allow us to assess changes in their self-perceptions, experiences with computing, perspectives on CS, and career plans. Further, we will track individual students' enrollment patterns so as to provide more precise information about their longer-term participation in CS, including those students who leave the major. We believe that the lessons learned from both the baseline data collection, as well as the follow-up surveys, will prove invaluable to CS departments trying to recruit and retain more women and URM students in the CS major.

About the Authors

Linda Sax is a professor of higher education at UCLA and principal investigator of the BRAID research project. Kathleen Lehman is a Ph.D. student in higher education at UCLA and BRAID project manager. Jennifer Blaney is a Ph.D. student in higher education at UCLA and BRAID senior data manager.

President's FY 2017 Budget Request: A Disappointment for Computer Science

By Peter Harsha and Brian Mosley

On February 9, President Obama released his final Budget Request to Congress, a $4.1 trillion request for fiscal year 2017 (FY17) that some in the science community have called "aspirational," which might be a nice way of saying disappointingly unrealistic.

Before getting into details, it's worth pointing out that the president has been a tremendous champion for federal investments in science throughout his two terms. His administration has launched a large number of new initiatives on brain science, big data, robotics, clean energy, advanced manufacturing, strategic computing, cybersecurity, smart communities, and more that have brought new funding and new energy to federally supported science.

That noted, the president's FY17 budget calls for a funding increase of 4 percent to federal R&D, including a 6 percent increase for basic and applied research. The National Science Foundation (NSF), which supports 82 percent of all fundamental computer science research in U.S. universities, appears to be one of the big beneficiaries of the increased investments, with its budget growing by 6.7 percent under the president's plan. NSF's Computer and Information Science and Engineering (CISE) directorate, where most of the foundation's computer science research support originates, would be slated for a 6.3 percent budget increase under this plan.

These would appear to be more-than-respectable increases, particularly as they come while under a difficult budget agreement, which the president reached with Congress at the end of last year, that would cap discretionary spending growth to just 2 percent in FY 2017.

However, all is not what it seems. The president, hamstrung by the tight discretionary funding caps (and a congressional majority not interested in revisiting them), is asking for new mandatory spending to make up the bulk of his requested increases at NSF and elsewhere in the budget. For example, of the $500 million in requested increase at NSF, the president is asking Congress for $400 million in a new "one-time" mandatory funding stream.

Mandatory spending is funding decided by statute or formula, as with Social Security, Medicare, Medicaid, and federal food stamp programs. It is spending that is essentially on autopilot—Congress doesn't need to reach agreement on it every year. Creating a new mandatory funding stream for NSF, or any other discretionary program, would require special legislation outside the normal appropriations process and the approval of Congress with a Republican majority increasingly inclined to cut federal spending, not create new sources. The likelihood of Congress approving the President's new mandatory funding streams is probably near zero.

So, when you remove the requested increases in the president's budget that rely on mandatory spending, the remaining investments look pretty underwhelming. Overall funding at NSF would be up just 1.3 percent, compared to FY 2016. Funding in the CISE directorate would be up just 0.3 percent, compared to the FY 2016 level, a level that doesn't even keep pace with inflation.

An examination of three specific agency budgets might add some clarity:

National Science Foundation

No other science agency, with the possible exception of the National Institutes of Health (NIH), is as affected by the use of this new mandatory spending tactic as NSF.

At NSF, the research directorates are included under the Research & Related Activities (RRA) budget line. The FY 2017 top-line number for RRA is $6.4 billion, which represents a $392 million increase (6.5 percent) relative to FY 2016. However, of that increase, $346 million is funded using

mandatory funding. If we just look at discretionary funding, as the appropriators will, RRA would receive a bump of only $46 million, or a 0.8 percent increase, relative to FY 2016. That's a significant difference.

Drilling into the directorates of RRA, CISE's FY 2017 increase is almost completely funded under the new mandatory line. CISE would only receive a ~$2 million increase in discretionary funding, or just 0.2 percent above FY 2016. This is about on par with the other research directorates.

Department of Defense

The Department of Defense's Science and Technology (DOD S&T) program is made up of three accounts: 6.1 (basic research), 6.2 (applied research), and 6.3 (advanced research). These accounts are made up of individual accounts for each of the three services (Army, Navy, and Air Force), as well as a Defense Wide (DW) account. DOD S&T overall would receive a 4.1 percent cut under the president's request, going from $13 billion in FY 2016 to $12.5 billion in FY 2017.

DOD 6.1 basic research would see a significant cut under the president's plan. The account would see a 9 percent cut, going from $2.3 billion in the FY 2016 Omnibus to $2.1 billion in the FY 2017 budget request. 6.2 applied research fares slightly better, receiving a 3.6 percent cut, going from $5 billion in FY 2016 to $4.8 billion in FY 2017. DOD 6.3 advanced technology development receives a 2.6 percent cut, going from $5.7 billion in FY 2016 to $5.6 billion in the FY 2017 request.

DARPA would see a 3.7 percent increase, going from $2.87 million in FY 2016 to $2.97 million in FY 2017.

This is a pretty disappointing DOD S&T budget request, but it is not unexpected. The leadership at DOD knows that defense S&T is a Congressional priority, so they use a little gamesmanship and remove money from S&T, expecting Congress to put it back during the budget process, and use it to fund other areas in the request that are not Congressional priorities, in the hope that some of that money will stick during appropriations. The obvious problem with this strategy is the chance that Congress won't put those funds back into S&T. And while the good news is that this request is unlikely to be passed as is, it is still a difficult place to start the process.

Department of Energy

The two key parts of the Department of Energy (DOE) for the computing community are the Office of Science (SC), home of most of the agency's basic research support, and ARPA-E, or the Advanced Research Projects Agency-Energy. For SC, the president's FY 2017 plan includes a very healthy increase of 6.1 percent, using mostly discretionary funding, increasing to $5.67 billion (its FY 2016 budget is $5.35 billion). ARPA-E would see a huge increase of 71.8 percent, growing from $262 million in FY 2016 to $500 million in FY 2017, but the great bulk of that increase comes from mandatory funding.

Within the SC budget, about one-third of the requested increase ($100 million) comes from additional mandatory funding, but it is only within the "University Grants" spending line. As the name implies, this is for funding for "competitive merit-based review of proposals solicited from and provided by the university community." If you remove that $100 million from the $325 million DOE SC is slated to receive in the president's plan, the office would still receive a healthy 4.2 percent bump, or $225 million over FY16.

There is some reprogramming within the computing lines of the office budget that's worth noting. The Advanced Scientific Computing Research (ASCR) program within the Office of Science, where most of the computing research at the agency is located, would see a healthy increase of 6.8 percent (or $42 million more than FY16) in the president's plan. The majority of that increase is slated to go into a new program line focused on the exascale computing program. As a result, funding is "reprogrammed" from the mathematical, computational, and computer sciences research program lines in ASCR and transferred to the new exascale line. Whether this reprogramming will change the character of the work from research to more development-oriented work related to exascale, or whether this is just a reclassification of research which is already focused on exascale problems under a new program line, remains to be seen, but it's something that

bears watching. The bottom line, though: It appears exascale gets almost all of the increase in ASCR's budget, and the rest of the program is flat funded.

With regard to ARPA-E, the great bulk of its massive requested budget increase, of $209 million over FY 2016, would be funded using mandatory spending. The goal, according to Secretary of Energy Ernie Moniz, is to put the agency on a path to a $1 billion budget within 5 years, as recommended in the National Academies *Rising Above the Gathering Storm* report (which is where the idea for ARPA-E originated). However, mandatory spending accounts for $150 million of that planned $209 million increase, so the chances are somewhat slim that the agency will grow as the secretary hopes and the president's plan calls for. Additionally, large increases in the ARPA-E budget request have been almost a tradition since the agency was founded, with Congress rarely approving the president's request. Removing the mandatory spending from the request, the administration is still calling for a large 21.5 percent increase for ARPA-E, or $56 million, which would bring the agency's budget to $318 million (it received $262 million in the FY16 Omnibus).

Our Final Analysis

It is not hard to understand why the administration sought to get a little creative in this request given the cap constraints. But this approach—taking an end-run around the discretionary budget caps by designating new "mandatory spending"—is somewhat troubling for the signals it sends to Congress and, in particular, the appropriators. What they likely see is not that the president has justified a new way to pay for science, but instead that he wouldn't prioritize science investments under the discretionary caps. It appears that in this budget, other programs were more deserving of the discretionary funds.

We knew, given the tight caps for FY17, that this budget cycle would be challenging for science. It's unfortunate that we start even further in the hole with this budget request. The good news, if we can call it that, is that the budget will most likely not be passed until after the November presidential election. Depending on who wins in the fall, it could radically change what a final budget looks like. The community will want to keep a close eye on how things play out, so be sure to check the CRA Policy Blog (cra.org/blog) for new updates.

Highlights of the President's FY2017 Budget Request for CISE

By Jim Kurose, Assistant Director of the National Science Foundation for Computer & Information Science & Engineering

On February 9, 2016, President Obama delivered his Fiscal Year (FY) 2017 Budget Request to Congress. The Request includes approximately $8 billion for NSF and $995 million for the CISE directorate – an increase of approximately $59 million or 6.3 percent above the FY 2015 Estimate for CISE.

The CISE request includes $938 million in discretionary funding, plus $56 million in new mandatory funding. This means that for FY 2017, the Administration will be seeking legislation to provide mandatory funding for NSF on a one-time basis. The purpose of this mandatory funding is to sustain the Administration's prioritization of research and development (For more information, read the President's budget message as well as the White House Fact Sheet for the President's FY 2017 Budget).

The FY 2017 Budget Request for CISE, as in past years, is shaped by investments in core research and infrastructure activities, as well as by investments that support NSF-wide priorities and crosscutting activities. Notably, the Request for CISE is shaped by our increasingly critical role in many national initiatives.

Here are some highlights of the FY2017 Budget Request for CISE:

Strong Commitment to the Core: The FY 2017 Budget Request continues CISE's strong commitment to our core research programs across investment levels, from single-investigator research to center-scale activities, with increased support across all CISE divisions. These investments will continue to push forward the fundamental knowledge base of our discipline and build a solid foundation to support a thriving innovation ecosystem.

Growing Support for Advanced Cyberinfrastructure: The FY 2017 Budget Request for NSF includes significant support for advanced cyberinfrastructure, recognizing its importance in furthering the frontiers of discovery across all areas of science and engineering. Specifically CISE, through its Division of Advanced Cyberinfrastructure (ACI), will begin transitioning its Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) activities (which has long been scheduled to sunset in FY 2017), to two new crosscutting investment areas: the National Strategic Computing Initiative (NSCI) and Data for Scientific Discovery and Action (D4SDA).

NSF's NSCI activities align with the goals articulated in Executive Order 13702 issued by President Obama in July 2015 and will focus NSF's efforts on advancing the Nation's high-performance computing (HPC) ecosystem for scientific discovery and economic competitiveness. NSCI activities are being co-led by NSF, DOE, and the DOD, and involve many other agencies across government; CISE/ACI will represent NSF in this leadership role.

Investments in data – encompassing foundational research; innovative, reusable data and knowledge infrastructure to support data-intensive science; data governance and lifecycle issues; and education of a data-savvy workforce – will remain a strategic focus under D4SDA. This area will be led by CISE and will span research, research infrastructure, and education activities.

Smart & Connected Communities: The FY 2017 Budget Request also includes a new NSF-wide investment for Smart & Connected Communities (S&CC), which aligns with the White House Smart Cities Initiative announced in September 2015. CISE will lead S&CC, which also includes the participation of the Education and Human Resources (EHR); Engineering (ENG); Geosciences (GEO); and Social, Behavioral, and Economic Sciences (SBE) directorates. This area builds on previous CISE investments in US Ignite and Urban Science and aims to improve the quality of life, health, well-being and learning in 21st-century communities. As part of this investment, CISE will support a network of regional research hubs that will advance

fundamental research on advanced networking, physical sensors/devices, large-scale data analysis, and control and automation, all with humans in the loop.

Smart & Autonomous Systems: The FY 2017 Budget Request includes a new activity called Smart & Autonomous Systems (S&AS) under the Cyber-Enabled Materials, Manufacturing, and Smart Systems (CEMMSS) investment area. S&AS will focus on fundamental science and engineering that addresses challenges posed by intelligent physical systems that sense, perceive, and operate in environments that are dynamic, uncertain, and unanticipated. This research activity will accelerate the transformation of static systems, processes, and edifices into intelligent, autonomous systems, such as those that can sense, learn, and adapt. S&AS leverages synergistic advances at the interstices of robotics and cyber-physical systems.

Computer Science Education: The FY 2017 Budget Request includes investments in support of the Computer Science (CS) for All initiative that President Obama announced in his weekly address on January 30, 2016. This high-profile attention reflects the central role that computer and information science and engineering has come to play in so many aspects of our daily lives. Our CS for All efforts, in collaboration with EHR, will support the development of prototypes of instructional materials, assessments, scalable and sustainable professional development models, and teacher resources, along with research to study their effectiveness. The FY 2017 Budget Request also includes investment in undergraduate education through our collaboration with EHR and ENG on REvolutionizing engineering and computer science Departments (RED).

An Emphasis on Early-Career Researchers: The FY 2017 Budget Request includes a special emphasis on early-career researchers. Early-career investigators not only catalyze the next generation of breakthrough discoveries, but also embrace novel approaches for accelerating the research enterprise more broadly – including significant use of computation and data-intensive techniques, along with the pursuit of increasingly interdisciplinary research that falls at the boundaries of traditional academic disciplines.

Continuing Collaborative Efforts: The FY 2017 Budget Request continues CISE's leadership in a number of crosscutting areas and programs that typically involve multiple NSF directorates and federal agencies.

- Secure and Trustworthy Cyberspace (SaTC), which aims to secure our Nation's cyberspace, is in partnership with the EHR, ENG, Mathematical and Physical Sciences (MPS), and SBE directorates.
- Cyber-Physical Systems (CPS) aims to deeply integrate computation, communication, and control into physical systems. The CPS program is in collaboration with ENG as well as the Department of Homeland Security (DHS), Department of Transportation (DOT), National Aeronautics and Space Administration (NASA), National Institutes of Health (NIH), and U.S. Department of Agriculture (USDA).
- The National Robotics Initiative (NRI) aims to develop the next generation of collaborative robots to enhance personal safety, health, and productivity and is in partnership with ENG, EHR, and SBE, as well as the Department of Defense (DOD), Department of Energy (DOE), NASA, NIH, and USDA.
- Smart and Connected Health (SCH), which aims to accelerate the development and use of innovative approaches that would support the transformation of healthcare knowledge, delivery, and quality of life through IT, in partnership with ENG and SBE as well as NIH.
- Cyberlearning and Future Learning Technologies (CFLT) integrates advances in technology with advances in the way people learn. CFLT enables better use of technology to more effectively promote learning, as well as design and evaluate new technologies for integration in learning environments. CFLT is in collaboration with EHR and ENG.

CISE will also continue to participate in other NSF-wide priority areas including Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS), Understanding the Brain (UtB), and NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES). Additionally, CISE is a key participant in the NSF-wide Clean Energy R&D emphasis.

Investments in CISE research, education, and infrastructure have returned exceptional dividends to our Nation. Computer and information science and engineering is ubiquitous, engages and intertwines with many communities, and is a field that is rapidly changing with the potential for profound societal impact. I invite you to continue to work with us to transform the world for decades to come.

CRA Holds Annual Computing Leadership Summit

On February 22, near Washington, D.C., the Computing Research Association hosted its annual Computing Leadership Summit for senior leadership of CRA affiliate societies and the National Research Council's Computer Science and Telecommunications Board.

Several engaging sessions provided valuable information on current issues important to the organizations. CRA Director of Government Affairs Peter Harsha explained the President's FY17 federal budget request and its the implications for science. Randy Bryant, who recently completed a rotation at the White House Office of Science and Technology Policy, and Margaret Martonosi, a CRA board member who is currently a Jefferson Science Fellow at the State Department, both provided insights and updates about their time in government positions. Jim Kurose, assistant director for the NSF's CISE Directorate, gave an update on current and new initiatives and hosted a Q&A session. (Bryant, Kurose, and Martonosi have all been featured in the *Computing Research News* CS in DC column, which profiles computing researchers in policy roles.)

Each organization was able to discuss its current projects and new initiatives, and during this process, many opportunities for collaboration and support were identified.

ACM President Alexander Wolf (third from left), CRA board member Mary Hall (third from right), mingle with CRA Career Mentoring Workshop attendees.

Immediately following the meeting, the Computing Leadership Summit participants attended a reception with participants of CRA's Career Mentoring Workshop, and CRA board members.

2016 CRA Career Mentoring Workshop

The 2016 CRA Career Mentoring Workshop was held February 22-23 in Arlington, Virginia. More than 80 attendees had an opportunity to learn from about 20 speakers who are distinguished researchers, including several CRA board members, and representatives from the National Science Foundation (NSF). The workshop provided career advice and mentoring activities for assistant professors in computer science.

In addition to panel sessions, the workshop was interspersed with opportunities to network with senior researchers and representatives from government agencies. Attendees learned about how to improve grant proposals, preparing for tenure, managing work/life balance, and planning a research career. Workshop participants attended a reception with leaders of CRA affiliate societies and CRA board members, and participants spent part of the final day meeting with program directors from NSF's Computer and Information Science and Engineering Directorate.

CRA board members Sarita Adve (University of Illinois at Urbana-Champaign), who attended the workshop 23 years ago, and Dan Grossman (University of Washington), who attended the workshop 12 years ago, did a great job organizing this year's workshop.

CCC White Paper - Accelerating Science: A Computing Research Agenda

The Computing Community Consortium (CCC) Convergence of Data and Computing Task Force, led by CCC Council Members Vasant G. Honavar from Pennsylvania State University, Mark D. Hill from University of Wisconsin-Madison, and Katherine Yelick from University of California at Berkeley, has just released another community white paper called Accelerating Science: A Computing Research Agenda. This white paper seeks to articulate a research agenda for developing cognitive tools that can augment human intellect and partner with humans on the scientific process.

The recent advances in sensing, measurement, storage and communication technologies and the resulting emergence of "big data" offer unprecedented opportunities for not only accelerating scientific advances, but also enabling new modes of discovery. However, there is a huge gap between our ability to acquire, store, and process data and our ability to make effective use of the data to advance science.

Accelerating science to keep pace with the rate of data acquisition and data processing calls for focused investments in a research program that encompasses both:

- Development, analysis, integration, sharing, and simulation of algorithmic or information processing abstractions of natural processes, coupled with formal methods and tools for their analyses and simulation;
- Innovations in cognitive tools that augment and extend human intellect and partner with humans in all aspects of science. This requires:
  - The formalization, development, analysis, of algorithmic or information processing abstractions of various aspects of the scientific process;
  - The development of computational artifacts (representations, processes, software) that embody such understanding; and
  - The integration of the resulting cognitive tools into collaborative human-machine systems and infrastructure to advance science.

A research agenda focused on accelerating science can be expected to yield fundamental advances in multiple areas of computer and information sciences and cognitive tools. The resulting new cognitive tools can help realize the transformative potential of big data in many sciences, by dramatically accelerating science. **Read the full white paper to learn more.**

In Memoriam: Joanne Cohoon

The Computing Research Association is sad to announce the loss of Joanne Cohoon, a leader in the evaluation efforts of our programs, who died on February 14 at the age of 61. Joanne was involved with the CRA for more than a decade. In 2006, she was the principal investigator on an NSF-funded study that was initiated to test the validity of an earlier report, "Recruitment and Retention of Women Graduate Students in Computer Science and Engineering" (Cuny and Aspray, 2001). Joanne co-authored the report based on the study, "Recruiting and Retaining Women Graduate Students in Computer Science and Engineering," which summarizes and expands on the results of a workshop and outlines research-based practices likely to promote gender balance in graduate computing programs.

Joanne joined the CRA-W Board in 2007 and was responsible for leading their evaluation efforts. Along with CRA Director of Statistics and Evaluation Betsy Bizot, she oversaw the design of the Data Buddies project, which has been a great asset for the computing community. In 2013, Data Buddies became an official activity of the CRA's in-house evaluation and social science research center, called Center for Evaluating the Research Pipeline (CERP). Joanne served on the CERP Steering Committee, which has helped shape CERP into the effective committee that it is today.

Last year, Joanne was named the A. Richard Newton Educator ABIE Award Winner, which recognizes educators who develop innovative teaching practices and approaches that attract girls and women to computing, engineering, and math.

We are grateful for Joanne's contributions to the computing community, and she will be dearly missed.

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ACM-W supports, celebrates, and advocates internationally for
the full engagement of women in all aspects of the computing field.

women.acm.org

Association for Computing Machinery

acm's women in computing acm-w

Be Creative. Stay connected. Keep inventing.

CRA at AAAS Family Science Days

By Shar Steed, Communications Specialist

Juliana assisting a participant.

The Computing Research Association had an action-packed weekend engaging the public with science at AAAS Family Science Days. There was a high turnout of families from the Washington, D.C. area who were eager to learn more about science and have some fun with hands-on activities.

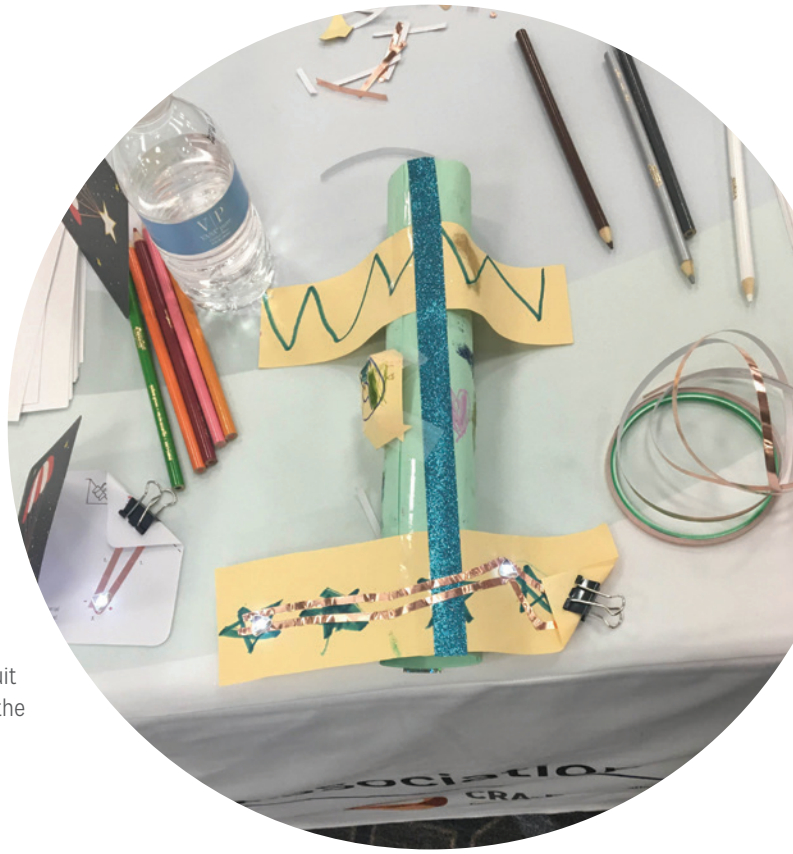
CRA staff, along with two representatives from Chibitronics, presented the Circuit Stickers Project, where participants got to create, craft, and code a light-up card with LED circuits.

There was a constant stream of traffic to the CRA booth, with both kids and adults excited to make their own creations.

It was a joy to hear participants of all ages exclaim, "This is so cool!" when their cards successfully lit up. For many, it sparked a curiosity about electricity and circuits, and we were able to engage in conversations about how it all works. Several participants were inspired to create their own designs and apply what they learned to light up all kinds of objects.

CRA would like to thank the two Chibitronics representatives, Alisha Panjwani and Juliana Nazaré, for assisting the CRA staff and for their expertise. Alisha and Juliana are researchers at the MIT Media Lab.

The CRA project was part of a larger exhibit focused on engaging youth in robotics and circuitry with KID Museum and Robotics Education & Competition Foundation.



One participant added the circuit and LED lights to his model of the international space station.

Announcing the First Microsoft Open Source Challenge

By Shar Steed, Communications Specialist

Microsoft Research is delighted to announce its first Open Source Challenge that uses the many and various open source computer science tools from our researchers. From artificial intelligence to programming models, cryptography to education, there is something for every enquiring mind.

- Experience the power of open source software from a top research lab.
- Join students all round the world in solving problems with Microsoft's open source tools.
- Win big prizes or the opportunity to interview for an internship at Microsoft Research.

Microsoft Research has more than 50 projects that span the range of computer science from artificial intelligence to visualization, from cryptography to programming models. In these projects, the researchers have created open source tools and made them available for all. The objective of this challenge is to make the tools widely known and available and to elicit exceptional ideas from bright students around the world.

How to Enter

Register for the Open Source Challenge so you can receive updates about the contest. In the challenge you will be able to use any of the open source tools listed on the Portal to solve a novel problem, and then report on your findings. So, think of a project. Then acquire the tool and work with it to solve your problem. Finally, write a report about your findings and submit it. Your report submission will enter you into the Challenge.

See http://aka.ms/opensourcechallenge for full details. Closing date: April 11, 2016.

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Column Editor

Expanding the Pipeline
Patty Lopez, Intel

Professional Opportunities

Bucknell University

Computer Science Department

VAP in Computer Science one (or more)

Bucknell University seeks applications for one (or more) Visiting Assistant Professor position(s) in computer science for a one year visiting position (with the possibility of extension to a second year) beginning mid-August 2016. Outstanding candidates in all areas of computer science will be considered. The successful candidate must be able to participate in the teaching of required core courses. Candidates are expected to have a Master's degree and be ABD, or hold a PhD by the beginning of the 2016 fall semester. We seek a teacher-scholar with a demonstrated ability to work successfully with a diverse student body. A strong commitment to excellence in teaching and scholarship is also required.

Bucknell University is a private, highly selective, national university where strong liberal arts and professional programs in engineering, business, education, and music complement each other. The B.S. programs in computer science are ABET accredited. The computing environment is Linux/Unix-based. More information about the department can be found at: http://www.bucknell.edu/ComputerScience/.

Applications will be considered as received and recruiting will continue until the position is filled. Candidates are asked to submit a cover letter, CV, a statement of teaching philosophy and research interests, and three confidential letters of recommendation. Please include in your application contact information, including an email address, for each of the three references.Applications are only accepted through Interfolio ByCommittee. Please go to http://apply.interfolio.com/34120 to apply.

Please direct any questions to Professor Stephen Guattery of the Computer Science Department at guattery@bucknell.edu.

Bucknell University, an Equal Opportunity Employer, believes that students learn best in a diverse, inclusive community and is therefore committed to academic excellence through diversity in its faculty, staff, and students. Thus, we seek candidates who are committed to Bucknell's efforts to create a climate that fosters the growth and development of a diverse student body. We welcome applications from members of groups that have been historically underrepresented in higher education.

Carnegie Mellon University (Qatar campus)

Department of School of Computer Science

Two Faculty Positions

Carnegie Mellon University in Qatar invites applications for two teaching-track positions at any level, one in the fields of robotics and artificial intelligence (position CMUQ-CS15-003), and the other in the fields of programming languages and computational logic (position CMUQ-CS15-004). This is a career-oriented renewable appointment that involves teaching high-achieving international undergraduate students. Candidates must have a Ph.D. in Computer Science or related field, substantial exposure to Western-style education, good leadership skills, an outstanding teaching record, and excellent research accomplishments.

The position offers a competitive salary and benefits including a foreign service premium, excellent international health care coverage, and allowances for housing, transportation, dependent schooling, and travel.

Further information can be found at http://csjobs.qatar.cmu.edu.

Carnegie Mellon University

Executive Director

The Human-Computer Interaction Institute at Carnegie Mellon University is hiring an Executive Director for our Master's of Human-Computer Interaction Program.

More information can be found at: http://hcii.cmu.edu/careers/2016/executive-director-masters-human-computer-interaction-program

Carnegie Mellon University (Qatar campus)

School of Computer Science

Two Postdoctoral Positions

Carnegie Mellon University in Qatar invites applications for two postdoctoral positions (position CMUQ-CS15-002). These positions are designed for candidates who are interested in enhancing their teaching portfolio, along with their research portfolio, to be better prepared for future academic positions. The positions expect candidates to relocate to Carnegie Mellon's campus in Doha with a start no later than August 1, 2016. Responsibilities include supporting two undergraduate courses per year, holding recitations/office hours and working closely with students. In addition to this teaching load, successful candidates are encouraged to conduct research independently or in collaboration with any CMU-Q faculty of their choice.

We are particularly interested in candidates in the areas of Distributed systems and Computer networks.

Further information can be found at http://csjobs.qatar.cmu.edu.

Cleveland State University, Cleveland, Ohio

Department of Electrical Engineering and Computer Science

Washkewicz College of Engineering

Tenure-Track Faculty Position in Computer Science

The Department of Electrical Engineering and Computer Science at Cleveland State University invites applications for a tenure

Professional Opportunities

track position in Computer Science at the Assistant Professor level. Candidates in all areas of Computer Science will be considered though the department is particularly interested in areas of Artificial Intelligence, Machine Learning, Robotics, Computer Vision, Cybersecurity, Health Informatics, High-Performance Computing, Multimedia Computing, Mobile Computing, and Programming Languages.

The anticipated start date is August 2016. For full details on the position, including information on how to apply, please go to: https://hrjobs.csuohio.edu/postings/5305

Apply Here: http://www.Click2Apply.net/wfd27vtf2w

Colgate University

Two-Year Visiting Position in Computer Science

The Computer Science department at Colgate University invites applications for a two-year Visiting Assistant Professor position beginning fall semester 2016. We encourage candidates in all areas of specialization to apply.

Each semester, candidates can expect to teach two courses plus associated labs. Initial teaching will focus on introductory courses, but there may be later opportunities to teach upper-level courses in the candidate's area of expertise. Colgate offers the candidate support for travel, professional development, and student researchers.

Colgate is a highly selective undergraduate liberal-arts college in central NY committed to promoting excellence in both teaching and research. Colgate is an EEO/AA employer; women and candidates from historically underrepresented groups are especially encouraged to apply.

Review of applications will begin March 15, 2016 and will continue until the position is filled.

For more information and to apply, please visit https://academicjobsonline.org/ajo/jobs/7046.

CUNY City College

Assistant Professor - Advanced Computer Architecture - Computer Science (tenure track)

The Computer Science Department of the City College of New York is seeking outstanding candidates for a tenure track position at the Assistant Professor level.

Advanced Computer Architecture: including embedded systems, reconfigurable computing, multiple-core architectures, systems-on-chip and networks-on-chip, programmable and adaptive architectures and digital system design and synthesis. Specialities in data-intensive and data-driven parallel computing in clustered environments, pervasive and wearable computing systems, hardware simulation tools, digital circuit and FPGA design in HDL are also considered.

The successful candidates will be expected to be actively involved in research, teach both undergraduate and graduate level courses, mentor undergraduate and graduate students, and contribute broadly to the academic life of the department.

An outstanding academic or industrial record and a PhD in Computer Science or related field are required. The successful candidate must demonstrate a strong commitment to excellence in undergraduate and graduate teaching and the ability to attract significant research funding.

To apply, please view the full posting (Job ID 14473) at http://cuny.edu/employment/jobsearch.html and follow all instructions. For information about the Grove School of Engineering and the Computer Science Department please see http://www.ccny.cuny.edu/engineering/index.cfm.

CUNY City College of NY

Assistant Professor - Data Science - Computer Science (Tenure Track)

The Computer Science Department of the City College of New York is seeking outstanding candidates for a tenure track position at the Assistant Professor level.

Data Science: including machine learning and high performance computing. Examples of subfields of particular interest within machine learning include applications in computer vision and image analysis, data mining, biomedical computing, and computational linguistics. Examples of subfields of particular interest within high performance computing include applications in data management and distributed systems.

The successful candidates will be expected to be actively involved in research, teach both undergraduate and graduate level courses, mentor undergraduate and graduate students, and contribute broadly to the academic life of the department.

An outstanding academic or industrial record and a PhD in Computer Science or related field are required. The successful candidate must demonstrate a strong commitment to excellence in undergraduate and graduate teaching and the ability to attract significant research funding.

To apply, please view the full posting (Job ID 14472) at http://cuny.edu/employment/jobsearch.html and follow all instructions. For information about the Grove School of Engineering and the Computer Science Department please see http://www.ccny.cuny.edu/engineering/index.cfm.

Professional Opportunities

Iowa State University

Software Engineering Program with home Department in Computer Science

Lanh and Oanh Nguyen Chair in Software Engineering

Position Description:
The Software Engineering Program at Iowa State University, jointly administered by the Departments of Computer Science (ComS) and Electrical and Computer Engineering (ECpE), is seeking applications for the Lanh and Oanh Nguyen Chair in Software Engineering. This will be a joint ComS and ECpE appointment at the Associate or Full Professor level depending on qualifications, with tenure home in ComS.

Responsibilities for this position include teaching courses at both the undergraduate and graduate levels, supervising graduate and undergraduate students, sustaining an exceptional publication record and externally funded research program, and participating in technical committees and outreach activities.

Successful candidates will have an outstanding record of publications and funded research that complements current activities in the Software Engineering Program through both internal and external interdisciplinary collaborations, as well as excellent communication and research leadership.

Application Instructions:
For more information on this position or to apply, follow this link: http://www.iastatejobs.com/postings/15486.

Iowa State University is a Carnegie RU/VH institution (research university – very high research activity), is a member of the Association of American Universities (AAU), and is ranked by U.S. News and World Report as one of the top public universities in the nation. Over 36,000 students are enrolled and served by over 6,200 faculty and staff (see www.iastate.edu).

Ames, Iowa is a progressive community of 60,000, located approximately 30 minutes north of Des Moines, and recently voted the healthiest city in the nation by USA Today and the best college town in the nation by Livability.com (see www.visitames.com).

Iowa State University is an Equal Opportunity/Affirmative Action employer. All qualified applicants will receive consideration for employment without regard to race, color, age, religion, sex, sexual orientation, gender identity, genetic information, national origin, marital status, disability, or protected veteran status, and will not be discriminated against. Inquiries can be directed to the Director of Equal Opportunity, 3350 Beardshear Hall, (515) 294-7612.

DATA TO INSIGHT CENTER
INDIANA UNIVERSITY
Pervasive Technology Institute

Indiana University, Bloomington
School of Informatics and Computing (SOIC)
Pervasive Technology Institute (PTI)
Data to Insight Center (D2I)
Postdoctoral Fellow

The Data To Insight Center (D2I) at Indiana University seeks a Postdoctoral Fellow to carry out R&D in secure Big Data systems. The successful applicant will be responsible for leading efforts, taking research prototypes to production, and mentoring graduate student work within the context of a recent grant that funds advancements to the secure data commons of HathiTrust's Research Center, which provisions computational analysis over millions of texts. The successful applicant has a publication record, and will participate in dissemination, outreach, and training of research results and new tools. Must work well in a team setting.

Minimum Qualifications: PhD in Computer Science, Computer Engineering, or related field; Publications or experience in security and experimental performance evaluation on clusters or cloud; demonstrated experience in engaging users of research tools.

Additional Qualifications: Interest in Big Data text/data mining, data protection; Experience with any of following is a plus: web security, virtualization or containerization, Java, MapReduce or Apache Spark.

Appointment Type: Twelve-month non-tenure track appointment subject to satisfactory performance and funding; Position is currently funded for three years and has potential to be extended.

Apply Online at: http://indiana.peopleadmin.com/postings/2260

For Best Consideration Apply By: March 18, 2016

Ideal Start Date for position: April 18, 2016

Questions regarding the position or application process can be directed to Jenny Stevens, jolmesst@indiana.edu at the Data To Insight Center

Indiana University is an equal employment and affirmative action employer and a provider of ADA services. All qualified applicants will receive consideration for employment without regard to age, ethnicity, color, race, religion, sex, sexual orientation or identity, national origin, disability status or protected veteran status.

John Jay College of Criminal Justice/The City University of New York

Assistant Professor in Computer Science

The Math & CS Dept. of John Jay College of Criminal Justice seeks to fill a tenure-track position at the assistant professor level. The successful candidate will teach courses in the Computer Science and Information Security major, the Digital Forensics and Cybersecurity graduate program, and potentially mentor doctoral students in the Ph.D. program in Computer Science at the Graduate Center of CUNY. Candidates working

Professional Opportunities

in areas related to cyber security or digital forensics are of particular interest.

For details and to apply go to www.cuny.edu, Employment (Job Id: 14390). JJC is an AA/EOE. Posting closes on March 21, 2016.

Kent State University

Tenure-Track Faculty Positions – Computer Science

Kent State University's Department of Computer Science is seeking applicants to fill two tenure-track positions. We seek applicants whose expertise focuses on multiple areas; a primary area of interest is big-data analytics and data mining. We have a high interest/need in cyber and network security, computer engineering, machine learning and robotics, smart devices, green computing and internet-of-things, social and complex networks, bio-medical informatics, and visualization. Exceptional candidates in all closely related areas are encouraged to apply.

Successful candidates will be expected to establish an extramurally funded research program, engage in collaborative research, direct theses and dissertations, and exhibit a commitment to excellence in undergraduate and graduate education. Qualifications include a Ph.D. degree in Computer Science or a related field. We also invite applicants with related industrial and/or post doctorial experience. Salary and startup funds are competitive and commensurate with academic qualifications and prior experience.

Information about the department can be found at www.kent.edu/cas/cs.

To see the complete job posting and to apply for the position, please go to: https://jobs.kent.edu/postings/search.

Lawrence Berkeley National Laboratory

AC-Computing

ESnet and Scientific Networking Division Director - 81980

Are you an exceptional leader with a passion for networks that support large-scale scientific collaborations? Lawrence Berkeley National Laboratory (Berkeley Lab) is seeking a new Director for the Department of Energy's (DOE) Energy Sciences Network (ESnet - http://www.es.net/), who will serve concurrently as Director of the Lab's Scientific Networking Division.

ESnet is a cutting edge scientific network that interconnects the DOE national laboratory system and other research institutions, enabling multi-domain collaboration on some of the world's most important scientific challenges including energy, climate science and the origins of the universe. ESnet is widely-regarded as a global innovator in network architectures, tools, and applications, and is currently the fastest scientific network in the world. ESnet offers resources and services for the scientific community, and will play a key role as scientific exploration continues to be more data intensive and distributed amongst a variety of researchers and research networks. The ESnet Director will be responsible for running this critical DOE networking infrastructure, collaborating globally with other research networks, and providing leadership in research and deployment of advanced networking technology in support of data driven science.

What you will do:

As the ESnet Director, you will also serve as the Division Director for the Scientific Networking Division (SND) at Berkeley Lab. The Division is part of the Computing Sciences Area, which also includes the Computational Research Division and the National Energy Research Scientific Computing Center (NERSC). As a Division Director at Berkeley Lab, you will work with

LEWIS UNIVERSITY
A Catholic and Lasallian University

Tenure Track Positions in Computer Science and Computer Engineering

Lewis University seeks qualified individuals for full-time faculty positions in Computer Science and Computer Engineering to begin fall 2016. Qualifications: Ph.D., ability to lead student research initiatives, & genuine commitment to preparing students of diverse backgrounds.

More information: https://jobs.lewisu.edu

Lewis University is an equal opportunity employer and committed to diversity. Applicants of a diverse background are highly encouraged to apply.

Professional Opportunities

Computing Sciences and as a member of Berkeley Lab's Senior Management team, set the strategic directions for the Laboratory in computing, networking, mathematics and data. The Director will work closely with DOE's Office of Science on research, innovation, planning and execution of advanced networking needs for science, and with Laboratory management on the formulation and direction of programs and projects that enhance Berkeley Lab's preeminence as a national laboratory.

How To Apply

Apply directly online at http://50.73.55.13/counter.php?id=61081 and follow the on-line instructions to complete the application process.

Equal Employment Opportunity

Equal Employment Opportunity: Berkeley Lab is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, or protected veteran status. Click here (http://www.dol.gov/ofccp/regs/compliance/posters/pdf/eeopost.pdf) to view the poster: "Equal Employment Opportunity is the Law".

Mount Holyoke College

Visiting Faculty Positions in Computer Science

The Computer Science Department at Mount Holyoke College invites applications for two full-time, visiting faculty members in computer science to begin fall 2016. One is a 2-year position and the other is a 1-year position. We will consider candidates from any research area who have a strong interest in teaching and working closely with undergraduate students. The teaching load is five courses per year, and the successful candidate will teach both introductory and advanced classes.

Applicant must have a Ph.D in computer science, or expect to complete one by the start of the contract period. Teaching experience is required.

Applications must be made online at https://jobs.mtholyoke.edu/. Candidates will submit a cover letter, CV, and three statements concerning (1) teaching philosophy, (2) research interests, and (3) a statement about mentoring a diverse student body. Applicants should also arrange to have three letters of reference submitted on their behalf and at least one letter should address teaching experience. To be assured full consideration applications must be completed by February 15, 2016.

Mount Holyoke is an undergraduate liberal arts college for women with 2,200 students and 220 faculty. Over half the faculty are women; one-fourth are persons of color. Mount Holyoke College is located about 80 miles west of Boston in the Connecticut River valley, and is a member of the Five College Consortium consisting of Amherst, Hampshire, Mount Holyoke, and Smith Colleges and the University of Massachusetts. Mount Holyoke is committed to fostering multicultural diversity and awareness in its faculty, staff, and student body and is an Equal Opportunity Employer. Women and persons of color are especially encouraged to apply.

The full ad is available at https://jobs.mtholyoke.edu/.

Oakland University

Department of Electrical and Computer Engineering

Two Asst Professorships - Computer Engineering / Robotics

The Department of Electrical and Computer Engineering at Oakland University (OU) invites applicants for two tenure-track faculty positions starting in Fall 2016. Applicants must have an earned Ph.D. degree or nearing completion of their doctoral studies in Electrical Engineering or related fields. Research and teaching with commitment to excellence is required.

- Asst Professor in Computer Engineering - Preference will be given to applicants with

Department of Media and Information

TENURE SYSTEM ASSISTANT PROFESSOR IN DATA SCIENCE AND HEALTH

The Department of Media and Information (M&I) at Michigan State University (MSU) invites applications for a full-time, tenure system faculty position at the rank of Assistant Professor in the area of data analytics with a strong interest in health, health IT, e-health, and/or m-health.

More details are available at **http://cas.msu.edu/job/posting-1632/**. To apply, please visit the Michigan State University Employment Opportunities website (**https://jobs.msu.edu**), refer to Posting **#1632,** and complete an electronic submission. Review of applications will begin immediately, and continue until the position is filled.

MICHIGAN STATE UNIVERSITY

MSU is committed to achieving excellence through cultural diversity. The University actively encourages applications and/or nominations of women, persons of color, veterans and persons with disabilities.

MSU is an Affirmative Action, Equal Opportunity Employer.

Professional Opportunities

expertise in computer engineering including architecture, microprocessors, GPUs, multi-core architectures, real-time and parallel systems, mixed-signal embedded systems, and other areas. Apply at: http://jobs.oakland.edu/postings/7068

- Asst Professor in Robotics - Preference will be given to applicants with expertise in robotics including autonomous robotics (ground, aerial, and marine), smart cars, human-robot interaction, biomedical or biomimetic robotics, industrial robotics, advanced manufacturing, robotic systems control, and other areas. Apply at: http://jobs.oakland.edu/postings/7071

The successful candidates will be expected to teach and develop undergraduate and graduate courses and laboratories, initiate and integrate strong research programs, direct graduate students, and attract external research funding.

OU is a Ph.D. offering public institution located in southeastern Michigan at the intellectual center of the Automotive Industry, adjacent to the Oakland Technology Park, and within the Oakland County Automation Alley. OU offers an exemplary fringe benefit package. The ECE Department has 17 tenure track faculty members and a special instructor, and offers BSE, MS, and Ph.D. programs.

For full consideration applications should be submitted by March 20, 2016. Review will continue until the position is filled.

Oakland University is an Affirmative Action/ Equal Opportunity Employer and encourages applications from women and minorities.

Oberlin College

Full-Time, Tenure-Track Faculty Position

The Department of Computer Science at Oberlin College invites applications for a full-time, tenure-track faculty position starting in the Fall of 2016 with a specialization in Software Systems (Compilers, Operating Systems, Networks, Databases, or a related field). Applicants at all ranks will be considered.

To be assured of consideration, submit a letter of application, a curriculum vitae, teaching and research information, graduate academic transcripts, and at least three recent letters of reference* to https://academicjobsonline.org/ajo/jobs/7011 by March 11, 2016.

Ohio University

Tenure Track Assistant Professor Position

The Russ College of Engineering and Technology at Ohio University invites applications for a full-time, benefits eligible, tenure track assistant professor position in Industrial and Systems Engineering to join us as we create for good. The selected applicant will be expected to perform excellent research, teaching, and service. Candidates must have an earned doctorate in industrial engineering, or a related discipline. Candidates are expected to have strong research potential for publishing their work and attracting funding, as well as an interest in teaching at both the undergraduate and graduate levels. Candidates must have research interests in either information systems or analytics. Departmental support will include initial reduced teaching loads, competitive salary, and generous start-up funds. Research and other activities in the Russ College are supported in part by a recent record-setting $124M estate gift from benefactors Fritz and Dolores Russ.

Ohio University, a rural campus located in the picturesque Hocking Hills of Southeast Ohio, enrolls about 22,000 students.

The position will remain open until filled; for full consideration please apply by April 17, 2016 at www.ohiouniversityjobs.com/postings/17753.

Pace University, NY

Two tenure-track faculty positions in CS, IS, SE and IT

The Seidenberg School of Computer Science and Information Systems at Pace University invites outstanding applications for two full-time tenure-track faculty positions at the rank of Assistant / Associate Professor in Computer Science, Software Engineering, Information Systems, and Information Technology.

The candidates must possess a Ph.D. They must demonstrate evidence of outstanding teaching, scholarly accomplishment, service and funding activity. They are expected to lead high-quality instructional and scholarly research activities, play a major role in the development of academic programs and students' advisement, and establish and maintain professional relationships. Salary is competitive and commensurate with qualifications.

Please consult the full job posting to apply here: http://bit.ly/1nQUwYF

Pace University is an Equal Opportunity, Affirmative Action employer. Minorities, women, veterans and individuals with disabilities are encouraged to apply.

The University of Central Arkansas

Two Tenure-Track Positions in Computer Engineering

The Department of Computer Science at the University of Central Arkansas is seeking to fill two tenure track assistant/associate professor positions in computer engineering beginning August 2016. Currently, the Department has 11 full-time faculty members and offers an ABET accredited BS Program in computer science and an MS program in applied computing.

Each position requires a doctorate in degree in computer engineering or a closely related

Professional Opportunities

field. All areas of computer engineering will be considered. Current research fields in the department include bioinformatics, data mining, networking, virtual reality, applied computing, video compression and software engineering. Duties include teaching undergraduate and graduate courses; advising student projects and research.

Applicants should submit: a letter of application, current vita, copies of graduate transcripts, statements of teaching and research philosophy, and three letters of reference. All materials should be uploaded to: https://jobs.uca.edu (Posting number: F0042016). Review of applications will begin March 1, 2016 and will continue until the position is filled. Questions may be sent to the chair of the department at rameshg@uca.edu. Additional information about the department is available at https://uca.edu/computerscience/. UCA is an EO/AA Employer.

Conway is a growing city of over 60,000 with two private colleges and various industries in IT in addition to the University of Central Arkansas. Residents enjoy easy access to both a large urban center (Little Rock is 30 minutes away via I-40) and pristine wildlife areas such as the Buffalo National River, and the Ozark and Ouachita Mountains.

Rochester Institute of Technology

FULL-TIME INSTRUCTIONAL FACULTY DIGITAL IMAGING AND REMOTE SENSING LABORATORY (DIRS)

The Chester F. Carlson Center for Imaging Science at the Rochester Institute of Technology invites applicants for a tenure track assistant professor position in the Digital Imaging and Remote Sensing Laboratory (DIRS). We are seeking candidates whose research expertise and knowledge in the remote sensing field will complement the existing and well-established expertise within DIRS in passive and active electro-optical systems, data exploitation, modeling and simulation, and environmental applications. Areas of complementary expertise of interest include, but are not limited to, unmanned aerial systems, synthetic aperture radar, and deep learning. Individuals working in the field of planetary remote sensing will be considered. The successful candidate will be expected to advise graduate students, teach graduate level remote sensing courses and undergraduate courses relevant to imaging science, and develop an externally funded research program. More information on the activities of the DIRS group can be found at http://www.cis.rit.edu/remote-sensing/about . Further, We are seeking an individual who has the ability and interest in contributing to a community committed to student centeredness; professional development and scholarship; integrity and ethics; respect, diversity and pluralism; innovation and flexibility; and teamwork and collaboration.

Required Minimum Qualifications

- An earned doctoral degree (Ph.D. or international equivalent) by the hire date
- A record of scholarly publication in remote sensing
- The ability to teach CIS courses related to remote sensing at the undergraduate and graduate levels
- Potential for obtaining external research funding
- Ability to communicate effectively
- Ability to contribute in meaningful ways to the college's continuing commitment to cultural diversity, pluralism, and individual differences.

Required Minimum Education Level PhD

Apply online at **http://apptrkr.com/752242**, search openings, then Keyword Search: 2245BR.

Additional Details

RIT does not discriminate. RIT promotes and values diversity, pluralism and inclusion in the work place. RIT provides equal opportunity to all qualified individuals and does not discriminate on the basis of race, color, creed, age, marital status, sex, gender, religion, sexual orientation, gender identity, gender expression, national origin, veteran status or disability in its hiring, admissions, educational programs and activities. RIT provides reasonable accommodation to applicants with disabilities, veterans or wounded warriors where appropriate.

University of Central Florida, Orlando, Florida

To be determined based on the applicant's academic area of training; anticipated to be within the College of Engineering and Computer Science.

Assistant Professor, Digital Forensics

The National Center for Forensic Science (NCFS) at the University of Central Florida (UCF) is seeking an Assistant Professor specializing in Digital Forensics to begin summer or fall of 2016. The nine-month, tenure-track Assistant Professor will be jointly hired by the NCFS and a tenure home department to be determined based on the applicant's academic area of training. The home department is anticipated to be within the College of Engineering and Computer Science. The successful candidate will contribute to teaching in the undergraduate and graduate programs in both the tenure home department and the UCF Digital Forensic curriculum and is expected to develop an externally-funded, nationally-competitive research program. A competitive startup package can be expected. The NCFS has historically been closely aligned with the College of Engineering and Computer Science, which offers a M.S. in Digital Forensics.

A Ph.D. in an appropriate discipline from an accredited institution by the start of the appointment period is required (the doctoral degree is expected to be awarded by the hire date). Preference will be given to those demonstrating a strong interest in digital forensics and a willingness to teach and conduct research in digital forensics and forensic science.

The University of Central Florida, the nation's second-largest university with

Professional Opportunities

more than 63,000 students, has grown in size, quality, diversity, and reputation in its first 50 years. Today, the university offers more than 200 degree programs at its main campus in Orlando and more than a dozen other locations. UCF is an economic engine attracting and supporting industries vital to the region's future while providing students with real-world experiences that help them succeed after graduation. For more information, visit http://ucf.edu.

UCF is an equal opportunity/affirmative action employer. All qualified applicants are encouraged to apply, including minorities, women, veterans and individuals with disabilities. As a Florida public university, UCF makes all application materials and selection procedures available to the public upon request.

Application Instructions: Applicants must apply online at https://www.jobswithucf.com/postings/44303 and upload the following at the time of application: a letter of application, curriculum vita, description of research plan, teaching philosophy and interest, the names and contact information of three professional references, and a suggested tenure home department. Please arrange to have three letters of reference sent to **Judith Stout** (Judith.Stout@ucf.edu) and indicate in the subject line "Assistant Professor Digital Evidence/NCFS." Review of applications will begin immediately and continue until the position is filled (open timeline). Questions regarding this search may be directed to Dr. Matthieu Baudelet, chair, Digital Forensics/NCFS Search Committee, at baudelet@ucf.edu.

UCL Computer Science

Lecturer in Computer Science

Full Time:

The appointment will be on UCL Grade 8. The salary range will be £41,844 to £49,362 per annum, inclusive of London Allowance.

The Department of Computer Science at University College London is seeking to recruit a new faculty member at Lecturer level who can contribute to research in one of the following areas: Autonomous Systems; Computer Vision; Information Retrieval; Natural Language Processing; or Quantum Computation. Notwithstanding this, truly exceptional candidates from any area of Computer Science are also encouraged to apply. Our department is a highly collaborative environment, and we seek future colleagues who enjoy working collaboratively within the department, and UCL overall.

The post holder will teach at undergraduate and graduate levels in areas allocated by the Head of Department or Director of Studies and carry out research and

UC SANTA CRUZ

Department of Computational Media

Teaching Professor, Computational Media

The Computational Media Department at the University of California, Santa Cruz (UCSC) invites applications for a teaching professor position at the Lecturer with Potential for Security of Employment, Lecturer with Security of Employment, or Senior Lecturer with Security of Employment levels. The Lecturer SOE rank is a full-time, permanent position with the rights and responsibilities of membership in the Academic Senate; "Potential Security of Employment" is analogous to tenure track; "Security of Employment" is analogous to tenure. Teaching, professional achievement and activity, and University and public service constitute the criteria for advancement.

RANK: Lecturer with Potential for Security of Employment (SOE); Lecturer with Security of Employment; Senior Lecturer with Security of Employment, commensurate with qualifications and experience.

SALARY: Commensurate with qualifications and experience, academic year (9-month) basis.

BASIC QUALIFICATIONS: Terminal degree (Ph.D. or M.F.A.), or equivalent foreign degree in Computer Science, Digital Media, Human Computer Interaction, Computer Games or other relevant fields, expected to be conferred no later than June 30, 2016; teaching experience (demonstrated by college level teaching experience, TA experience, research presentations and/or professional training seminars), and some demonstrated record of professional achievement and activity.

POSITION AVAILABLE: July 1, 2016, with academic year beginning September 2016. Appointment is contingent upon degree being conferred by June 30, 2016.

TO APPLY: Applications are accepted via the UCSC Academic Recruit online system, and must include a letter of application, curriculum vitae, a statement of professional interests and plans, a statement of teaching interests, 3–5 selected publications that document creative accomplishments or other professional activities, outstanding and recognized contributions to the development of the field and/or pedagogy, 3-4 confidential letters of reference.* In addition, up to ten sets of instructor teaching evaluations may be submitted. Documents/materials must be submitted as PDF files.

Apply at **http://apptrkr.com/747513**

Refer to Position **#JPF00340-16** in all correspondence.

CLOSING DATE: Review of applications will begin on February 23, 2016.

The University of California is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, age, or protected veteran status.

Professional Opportunities

produce publications and other research outputs. They will also supervise or assist with supervision of undergraduate, taught graduate (Masters) or research graduate (MPhil/MRes/PhD/EngD) students and contribute to the development, planning and implementation of a high quality curriculum. The post holder will assist in the development of learning materials, preparing schemes of work and maintaining records to monitor student progress, achievement and attendance. They will obtain research funding support and contribute to departmental, faculty, or UCL-wide working groups or committees.

Candidates should demonstrate that they are capable of initiating and conducting exciting world-class research, and must hold an earned Ph.D. by the time of the application. Further, they must be able to articulate a vision for a future programme of research that has the potential to be world leading, including how this might be funded. They must also demonstrate a zest for innovative and challenging teaching at the graduate and undergraduate levels.

A proven record of ability to manage time and evidence of ability to teach and to supervise academic work by taught and research students are desirable. Candidates should further be committed to public communication, and to UCL's policy of equal opportunity, including working harmoniously with colleagues and students of all cultures and backgrounds.

For further details about the vacancy and how to apply on line please go to http://www.ucl.ac.uk/hr/jobs/ and search on Reference Number: 1531956

Important: In your application cover letter, please specify which research area you are interested in: Autonomous Systems; Computer Vision; Information Retrieval; Natural Language Processing; or Quantum

UNIVERSITY of HAWAI'I® MĀNOA

Assistant Professor (Computer Engineering), position number 0070286, University of Hawai'i at Mānoa (UHM), College of Engineering, Department of Electrical Engineering, invites applications for a full-time, tenure track, faculty position, to begin approximately August 1, 2016 or as soon thereafter as possible.

The University of Hawai'i is a Carnegie doctoral/research extensive university with a strong emphasis on research and graduate education. The Department offers the B.S., M.S., and Ph.D. degrees in electrical engineering and the B.S. degree in computer engineering. For more information on the Department please visit our website at http://www.ee.hawaii.edu

The UHM College of Engineering is supporting the UH Academy for Creative Media (ACM) System by establishing a Multimedia, Arts, and Technology emphasis fusing emerging media, engineering, and digital arts and entertainment research, practice, production, and theory. The aim is to push the frontiers of developing and integrating new technology in media to create new forms of art and entertainment. While Hawai'i has a strong cultural history in the arts and traditionally served as a site location for many television and movie productions, it has recently become a focal point for generation of novel enterprises in digital art and entertainment aided in part by multimedia sharing software such as YouTube.

Minimum qualifications: An earned Ph.D. (ABD will be considered) in Computer Engineering, Electrical Engineering, Computer Science, or a closely related discipline is required with a strong background in engineering and expertise in a computer engineering research area. Preferred sub-disciplines include but not limited to visualization, computer graphics and animation, virtual reality, video game development, high performance computing; multimedia engineering that involves multimedia software systems; high-speed networking, digital signal and image processing, human-computer interaction, and embedded systems for real-time multimedia. Applicants must show a strong commitment to teaching excellence and mentoring at the undergraduate and graduate levels, conducting research, and publishing scholarly materials.

To apply: Applicants should follow the instructions at the following website to electronically submit their materials http://www4.eng.hawaii.edu/apply

Continuous recruitment: Review of applications will begin March 15, 2016, and will continue until the position is filled.

Professional Opportunities

Computation. Or if your interest area does not fall into one of these areas, please mention any other areas in your cover letter.

Any queries should initially be sent to lisa.howard@ucl.ac.uk. Questions about this vacancy may also be directed to Prof. Stephen Hailes (Chair of Appointment Panel, (s.hailes@cs.ucl.ac.uk), Prof. Daniel Alexander (Director of Research, (d.alexander@cs.ucl.ac.uk) or Prof. John Shawe-Taylor (Head of Department, (j.shawe-taylor@ucl.ac.uk)

Closing Date: 3 March 2016
Latest time for the submission of applications: 23:59.
Interview Date: tbc
UCL Taking Action for Equality

University of Nebraska-Lincoln

Assistant Professor of Practice of Computer Science and Engineering

The Department of Computer Science and Engineering at the University of Nebraska-Lincoln seeks outstanding applicants for the position of Assistant Professor of Practice of Computer Science and Engineering. The planned start date of this position is August 15, 2016.

The successful candidate will join the faculty for the new Bachelors of Software Engineering degree at UNL. They will work with existing faculty to develop, deliver, assess, and refine our novel approach to software engineering education.

Candidates must have a doctorate in software engineering, computer science, and/or computer engineering or related field. Candidates must have a strong commitment to undergraduate teaching and previous effective teaching experience (as evidenced by evaluations and demonstrated support of academic programs and student success). Candidates must also have experience in introductory level teaching and curriculum development in software engineering, computer science, and/or computer engineering. Strong oral presentation and communication skills are required.

To apply, please go to http://employment.unl.edu and complete Faculty/Administrative application F_160019. Required application documents include a cover letter, curriculum vitae, a teaching statement, and names and contact information for at least three references. Review of applications will begin April 1, 2016 and will continue until the position has been filled. The official advertisement can be viewed at http://cse.unl.edu/facultysearch. Please contact the search committee chair, Professor Suzette Person [sperson@cse.unl.edu, (402) 472-5040] for questions regarding the position.

More information can also be viewed at: http://cse.unl.edu/facultysearch. The University of Nebraska-Lincoln is committed to a pluralistic campus community through affirmative action, equal opportunity, work-life balance, and dual careers. See http://www.unl.edu/equity/notice-nondiscrimination.

University of Nebraska at Omaha

College of Information Science & Technology

Information Assurance Faculty Position in School of Interdisciplinary Informatics

The School of Interdisciplinary Informatics in the College of Information Science and Technology invites applicants for a tenure-track position in Information Security/Assurance at the assistant professor rank, starting Fall, 2016. A Ph.D. in Information Assurance or a similar field with a Cyber Security research area is required. Essential duties include pursuing an independent research career and leading and coordinating research projects, teach courses which fulfill curriculum goals and objectives, supervise graduate students at the master and doctoral level, and obtain external funding. Demonstrated potential for research/funding with agencies such as DoD, DoJ, DHS, FBI, NSA is desirable. The School is particularly interested in candidates with experience in Computer and Network Forensics related areas.

The University and department have a strong commitment to achieving diversity among faculty and staff. To apply for this position go to http://www.unomaha.edu/human-resources/index.php. A cover letter, and curriculum vita (including teaching statement, research statement, and a list of three references) must be attached to the electronic application. For more information, contact Dr. Robin Gandhi, rgandhi@unomaha.edu or (402) 554-3363.

University of New Orleans

Computer Science

Assistant Professor

POSITION CATEGORY: Big Data

Position Description: The Department Of Computer Science At The University Of Orleans Invites Applications for a tenure-track position at the rank of Assistant Professor to begin in August 2016. Successful candidates should have a Ph.D. degree in Computer Science or a closely related area and have demonstrated a solid research record in the general area of Big Data.

We are primarily looking for applicants whose expertise would extend and complement existing strengths within the department. Candidates with expertise in environmental informatics, security and privacy of big data, bioinformatics, medical informatics, security and privacy of cloud-hosted data are especially encouraged to apply. Exceptional candidates in other related areas will also be considered.

A detailed description of this position can be found at: http://www.uno.edu/cos/computer-science/documents/Position-1652.pdf

Professional Opportunities

APPLICATION INSTRUCTIONS: Please submit a letter of application, resume, and three letters of reference to the search committee: search@cs.uno.edu.

University of Texas at Dallas

Tenured/Tenure-track Faculty Positions in Computer Science/Software Engineering

The Department of Computer Science of The University of Texas at Dallas invites applications from outstanding applicants for multiple tenure-track positions in computer science. Candidates in all areas of Computer Science will be considered though the Department is particularly interested in areas of software engineering, machine learning, data science, cyber security, and information retrieval. Candidates must have a Ph.D. degree in Computer Science, Software Engineering, Computer Engineering or equivalent. The positions are open for applicants at all ranks. Candidates for senior positions must have a distinguished record of research, publication, teaching and service, and demonstrated leadership ability in developing and expanding (funded) research programs. Junior candidates must show outstanding promise.

The Department offers B.S., M.S., and Ph.D. degrees both in Computer Science and Software Engineering, as well as in interdisciplinary fields of Telecom Engineering and Computer Engineering. Currently the Department has a total of 49 tenure-track faculty members and 30 senior lecturers. The Department is housed in a spacious 150,000 square foot facility and has excellent computing equipment and support. The Department houses a number of centers and institutes, particularly, in areas of cyber security, human language technology, and, net centric software.

The University is located in the most attractive part of the Dallas metropolitan area. There are over 800 high-tech companies within a few miles of the campus, including Texas Instruments, Alcatel, Ericsson, Hewlett-Packard, AT&T, Fujitsu, Raytheon, Rockwell Collins, Cisco, etc. Almost all the country's leading telecommunications companies have major research and development facilities in our neighborhood. Opportunities for joint university-industry research projects are excellent. The Department averages $9 million in extramural research funding annually putting it in 34th rank nationally in the ASEE survey of research expenditures. The University and the State of Texas are also making considerable investment in commercialization of technology developed in University labs: a new start-up business incubation center was opened in September 2011.

For more information, contact Dr. Gopal Gupta, Department Head, via email (gupta@utdallas.edu) or send e-mail to cs-search@utdallas.edu or view the internet web page at http://cs.utdallas.edu. The search committee will begin evaluating applications on January 15th. Applications received on or before January 31st will get highest preference. Indication of gender and ethnicity for affirmative action statistical purposes is requested as part of the application.

Applicants should provide the following information: 1. CV, 2. statement of research and teaching interests, and 3. full contact information for five (5) professional references via the ONLINE APPLICATION FORM available at: http://go.utdallas.edu/pcd151120.

The University of Texas at Dallas is an Equal Opportunity/Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability, pregnancy, age, veteran status, genetic information or sexual orientation.

Utah State University, Logan, Utah

Department of Computer Science

Assistant Professor

Position Description

Applications are invited for two open faculty positions, starting Fall Semester 2016, at the Assistant Professor level in the Computer Science Department at Utah State University (USU). Applicants must have completed a Ph.D. in Computer Science by the time of appointment. Applicants should have a strong record of prior research, show significant potential for attracting external research funding, and have excellent communication skills. The department is interested in strengthening its focus in Computer Security, and Data Science, but applicants in other areas may also apply.

We will begin to review candidates starting January 25, 2015. USU is a Carnegie Research Doctoral extensive University with over 20,000 students.

Application Instructions

Please use the following link to apply for the job.

http://usu.hiretouch.com/job-details?jobID=1050

You will be expected to provide the following.

1. A letter of interest

2. A current curriculum vita (statements of research experience and interests, proposals written and funded, publications, and teaching experience)

3. The names and email addresses of three references. Your references will be sent an email from USU, asking them to upload a letter of recommendation on your behalf.

Professional Opportunities

Washington University in St. Louis

Lecturer Positions

The Department of Computer Science & Engineering at Washington University in St. Louis announces openings for Lecturers, for 9- or 12-month appointments at all levels of seniority. Lecturers are full partners in our department, teaching, mentoring, and advising our students using the best practices of computer science pedagogy. Our students are bright, industrious, and passionate about their computer science studies. Applicants should have a doctoral degree in computer science, computer engineering, or a closely related field.

Washington University is a highly ranked private university, offering a competitive benefits package and the best of urban and suburban living, with high quality and affordable housing within walking or biking distance, and access to award-winning school districts.

To apply: please visit: https://jobs.wustl.edu/ and enter job ID 32471. Washington University is an Equal Opportunity/Affirmative Action employer.

Western University

Canada Research Chair Tier Ii in Data-Centric Systems

The Department of Computer Science, Faculty of Science, Western University is pleased to announce the search for a Tier II CRC Chair in Data-Centric Systems. Western Science is making significant investments in 'Big Data' as part of our broader Science of Information research theme, in line with the strategic priorities of both the Faculty of Science (http://www.uwo.ca/sci/pdf/STRATEGIC%20PRIORITIES_FA-web.pdf), and Western University (Achieving Excellence on the World Stage; http://president.uwo.ca/pdf/strategic-plan/WesternU_Full_StratPlan_2014.pdf).

In accordance with the regulations set for Tier II Canada Research Chairs (www.chairs-chaires.gc.ca), a successful candidate is an **exceptional emerging researcher,** acknowledged by their peers as having the potential to lead in their field. Normally, nominees for a Tier II CRC must be within 10 years of receiving their doctoral degree.

The successful candidate will have an established record in distributed data management system research, with preference given to applicants whose research focuses on both scalable and distributed data management. Publications in top journals/refereed conference proceedings and invited presentations at prestigious international conferences are both attributes of our desired candidate. Demonstrated success in attracting research funds from a variety of sources and initiation and fostering industry-academic collaborations are also essential. The position start date will be July 1, 2017.

The Chair will complement existing software and systems strengths in Computer Science and Electrical and Computer Engineering at Western, and is expected to collaborate with core application areas at Western where huge amounts of data from geographically distributed sources are utilized. These areas include mining and exploration, monitoring and warning systems for natural hazards, environmental monitoring and animal tracking, smart cities and public health. Such interdisciplinary collaboration is also expected to accelerate our industrial collaboration in mining, insurance, manufacturing, computing, networking, and telecommunications. The research will be supported by the high performance computing facilities of Sharcnet and the Southern Ontario Smart Computing Innovation Platform (SOSCIP).

Candidates are expected to hold a PhD in Computer Science or related discipline. Candidates will be appointed at the rank of Assistant or Associate Professor with tenure. The rank and tenure status will be commensurate with the successful applicant's qualifications and experience. The position starting date will be on or around July 1, 2017.

Applicants must be prepared to supervise graduate students at the MSc and PhD levels, and are expected to be able to teach a variety of courses in data management at the undergraduate level, as well as develop specialized courses at the graduate level.

With a full-time enrolment of about 35,000 students, Western University is a large, research-intensive university with a full range of academic and professional programs. General information about the University can be found at http://www.uwo.ca/. The university campus is in London Ontario, a city of 410,000, located midway between Toronto and Detroit. With parks, river valleys, tree-lined streets, and bicycle paths, London is known as the "Forest City". London boasts an international airport, galleries, theatre, music and sporting events (see http://www.goodmovelondon.com/).

Candidates should submit a curriculum vitae, a one-page teaching statement and a concise research proposal (5 pages, NSERC Discovery Grant format preferred) and contact details of a least three professional referees who can provide letters of support to:
Professor Bryan Neff , Associate Dean (Research) Office of the Dean, Faculty of Science Western University
London ON N6A 5B7 CANADA
email: adrsci@uwo.ca

Consideration of applications will begin on April 15, 2016 and will continue until the position is filled.

This position is subject to budgetary approval and conditional upon a successful CRC application. Applicants should have fluent writing and verbal communication skills in English. All qualified candidates are

Professional Opportunities

encouraged to apply; however Canadians and permanent residents will be given priority. The University of Western Ontario is committed to employment equity and welcomes applications from all qualified women and men, including visible minorities, aboriginal people and persons with disabilities.

Western University

Western Research Chair in Cyber-Physical Systems

The Department of Computer Science in the Faculty of Science at Western University is pleased to announce the search for a Western Research Chair in Cyber-Physical Systems. Western Science is making significant investments in 'Big Data' as part of our broader Science of Information research theme, in line with the strategic priorities of both the University's plan, Achieving Excellence on the World Stage; (http://president.uwo.ca/pdf/strategic-plan/WesternU_Full_StratPlan_2014.pdf) and the Faculty of Science plan found at (http://www.uwo.ca/sci/pdf/STRATEGIC%20PRIORITIES_FA-web.pdf). Western Research Chairs are equivalent to a Tier I Canada Research Chair.

The Western Research Chair in Cyber-Physical systems is expected to take a leadership role in building on Western's strong research profile and capacity within the Science of Information. The Chair will complement existing software and systems strengths in Computer Science and Electrical and Computer Engineering, and is expected to collaborate within core application areas at Western where cyber-physical systems are utilized. These areas include mining and exploration, monitoring and warning systems for natural hazard, environmental monitoring and animal tracking, smart cities, public health, and cognitive and skeletal health. Such interdisciplinary collaboration is also expected to accelerate our industrial collaboration in mining, insurance, manufacturing, computing, networking, and telecommunications. The research will be supported by the high performance computing facilities of Sharcnet and the Southern Ontario Smart Computing Innovation Platform (SOSCIP).

The successful candidate will be appointed at the rank of Associate or Full Professor with tenure. Candidates holding a PhD in Computer Science, with an outstanding international reputation, and a well established externally funded program of research excellence are invited to apply. All research areas related to cyber-physical systems will be considered, but there is strong interest in software services and human-centric systems.

The successful candidate will be an outstanding and innovative researcher whose accomplishments have made a major impact as evidenced by publications in highly ranked journals; be recognized internationally as a leader in their field as evidenced by invitations to international colloquia; have a superior record of attracting external funding, through both individual and team grants, in support of their research, and a strong record of supervising graduate students and postdoctoral fellows. Evidence of industry partnership is also essential. The successful candidate will provide leadership in research, promote interdisciplinary scholarship, and increase knowledge mobilization and societal benefits.

With annual research funding exceeding $220 million, and an international reputation for success, Western ranks as one of Canada's top research-intensive universities. Our research excellence expands knowledge and drives discovery with real-world application. Western also provides an exceptional employment experience, offering competitive salaries, a wide range of employment opportunities and one of Canada's most beautiful campuses.

Applicants should forward a letter of interest and a curriculum vitae, along with the names of three referees to:
Dr. John P Capone, Vice President (Research)
1151 Richmond St. Stevenson Hall 2107
Western University London ON N6A 5B8
CANADA email: vpr@uwo.ca

Positions are subject to budget approval. Applicants should have fluent written and oral communication skills in English. The University invites applications from all qualified individuals. Western is committed to employment equity and diversity in the workplace and welcomes applications from women, members of racialized groups/visible minorities, Aboriginal persons, persons with disabilities, persons of any sexual orientation, and persons of any gender identity or gender expression. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents.