

Computing Research News

COMPUTING RESEARCH ASSOCIATION, CELEBRATING 40 YEARS OF SERVICE TO THE COMPUTING RESEARCH COMMUNITY

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CONFERENCE AT SNOWBIRD

JULY 20 – 22, 2014
SNOWBIRD, UTAH

2014 CRA Conference at Snowbird

The event will be held July 20 – 22 in Snowbird, Utah.

Click [here](#) to view the updated program.

CRA thanks ACM, MERL and Dell for joining with IBM Research, Facebook, Google, Microsoft Corporation, National Security Agency, National Science Foundation and Yahoo Labs as sponsors of the CRA Conference at Snowbird.



Stu Zweben and Betsy Bizot Receive Grant from Sloan Foundation

Stu Zweben (Professor Emeritus, The Ohio State University, and Chair of the CRA Survey Committee) and Betsy Bizot (CRA Director of Statistics and Evaluation) have been awarded a grant from the Alfred P. Sloan Foundation for “An In-Depth Examination of Data and Trends Regarding Women in Computing.” Published information on the status of women in computing tends to be either highly aggregated (e.g. nationwide percentages such as those in the Taulbee report each year or in NCWIT’s “By the Numbers” summary) or very detailed, focusing

on a single academic level, a subset of women or institutions, or results of a particular intervention. The purpose of this project is to systematically examine 20 years of national data on women’s representation at multiple points from first-year college students through Ph.D. recipients and academic faculty, in search of important differences that may be obscured by high-level aggregation and important commonalities that may be missed by more narrowly focused studies. The project will use data from the Taulbee Survey, the ACM survey of Non-

Doctoral-Granting Departments, IPEDS, the NSF Survey of Earned Doctorates, and the Higher Education Research Institute (HERI: The Freshman Survey), disaggregating as much as possible by factors such as type of institution or program, ethnicity, citizenship, and field of computing. The grant is one of five awarded by the Foundation in a program studying women in computing and IT.

CRA Welcomes Helen Vasaly



Computing Research Association is pleased to announce the hire of Helen Vasaly as a Program Associate for the Computing Community Consortium. In her current role, Helen interacts with members of the research community and policy makers to organize meetings, workshops, and outreach activities.

Previously, she was a Science Education Analyst at the National Science Foundation working on **promoting excellence in undergraduate STEM education** for the Education and Human Resources Directorate. Helen organized and participated in a number of outreach events and conferences for many programs including the Advanced Technological Education (ATE) Program, whose goal is to increase the education of technicians for the high-technology fields that drive our nation’s economy.

She holds a bachelor’s of science in biology as well as a master’s of science in ecology and evolutionary biology from the University of Virginia.

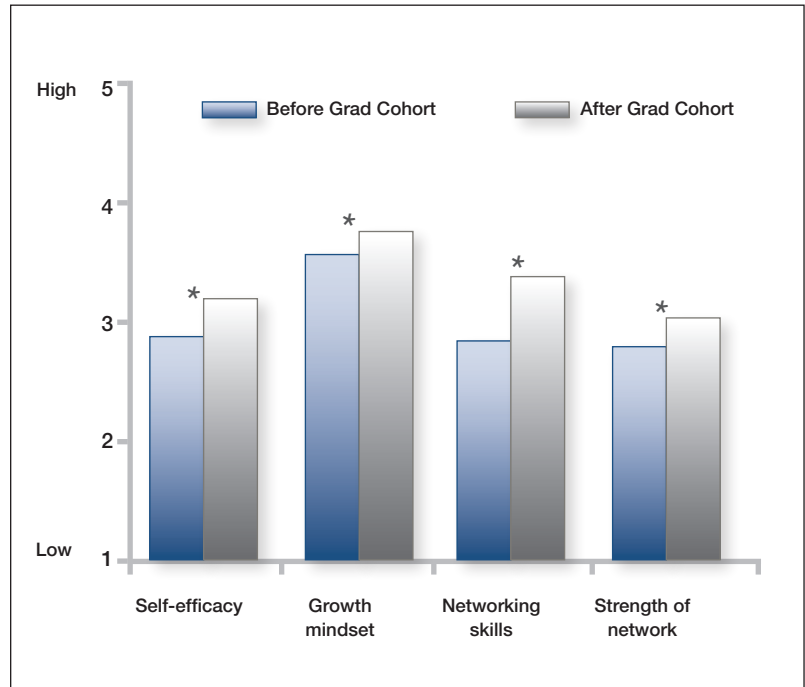
CRA and CCC are excited to have Helen as the newest addition to our team!

Center for Evaluating the Research Pipeline Infographic

By Jessica Cundiff, CERP Research Analyst

CRA-W's Grad Cohort has a positive impact on women graduate students

Grad Cohort is a two-day workshop that seeks to improve the success and retention of women in computing research by advising graduate students in computing on research skills and on career planning and development. Grad Cohort seeks to meet these goals using presentations, panels, and individual mentoring, and by creating professional social networks. Participants (N = 162) completed surveys prior to and immediately following the workshop. Findings suggest that Grad Cohort had a positive influence on participants' self-reported outcomes. Participants reported greater self-efficacy, greater tendency to interpret setbacks as opportunities for growth (i.e., growth mindset), stronger networking skills, and a stronger network of colleagues after attending Grad Cohort than before. The complete Evaluation Report can be viewed at cra.org/cerp/evaluation-reports.



Note. * $p < .01$.

Note: **Self-efficacy** was measured by aggregating responses on the following three items: *How confident are you that, if you choose, you can (1) publish papers as first author in the top publication venues of your field, (2) discuss your research and other technical topics with senior members of the field, and (3) become a leader in the computing community* (response scale ranged from (1) not at all confident to (5) extremely confident). **Growth mindset** was measured by aggregating responses on the following four items: (1) *Obstacles in grad school make me want to give up* (reverse-coded), (2) *I think of negative feedback from my advisor as a learning experience*, (3) *People who have been successful in my field have rarely encountered as much failure as I have* (reverse-coded), and (4) *Failure in graduate school indicates that you are really not meant to be there* (reverse-coded; response scale ranged from (1) strongly disagree to (5) strongly agree). **Networking skills** were measured by aggregating responses on the following three items: (1) *It is hard for me to introduce myself to people at conferences* (reverse-coded), (2) *I feel confident that I can network effectively*, and (3) *I don't really know how to make connections at conferences* (reverse-coded; response scale ranged from (1) strongly disagree to (5) strongly agree). **Strength of network** was measured by aggregating responses on the following four items: *Think about your relationship with people in the computing community. To what extent is each of the following available to you at this point in your career: (1) People with whom you can discuss professional development questions, (2) A strong network of peers to interact with at conferences, (3) People in your field who you identify with and can relate to, and (4) People who would be excited to learn about your professional successes* (response scale ranged from (1) not at all to (5) very much).



Center for
Evaluating the
Research Pipeline

This analysis is brought to you by the CRA's Center for Evaluating the Research Pipeline (CERP). Want CERP to do comparative evaluation for your program or intervention? Contact cerp@cra.org to learn more. Be sure to also visit our website at <http://cra.org/cerp/>.

Expanding the Pipeline:

CRA-W Grad Cohort: Equipping the Next Generation of Computing Research PhDs for Success

By Dr. Kathryn S. McKinley

CRA-W hosted its 11th annual Grad Cohort in Santa Clara, California on April 11 and 12, 2014. Grad Cohort is a two-day workshop that seeks to improve the success and retention of women in computing research. Senior women advise graduate students on research skills, publishing, career

to under-represented minorities and students who have not attended previously. CRA-W funded up to two qualified students from each computing department and then department chairs had the opportunity to partially fund additional students from their institution.

This year over 80 students were able to attend thanks to the generous support of their departments. In many cases, departments sponsored multiple students, which resulted

in student participants representing 124 distinct masters and PhD granting institutions.

Figure I shows that 20% of students were in masters programs and 80% in PhD programs.

Figure II shows student race and ethnicity. 39% are U.S. citizens or permanent residents. Only 5% of the attendees self-identified as African Americans and 4% as Hispanic, even though we accepted all who applied this year. Unfortunately, ethnic minority women are even more severely under represented compared to ethnic minority men in computing.

Under representation can lead to feelings of isolation, lack of fit, and attrition. Developing networks of social support with others who share similar experiences often helps individuals persist in the face of adversity. Most women graduate students find themselves in the minority within their computing departments. Furthermore, variations in advisor mentoring strengths and unconscious biases can disproportionately discourage students that already feel isolated.

"I felt like I was inducted into the league of Computing Research professionals."
- Grad Cohort Participant

stages, internships, networking, and collaborations with presentations, panels, individual mentoring, and by creating professional social networks.

The attendees

This year, 304 masters and PhD women graduate students in their first, second, and third year of graduate school attended. More than 30 senior women and a few men volunteered to share career advice and mentor students for the full two days. Since women remain under represented in computing (e.g., the 2013 Taulbee report cra.org/govaffairs/blog/2013/03/taulbeereport/ indicates that less than 400 women earned PhDs in computing in 2013), the 304 Grad Cohort attendees represent a critical community resource and an enormous opportunity for computing.

All participants received full funding for travel expenses, meals, and registration, made possible by generous corporate, ACM, IEEE, university department, and individual sponsors. With 503 well-qualified applicants this year, even more wanted to attend. CRA-W endeavors to choose applicants who are in their first three years of graduate school (Masters or PhD), giving priority

Figure I

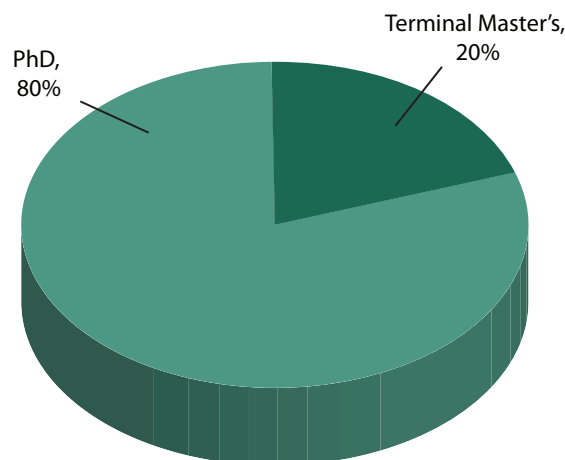
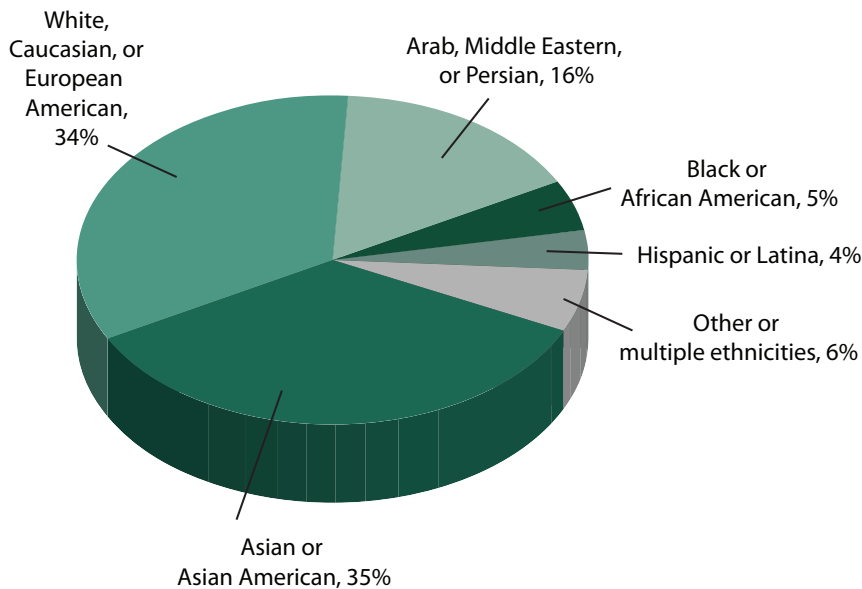


Figure II



“Presenting at the poster session was really nice because you could meet people who were specifically interested in your research and build a bond with them – also makes me feel good knowing that I’m bouncing my research off really bright people and getting their feedback. I initially wasn’t thinking that I’d present anything but I’m really, really glad I did.”
- Grad Cohort Participant

Goals and execution

To address these problems, CRA-W created Grad Cohort, a two day workshop, to help students to connect with peers and senior role models, and to provide resources on how to build a successful research career.

CRA-W organizes the workshop into plenary sessions, presentation and panel tracks, a poster session, and individual mentoring (new this year) with plenty of time for questions. CRA-W has three simultaneous tracks that deliver material most appropriate for first, second, and third year students, although students are free and do move between tracks. The first evening includes a reception with a DJ and dancing.

Professors Lori Clarke, Sandhya Dwarkadas, and Lori Pollock organized this year’s workshop, selecting students from the 503 applicants, contacting department chairs for additional funding, choosing speakers, and content. CRA Director of Programs Erik Russell handled all the logistics, including reimbursing

the students. The co-chairs invite carefully vetted successful women researchers to serve as speakers and mentors. Volunteer speakers include professors, government, and industrial researchers, who serve as role models from a range of institutions, such as Rochester, Princeton, Georgia Tech, Delaware University, the University of Massachusetts, Yahoo!, Google, and Microsoft Research. The speakers are very accomplished with many prestigious research awards, this year including at least seven ACM Fellows.

Another highlight this year was the plenary session on the “Future of Computer Science,” given by Dr. Farnam Jahanian, Director of CISE

at the National Science Foundation, who pointed to critical problems such as secure systems, cyber physical systems, and the ending of Moore’s law as research directions and opportunities critical to our nation.

Other popular sessions included “Finding a Research Topic,” “Networking,” and “Balancing graduate school and personal life.” Between 80% to 90% of student participants in our post-workshop survey described most sessions as “quite a bit” or “extremely useful.” For more details on the agenda, please see: <http://cra-w.org/Portals/0/Pdfs/2014%20CRA-W%20Grad%20Cohort%20Agenda.pdf>

For more details on student changes in knowledge, peer and mentor networks, and favorite sessions, please see the CERP report on the post-workshop surveys: <http://cra.org/cerp/wp-content/uploads/2014/05/Grad-Cohort-Evaluation-Report-2014.pdf>

This year for the first time the workshop offered as the final session, an hour, which turned into two, for formal individual mentoring. The mentors each occupied one table and then individual students had 5 to 10 minutes to ask them for personal advice on their careers and curriculum vitae. This session was extremely popular – I think every student joined and stayed in line. Many of the mentors stayed late to make sure every student got the opportunity to speak to a mentor individually. The students asked questions about job opportunities, how

“I left feeling a lot more positive about my experience as a PhD student so far and less isolated and worried about the ways I think I struggle in school.”
- Grad Cohort Participant

to know if they were good at research, and strategies for dealing with difficult people and situations. By popular demand, the workshop will offer more time for this session next year.

Results: CRA-W programs move the needle

One thing that makes CRA-W stand out is that our programs work! We know they work because we survey computing graduate and undergraduate students across the nation and compare participants and non-participants. For example, CRA-W Grad Cohort participants at similar stages in their careers (one to three years after attending) later publish

first author papers at higher rates than their peers who do not attend Grad Cohort (71% participants vs. 23% for non-participants). In addition, Master's students who attend CRA-W Grad Cohort are over two times more likely to have the intent to pursue a PhD than master's students who do not (67% participants vs. 29% non-participants). See examples of the in depth analysis [<http://cra.org/cerp/wp-content/uploads/2014/05/Grad-Cohort-Evaluation-Report1.pdf>] that compares Grad Cohort participants and non-participants by the CRA Center for Evaluating the Research Pipeline (CERP) [<http://cra.org/cerp/>].

An increasing body of evidence shows that more diverse teams make better products and improve business outcomes. By equipping young women researchers with career knowledge, strategies, and a network of supportive peers, CRA-W seeks to improve the success and retention of a diverse

computing research workforce. CRA-W believes "Diversity drives innovation."

About the Author Dr. Kathryn S. McKinley is a CRA-W co-chair, CRA Board member, ACM and IEEE Fellow, and Principal Researcher at Microsoft. She was previously an Endowed Professor of Computer Science at The University of Texas at Austin and received her PhD, MS, and BA from Rice University. Her research interests span programming language implementation, architecture, security, performance, and energy. Three of her research publications recently earned test of time awards from OOPSLA, ICS, and SIGMETRICS. She is passionate about increasing the success and representation of women and minorities in computing, because computing is changing how we live, learn, communicate, and govern; a more diverse workforce will better drive these changes.



"I had a very good time interacting with different professors and other graduate students. I made a lot of friends in the process and got some invaluable advise. I was looking to build a community of peers and I think this goal was achieved."

- Grad Cohort Participant

2014 Computing Innovation Fellows Workshop: Research, Innovation, Impact

The [Computing Innovation Fellows \(CI Fellows\) project](#), was a program that granted short-term postdoctoral fellowships to help keep recent graduates in the field during the economic downturn. Between 2009 and 2011, 127 PhD graduates in computer science and related fields were awarded CI Fellowships. The program has ended and the former CI Fellows are now in the early years of their formal careers.



Computing Innovation Fellows (CI Fellows) from all three cohorts (2009, 2010, 2011) assembled on May 22-23 in San Francisco, CA to reflect on the success of the program and absorb information and advice from leaders in computing research. This was the first gathering of all three cohorts since the program started. The theme was “Research, Innovation, Impact,” and CI Fellows took advantage of the opportunity to listen to keynotes in each area.

The opening address was the research keynote, delivered by Peter Lee, Corporate Vice President, Head of Microsoft Research, titled *Why Research Matters, Now More than Ever*. Peter originated the idea for the Computing Innovation Fellows Project and was the first PI. He encouraged the CI Fellows to live outside their comfort zones, and embrace Blue Sky, curiosity driven research. He reminded them not to lose sight that research is a long term investment. Practical applications are not always apparent in visionary ideas and research, but the expanded knowledge base often leads to the development of useful products.

Megan Smith, VP at Google[x] gave the impact keynote on *Heroic Engineering, Talent, and Network Effects*. Farnam Jahanian, Assistant Director for the [Computer & Information Science & Engineering](#) (CISE) Directorate at the [National Science Foundation](#) (NSF), delivered the innovation keynote on *The Imperative of Research in the Innovation Ecosystem*.

Throughout the workshop, participants gained insights from senior computing researchers in sessions that covered topics such as strategies for writing a successful research proposal, communicating research with a broader audience, developing mentoring relationships, how to handle difficult situations and making time for important things. [Click here to view the full program agenda](#). The plenary sessions were recorded and will be made available online soon.





As a follow up to the CI Fellows project, the [Computing Community Consortium](#) (CCC) is now administering the Postdoc Best Practices program. It is a program to develop, implement and institutionalize the implementation of best practices for supporting postdocs. This new grant program is another effort to advance postdocs and their contributions to the research enterprise. Information on the program can be viewed [here](#).

CCC would like to thank Microsoft Research and the National Science Foundation for their support of the workshop. The organizing committee included Miriah Meyer and Bobby Schnabel (Workshop Co-Chairs), Sitaram Asur, Mary Czerwinski and Ann Drobni (CCC Director).



House Sends Mixed Messages on Bolstering U.S. Research Investment

By Peter Harsha, CRA Director of Government Affairs and Brian Mosley, CRA Policy Analyst

On May 29, the U.S. House of Representatives was on the verge of approving new funding for the National Science Foundation (NSF) that would increase the agency's budget more than 3 percent in FY 2015, while at the same time the House Science, Space and Technology Committee approved legislation the day before that would authorize smaller increases and place new restrictions and scrutiny on science funding at the same agency.

As this went to press, the House had not yet concluded consideration of the FY 2015 Commerce, Justice, Science (CJS) Appropriations Act, a bill that includes funding for NSF, the National Aeronautics and Space Administration, the National Institute of Standards and Technology (NIST), and the National Oceanic and Atmospheric Agency. The bill, as introduced, represents a significant show of support for Federal investments in fundamental research. House appropriators provided \$7.4 billion in funding for NSF in FY 2015 in the bill, an increase of 3.3 percent over FY 2014, and a bigger increase than the President requested in his own FY 2015 budget request (\$7.25 billion, or 1.2 percent).

The bill would increase NSF's Research and Related Activities account – home to the great bulk of NSF's research funding, including research in the Computer and Information Science and Engineering (CISE) directorate – by 2.9 percent, to \$5.98 billion in FY 2015, an increase of \$170 million over FY 2014.

The bill is not quite as good for NIST, which saw big increases last year for its Scientific and Technical Research and Services (STRS) account. STRS would hold flat in FY 2015 CJS bill at \$651 million, below the President's request of \$680 million and the same as the account received in FY 2014.

It was still not clear at press time whether amendments that might target

spending increases at NSF would succeed. A rumored amendment from some members of the House Science, Space and Technology (SST) Committee Majority that would shift some funding from NSF's Social, Behavioral and Economic directorate to other NSF directorates (including CISE) was not yet in order at press time. The effort is similar to language approved as part of the House SST Committee's consideration of the Frontiers in Innovation, Research, Science and Technology (FIRST) Act, which passed through the committee on a strict party-line vote on Wednesday.

The bill's lead sponsor is the House Science Committee chairman, Lamar Smith (R-TX). The bill would reauthorize the majority of the America COMPETES Act of 2010 – a bipartisan bill that authorized a doubling of the budgets of NSF, NIST and the Department of Energy's Office of Science in the name of ensuring the Nation's economic competitiveness long-term – and focuses on the non-energy agencies (NSF, NIST, and the White House's Office of Science and Technology Policy).

While the original COMPETES Act garnered near universal acclaim from the science community and Congress alike, the FIRST Act is opposed by a wide array of industry, university and scientific society organizations with an interest in the Federal investment in research. Opponents of the measure (which include CRA) note that the bill only authorizes the agencies it contains for two years, and one of those years (FY 2014) is the current year with settled appropriations. Democratic efforts to add a third year of funding authorizations for Federal science agencies as a way of demonstrating some commitment to the science community were rebuffed on a party-line vote during the committee markup of the bill.

The FIRST Act also authorizes very small increases for NSF (about 1.5 percent) and NIST (1 percent) in FY 2015, and the FY 2014 authorizations match the numbers appropriated as part of the FY 2014 Omnibus appropriation, with one significant exception: the bill would strip \$100 million in authorizations from the \$256 million NSF spends on Social, Behavioral, and Economic Science (SBE). The bill would redistribute that \$100 million amongst the other NSF directorates, include about \$70 million for CISE.

Smith and the other members of the committee majority have placed a target on NSF's SBE Directorate on a largely philosophical basis. They do not believe that the Federal government should spend any of its increasingly limited resources supporting what they believe to be the "softer" sciences like sociology and political science. However, CRA and others have argued that much of the research performed in SBE has direct relevance to work in CISE, including valuable insights into human behavior and its impact on cyber security problems, as well as a better understanding of human-computer interaction.

In addition to the troubling language regarding SBE, the bill includes language designed to ensure "greater accountability" in the grant-making process at NSF. This focus on SBE is largely in response to concerns raised by Senate Republican Tom Coburn (R-OK) last year that cited a number of NSF awards that appeared to be "silly" uses of taxpayer dollars (though later found, in every case, to be a worthy investment in research that provided valuable new understanding in that area). To prevent such misuses of NSF funding from happening in the future, the new language requires NSF to affirm that all grant awards funded by the Foundation are "worthy of Federal funding" and in

the national interest, "as indicated by having the potential to achieve:"

- increased economic competitiveness in the US;
- advancement of the health and welfare of the American public;
- development of a STEM workforce and increased public scientific literacy in the US;
- increased partnerships between academia and industry;
- support for the national defense;
- promotion of the progress of science.

The language appears in a section of the bill focused on "NSF Accountability" and represents an improvement over what had been circulated in draft versions of the bill. (Smith's original draft of the bill was problematic because it required that prior to the award of any funding, NSF had to publish on a website the justification for that award (based on the above criteria), along with the name of the employee or employees who made the determination. However, after an uproar from the science community DC over what is largely seen as micromanagement of an agency which actually does a decent job of being transparent and focused on merit review, most of the most disagreeable portions of the language were stripped. In their place, language that requires a public announcement of the award, including "a written justification from a responsible foundation official" that the grant meets the criteria. For the science community, the most recent language is somewhat better, but it still provides a hook by which Congress can call the "responsible Foundation official" on the carpet for any dubious (in their, i.e. Congressional minds) grant. Of course, Congress already has that power.

The FIRST Act does contain a reauthorization of the Networking and Information Technology Research and Development Program (NITRD).

CRA, along with IEEE-USA, SIAM and USACM endorsed this a year ago when it was introduced in a stand-alone bill as the Advancing America's NITRD Act. It's not clear whether the NITRD language would survive a conference with the Senate.

Two possible silver linings in all this, for science advocates: first, the Senate Commerce, Science, and Transportation Committee is expected to release their version of a COMPETES reauthorization any week now. The hope within the science community is that it will be a more true reauthorization of COMPETES and will be more bipartisan in nature. The second silver lining is that FIRST is an authorizing bill, which means this only covers how NSF can spend its money (rather than an appropriations bill which determines how much money NSF gets). Current year funding for NSF has already been determined and is unlikely to be impacted by this bill, assuming it gets signed into law. As well, next year's funding levels have already passed the House Appropriations Committee, and they did not incorporate the FIRST Act levels in what they approved. We'll keep our readers posted on further developments with this legislation.

It's also not clear what the Senate will do with the CJS Appropriation. The Senate Appropriations Chair Barbara Mikulski (D-MD) has been quite vocal about her support for Federal science agencies. Appropriators also have the advantage of working from a budget resolution for FY 2015, which provide the same set of numbers to both House and Senate Appropriation Committees, which, in turn, should make the path to compromise and final passage a lot easier.

We will keep you updated on both pieces of legislation as they move through the process. Find all the latest at the CRA Blog at <http://cra.org/blog>.

Printable Robots and Soft Robots Wow Attendees at the 2014 CNSF Exhibition

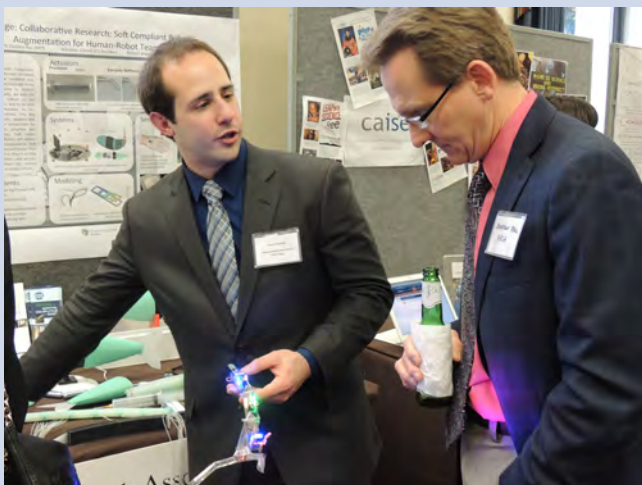
By Brian Mosley, CRA Policy Analyst



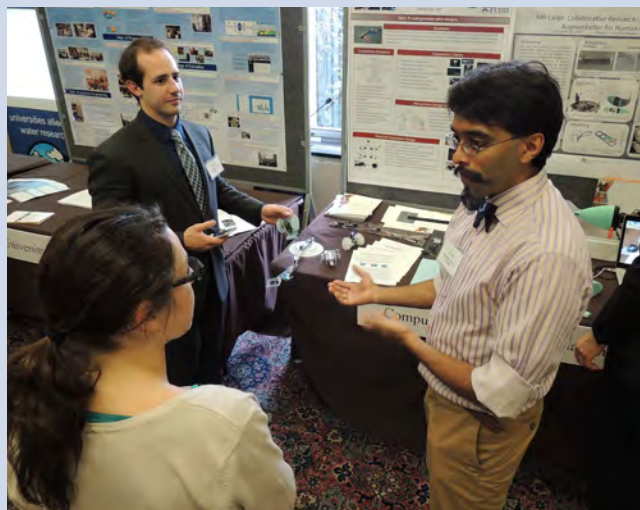
On Wednesday, May 7, the [Coalition for National Science Funding \(or CNSF\)](#) held their yearly Exhibition on Capitol Hill. The exhibition, probably best described as a science fair with some really smart people, is a showcase of research and education projects supported by the National

Science Foundation. It gives a great venue to show members of Congress and Congressional staff what the American people have funded.

CRA, a member of CNSF, sponsored two grad students and a postdoc from MIT to come to Washington to talk about their work. Joseph DelPreto and Ankur Mehta talked about their [printable robots](#); super cheap, 3D robots that can be printed on a 2D printer. Robert Katzschmann demonstrated his autonomous, self-contained soft robotic fish, which is considered a “soft robot”. Check out some demonstrations of his work in these [two videos](#). All three young researchers are advised by [Daniela Rus](#) at MIT, who is also a CCC Council member.



Joseph DelPreto of MIT explains his printable robots to Rep. Rush Holt (D-NJ).



Ankur Mehta, center, of MIT, explains his printable robots to an attendee at the 2014 CNSF Exhibition.

All of this research and work is supported from the CISE directorate at NSF. Both projects were well received by the attendees of the exhibition; in fact, two members of Congress stopped by their table, as did the head of the NSF CISE directorate, and multiple Congressional staffers and NSF employees.

A number of other organizations had tables and were showing off NSF funded research. From Tufts University’s “Engineering Solutions to Clean Water;” to the Entomological Society of America’s “Optimizing Crop Yields: Pollinators, Pests and Pathogens;” to American Psychological Association and Vanderbilt University’s joint table of “Russell the Robot: Engaging Children with Autism through Psychological and Engineering Research,” the event was a great display of the different types of research being supported by the Foundation. [Click here](#) to see a full list of participating organizations and what each exhibitor was presenting.

Visions 2025 Update

By Elizabeth Mynatt, Georgia Tech

Visions 2025 is a collaborative effort between the National Science Foundation (NSF) Computer and Information Science and Engineering Directorate Advisory Committee (CISE AC) and the Computing Community Consortium (CCC). Its goal is to expose and energize future trends and opportunities in computing research, and to provide insights into how computing research will evolve and grow over the next 10 to 15 years.

The 2025 steering committee identified three broad workshop topics. The intent was not to address all areas of computer science but to start with these cross-cutting topics that explore future uses of computing while engaging core computer science research. The first two workshops occurred in May and early June.

"Interacting with Computers All Around Us" was chaired by Limor Fix (retired Intel), Jennifer Rexford (Princeton) and Daniela Rus (MIT). This workshop addressed the question of how advances in technology might alter how computers made sense of, and interact with, the physical world as well as how computers and people might interact with each other. Topics in this workshop included computational perception, machine learning, robotics, speech and language processing and physical and social dimensions of assistive technology.

"The New Making Renaissance: Programmable Matter and Things" was chaired by David Culler (Berkeley), James Landay (Cornell Tech), Prabal Dutta (Michigan) and Eric Paulos (Berkeley). This workshop explored the potentially disruptive role of "making" tangible computational objects on traditional notions of craftsmanship, mass customization, human-machine interaction, and computing research and education overall.

Several provocative themes emerged that cut across both workshops.

An open question for interaction technology design is to better understand how to create "super human" capabilities in wearable and mobile form factors. While computers have unquestionably augmented human capabilities with each new generation of computing power and interface technologies, the potential to wear technologies that allow one to see through walls, to automatically translate written and spoken languages, to recognize long-forgotten faces, and even to predict the future begins to alter commonly held

understandings of human perception and cognition and has intriguing implications for human to human interaction.

The discussions at both workshops placed great demands on future computational perception and machine learning capabilities to make greater sense of complex environments filled with human and robotic actors. These capabilities could then be realized by fluid interactions by robots and programmable objects that possessed a deep understanding of their surroundings. Discussions about "soft" robots ranged from Saul Griffith's pneumatic creations that challenge conventional design assumptions to Charlie Kemp's force sensitive skin that allows his robots to gently brush away crumbs from a person's face.

Workshop attendees anticipated the ability to create, program and deploy large collections of programmable objects that could cooperate as swarms, hives or other forms of evolving, cooperative behavior. How will large-scale networks of robots, agents, sensors and people (RASP) alter society? Will that impact exceed the dominant force that the Internet is today? Discussions also imagined augmenting or mimicking natural objects, from trees that harvest energy in the day and provide light at night, to robotic termites that build temporary shelters.

The barriers to creating and disseminating new capabilities in programmable matter warrant serious consideration. For example, what will be the app store for the Internet of Things look like? Edward Lee asked, "How can we help people hack their HVAC?" Lee, Griffith and others pointed to the need for new models in computing that encompass the challenges of dynamic control systems to allow game changing advances in cyber-physical systems and robotics. Research advances rely on education advances. How do we train the next generation of researchers that will grapple with these complex digital/physical systems? How should training in computer science overall reflect this new horizon? How can non-programmers be supported in "programming" matter? The "making" workshop also touched on education from primary school to lifelong learning. What type of education and training is beneficial for children and also necessary for the makers of tomorrow?

At the "making" workshop, Hal Varian reminded the attendees that great technology shifts that cause tremendous societal change rely on existing infrastructure that allows

Vision2025

technology to scale into mainstream use. From the port cities that created the first network of the industrial revolution to the critical mass of listeners that enabled broadcast radio programming, revolutionary technologies evolve existing infrastructures for new uses. Participants imagined repurposing existing infrastructures from urban trees, highways, and the maker community itself to create sustainable approaches for programmable objects. One challenge was to make the 3D printed objects themselves inherently recyclable.

While some of these ideas have existed in research, not to mention science fiction, before now, the question we must turn to is how computing research can address these challenges. How to quickly prototype and create end-user programmable cyber-physical systems? How to secure these systems from abuse and breaches of privacy? How to create algorithms to specify the physical properties and dynamic behavior of programmable matter? How to create algorithms

that can win design awards for their creations? Moreover these discussions strengthened the call for interdisciplinary computing research that encompasses design, engineering, physical and biological sciences, as well as law, ethics, and economics. The discussion that engendered the greatest consensus is that this terrain will be an exciting horizon for computing research in 2025 and beyond.

This report was prepared by Beth Mynatt, incoming vice-chair of the CCC. Mynatt co-chairs the Visions 2025 committee and has advised and attended both of the 2025 workshops. The third workshop that will address data analytics and the Internet of (programmable matter) and things is slated for fall 2014.

Vision2025

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Professional Opportunities

Academia Sinica, Taipei, Taiwan

Research Center for Information Technology Innovation

Director Position

Academia Sinica in Taiwan invites applications and nominations for the position of Director of the Research Center for Information Technology Innovation (CITI). The initial appointment is for a period of three years (renewable for a second term), and will also carry the title of Research Fellow. Much of the scientific affairs can be conducted in English.

As the pre-eminent academic research institution in Taiwan, Academia Sinica is devoted to basic and applied research in mathematics and physical sciences, life sciences, and humanities and social sciences. CITI has the mission of engaging in cutting-edge research in emerging information technologies and studying their industrial implications. Current research foci include ubiquitous computing, mobile computing, wireless communications, embedded systems, dependable computing, computer vision, machine learning, data sciences and computer security. CITI is well funded and blessed with a group of young and energetic researchers. CITI maintains a high research standard with a high-quality publication record. For details about Academia Sinica and CITI, please see <http://www.sinica.edu.tw>.

Interested candidates should have a Ph.D. or equivalent degree, with outstanding research accomplishments and demonstrated leadership ability. Besides pursuing a rigorous research program at CITI, the successful candidate is expected to build on the existing strengths of CITI, develop new research thrusts, and provide intellectual leadership in information technology and related industrial activities.

Applications and nominations, including a cover letter, a complete curriculum vitae, a publication list, and names and contact information of three references, should be emailed to Dr. Hsiang-Tsung Kung, Chair of the CITI Director Search Committee, at searchciti@gate.sinica.edu.tw.

Screening of applications/nominations will begin immediately, and will continue until the position is filled.

AT&T Labs-Research

R&D Positions in Cloud, Networking, Systems and Service Quality Management

AT&T Labs, one of the premier research and development laboratories in the world, is looking for passionate, talented and inventive engineers and scientists to join its team. We are looking

for exceptional candidates in the broad area of networking and systems. Of particular interest are candidates with backgrounds in the areas of cloud computing, virtualization, software defined networking (SDN), mobile computing, service quality management, stream data management, data quality, visualization, and large-volume stream analytics systems. Some specific topics of expertise include, but are not limited to, the following:

- Design and management for SDN and cloud environments
- Service Quality Management for cloud-based services and beyond
- Cross-layer analytics and design in a mobile, virtualized and SDN-controlled world

AT&T Labs is an exciting place to work with its unique combination of access to real-world systems and data, the ability to work with collaborators across the industry and academia, and the opportunity to invent solutions for large-scale operational networks and services that impact hundreds of millions of consumers and some of the largest corporations in the world. Our researchers also publish high-quality papers at top-tier international conferences.

The positions are based primarily in Bedminster, NJ. For more information, visit http://www.research.att.com/evergreen/working_with_us/careers.html

College of William & Mary

Department of Computer Science

One-Year Non-Tenure-Track Position

The Department of Computer Science at the College of William & Mary invites applications for a one-year non-tenure-track position that begins August 10, 2014. Renewal for subsequent years is contingent on satisfactory performance and availability of funds. Responsibilities include teaching three undergraduate sections per semester, with course assignment based on experience and abilities.

A degree in Computer Science or a closely-related discipline is required; preference will be given to candidates with a Ph.D. at the time the appointment begins. Prior teaching experience and an interest in advising undergraduates is particularly welcome.

Application Instructions

Applicants must apply using William & Mary's online recruitment system (<https://jobs.wm.edu>). The Position Number is F0831W. Submit a current c.v. and cover letter that includes a statement of teaching philosophy. Student evaluations from courses taught are welcome, but not required. You will be prompted to submit online the names and email addresses of three references who will be

contacted by us with instructions on submitting a letter of reference.

For full consideration submit all materials by the review date, May 9, 2014. Applications received after the review date will be considered only if needed.

The College is an EO/AA Employer. The College conducts background checks on applicants for employment.

École Polytechnique Fédérale De Lausanne

Post-doctoral Position in Privacy and Security

EPFL/LCA1, led by Prof. Jean-Pierre Hubaux, is committed to laying the foundations and developing the tools to protect privacy in tomorrow's hyper-connected world. We are recruiting a post-doctoral researcher in the areas of **network privacy and security**, with an emphasis on mobile/wireless networks, and on **data privacy and security**, with an emphasis on health-related data (including genomic data).

More information about our research activities can be found at: <http://people.epfl.ch/jean-pierre.hubaux>

Required skills and expertise:

- Very good knowledge of written and spoken English (French is not required)
- Strong background in security, privacy, and applied cryptography
- Some background knowledge in networking and/or databases, electronic health records, genomics, game theory, microeconomics, machine learning would be an asset
- Strong analytical skills
- Good knowledge of languages and tools such as C, C++, Java, Python, and MatLab

Education: a PhD degree in computer science, electrical engineering, communication systems, computer engineering, or a similar area; with a strong publication track record in information security and privacy.

Mission: The contribution to the research efforts of the group will involve many interactions with PhD and undergrad students, senior researchers, and external partners (from industry, academia, and hospitals); some participation in teaching is also expected. The research activities will mainly revolve around the design and the validation of protocols and algorithms; some supervision of prototype development might be involved.

EPFL offers top research facilities and very competitive salary conditions and is an equal opportunity employer.

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Professional Opportunities



TEL: 650 842 4800

FAX: 650 842 4880

FX Palo Alto Laboratory
3174 Porter Drive
Palo Alto, CA 94304

Research Opportunities at FXPAL

FX Palo Alto Laboratory (FXPAL) is seeking talented research scientists to join our lab as regular or visiting scientists (e.g. post doc or faculty sabbatical). FXPAL's research spans multimedia, information access, smart spaces, and remote collaboration. The following research areas are of particular interest, although we will consider exceptional candidates in other related areas.

Interactive Systems and Interfaces

We seek a researcher with expertise in the area of interactive systems and interfaces primarily in the application areas of smart environments and multimedia applications. Candidate should have expertise in multimedia systems, ubiquitous computing, sensor systems, and/or human-computer interface technologies. Ideal candidates will have prior experience working on smart spaces, and/or multimedia applications. The ability to build prototypes of novel systems and applications is required.

Communication and Collaboration Systems

We seek a researcher that is passionate about technologies that provide rich collaborative experiences for end users. Expertise from a broad range of backgrounds will be considered, including: human-computer interaction (HCI), technical aspects of computer-supported cooperative work (CSCW), and multimedia communication systems. A must for all candidates is a strong interest and demonstrated strength in building systems as part of a team.

Multimedia Data Mining

We seek a researcher with interest in mining social, educational, and enterprise multimedia data. The candidate should have expertise and experience in areas such as: analysis of multimedia for meta-data creation, machine learning applied to data mining tasks, social network analysis, and development of novel visualizations and interactions for extracting knowledge from analysis results. Our focus is on mining different types of media, including images, text, video and audio. The candidate should also be fluent with tools supporting the collection, organization and processing of large data sets.

Multimedia Applications

We seek a researcher to work in the area of interactive multimedia applications for educational, enterprise, and social media. The focus is on applications that integrate advanced content-based analysis and powerful user interface design for exploration, consumption, retrieval, and management of multimedia data collections. Techniques include hypermedia and cross media linking to provide related information. Candidates should be motivated to collaborate on projects in any of the areas of content-based analysis, user interface design, and statistical analysis of multimedia and multi-modal information.

Requirements: Candidates should be interested in working on practical applications in a collaborative setting. These positions require a Ph.D. in Computer Science or related field and strong development skills.

Please email your resume to: fxpalresumes@fxpal.com. Please specify if your interest is in a post doc or sabbatical. FXPAL is an equal opportunity employer and values diversity in the workplace.

Professional Opportunities

Starting date: to be agreed upon, but the earlier the better. The duration of employment is flexible, with an upper bound of 4 years.

If you are interested in this position and believe that you qualify, please send (preferably by **May 15, 2014**) a cover letter, a research statement (including notably how you would contribute to our activities), a résumé with a list of publications (please highlight the two most relevant ones), and the names, e-mail addresses, and phone numbers of at least 3 references to: jean-pierre.hubaux@epfl.ch. Please mention "Application to Post-Doctoral Position LCA1-2014" in the title of your e-mail.

The George Washington University, Washington, D.C.

Department of Electrical & Computer Engineering Chair and Tenured Full Professor

The George Washington University invites applications for a tenured full-professor position and the Chair of the Department of Electrical & Computer Engineering (ECE), to begin in Fall Semester 2014. This is an exciting opportunity for an outstanding person to lead the ECE Department. The George Washington University is located in the nation's capital, with close access to many federal funding agencies and government research laboratories. More information about the Department is available at <http://www.ece.seas.gwu.edu/>.

The Department offers ABET-accredited B.S. programs in Electrical Engineering and Computer Engineering, M.S. programs in Computer Engineering, Electrical Engineering, and Telecommunications Engineering, and Ph.D. programs in Electrical Engineering and Computer Engineering. The Department has grown rapidly over the last few years, both in size and stature, and is poised to grow further in the near future under the leadership of the next Chair. The Department has a strong sponsored research program including several NSF CAREER/Young Investigator grants as well as major grants from a range of Federal agencies, such as an NSF Industry/University Research Center. The Department plays a pivotal role in two University-funded academic strategic excellence programs in High-Performance Computing and Nanotechnology and runs an experimental supercomputing data center. The University is constructing a new 500,000 square foot Science and Engineering Hall (<http://seh.gwu.edu/>) which is expected to open later this year and will be the largest building dedicated to science and engineering research in the nation's capital, housing state-of-the-art facilities, such as a Class 100 nanofabrication facility, and many advanced research and instructional laboratories.

Responsibilities:

The successful candidate will be expected to demonstrate a strong commitment to excellence in teaching and research and to the success of our students. Equally, the Chair will vigorously catalyze and develop further the Department's collaborations with other departments of the School, attract new partners across the University, and advance and extend the existing relationships with nearby government laboratories. The Chair will be an enthusiastic proponent of creativity, innovation, and outreach and is expected to be an effective leader in raising resources and increasing the stature of the Department.

Basic Qualifications:

Applicants must have an earned doctorate in Electrical Engineering, Computer Engineering, or a related field, and outstanding research and academic achievements that make the candidate suitable for appointment as a full professor. S/he must have a demonstrated capability as a visionary leader, with a strong funded research portfolio that evidences multidisciplinary expertise, which can complement and expand existing departmental strengths and the proven ability to teach effectively, at both graduate and undergraduate levels.

Application Procedure:

To apply, complete the online faculty application, at <http://www.gwu.jobs/postings/20918> and upload (i) a cover letter, (ii) a detailed CV and (iii) a vision statement of research and education and (iv) full contact information for five professional references. Only complete applications will be considered. Review of applications will begin on April 18, 2014 and will continue until the position is filled.

EEO/AA Policy

The George Washington University is an Equal Opportunity and Affirmative Action Employer. Applications from women and underrepresented minority groups are strongly encouraged.

The George Washington University, Washington, D.C.

School Of Engineering & Applied Science

Chair and Tenured Full Professor, Department of Computer Science

The George Washington University invites applications for a tenured full-professor position as Chair of the Department of Computer science, to begin as early as Summer 2014. This is an exciting opportunity for an outstanding person to lead and expand an established, thriving and growing department.

GW is the largest university in the nation's capital with close access to many Federal funding agencies and research laboratories. The University offers comprehensive programs of undergraduate and graduate liberal arts studies as well as degrees in engineering, law, medicine, public health, education, business and international affairs. Thanks to a recently adopted strategic plan, GW is committed to creating several multidisciplinary research institutes, including three computation-centric institutes with up to 18 new faculty lines to be filled. Also, in support of its emphasis on research in science and technology, the University is constructing a new 500,000 square foot Science and Engineering Hall in the heart of campus, which includes state-of-the-art research and instructional laboratories, clean rooms, imaging facilities, and much more. The School of Engineering and Applied Science, including the CS Department, will move into the building in Spring 2015.

The Department of Computer Science has 20 full-time faculty members, a large adjunct faculty pool, and 650 students, and offers B.S., B.A., M.S. and Ph.D. degree programs in Computer Science, and an M.S. degree program in Cybersecurity. Its educational and research programs span core as well as cutting-edge areas, with funding from various agencies. Additionally, the University is a federally-designated Center of Academic Excellence in Research in security. Embarked on rapid growth, the Department has hired nine tenure-track professors in the past five years, and plans to continue hiring for the next several years. For further information please refer to <http://www.cs.gwu.edu>.

Responsibilities

The new Chair will be expected to lead the Department, supervise all of its resources, and promote and support excellence in teaching and research. Equally, the new Chair will lead in effective recruiting of talented faculty and students, and vigorously catalyze and develop further the Department's collaborations and relationship across the University and with Government and industry. The new Chair will be an active promoter of diversity, an enthusiastic proponent of creativity, innovation and outreach, and an effective advocate and spokesperson for the Department, both within and beyond the University.

Basic Qualifications

Applicants must have a doctorate in Computer Science or a closely related field, evidence of outstanding research and academic achievements with a strong reputation in the research and professional community, and a demonstrated ability to teach effectively at both graduate and undergraduate levels.

Professional Opportunities

Inquiries and Application

Inquiries will be accorded the utmost discretion. To inquire, please email Tom Mazzuchi, Chair of the Search Committee (cschsearch@gwu.edu). To apply, complete the online faculty application, at <http://www.gwu.jobs/postings/17254> and upload a detailed CV or resume, full contact information for five professional references and a cover letter that describes your research and teaching accomplishments and your views of growth opportunities in computer science. References will be expected to address research and teaching skills necessary for appointment at the full professor rank as well as skills for the chair position including leadership, interpersonal, administrative, and mentoring abilities. Only complete applications will be considered. Review of applications will begin on April 18, 2014 and will continue until the position is filled.

EEO/AA Policy

The George Washington University is an Equal Opportunity and Affirmative Action Employer. Applications from women and underrepresented minority groups are strongly encouraged.

Los Alamos National Laboratory

Group Leader

Works as a member of the CCS Division leadership team, providing technical leadership and management for the Applied Computer Science group, CCS-7. The group has a diverse programmatic and scientific portfolio, exploring new programming models, data-intensive computing, data science at extreme scales, and application and algorithm co-design. Group Leader will develop and execute a diverse portfolio of work in support of multiple programmatic efforts, including nuclear weapons program, various Office of Science programs, energy programs, global security, and work-for-others programs. Group Leader will develop a diverse scientific workforce and motivate group members to achieve mission and scientific success in relevant technical areas and contribute to one or more of the group's projects and research activities. Will build effective teams at the laboratory, develop external partners, foster a working environment that advances and promotes the scientific strengths of individuals, teams, the group, the directorate, the division, and the Laboratory's strengths as well as advances the state of multiple applications on future advanced computing systems. Will be expected to pursue their own scientific research as well as engage in significant portfolio growth, hiring, career management, and program development activities.

Located in northern New Mexico, Los Alamos National Laboratory (LANL) is a multidisciplinary research institution engaged in strategic science on behalf of national security.

Please apply for this position online at <http://1.usa.gov/1hkMhsX> or visit <http://careers.lanl.gov> and reference vacancy IRC33486.

Sandia National Laboratories, Albuquerque, New Mexico 87185

Computational Thermal and Fluid Mechanics Department

Developer for Thermal/Fluids Computational Simulation Software on Advanced Computing Architectures

Sandia National Laboratories is searching for a **Developer** to join the Computational Thermal and Fluid Mechanics team located in Albuquerque, NM. Candidate must have a PhD in Computer Science/Engineering or other related technical field (applied mathematics, physics, or engineering) with substantial emphasis on software development; Experience in high performance computing is required; Experience in, and the ability to, work in C++; and, A strong academic record meaning a minimum undergraduate GPA of 3.2/4.0 and/or a minimum graduate GPA of 3.5/4.0.

Applicants must apply online to Job ID# **645710**. https://ws11snlntz.sandia.gov/psp/applicant/EMPLOYEE/HRMS/c/HRM_HRAM.HRS_CE.GBL?Page=HRS_CE_JOB_DTL&Action=A&JobOpeningId=645710&SitId=1&PostingSeq=1

U.S. Citizenship Normally Required.

Equal Opportunity Employer. M/F/D/V.

United States-Israel Educational Foundation

Fulbright Israel Post-Doctoral Fellowships for American Researchers in All Academic Disciplines 2015/2016 – 2016/2017

The United States-Israel Educational Foundation (USIEF), the Fulbright commission for Israel, plans to offer 8 fellowships to American post-doctoral researchers in support of work to be carried out at Israeli universities during the course of the 2015/2016-2016/2017 academic years.

The US Post-Doctoral Fellowship Program is open to candidates in all academic disciplines.

Holders of tenure track positions are not eligible to apply. Individuals who have already begun research activities in Israel prior to the application date are not eligible.

Program grants total \$40,000, \$20,000 per academic year.

Program fellows must be accepted as post-doctoral researchers by Israeli host institutions, which agree to provide them with a standard post-doctoral grant, which they will receive in addition to their Fulbright Fellowship. Thus, the total financial support received by Program Fellows is likely to be in the range of at least \$35,000-\$40,000 per year.

Applications for 2015/2016-2016/2017 Fulbright Post-Doctoral Fellowships must be submitted to the Council for International Exchange of Scholars by August 1, 2014.

The full Program announcement is available at <http://bit.ly/P5TyWH>.

Potential candidates may contact Ms. Judy Stavsky, Deputy Director, USIEF (jstavsky@fulbright.org.il; +972-3-517-2392) for advice and assistance.

University of Georgia

Department of Computer Science

Two Lecturer Positions

The Department of Computer Science at the University of Georgia invites applications for two Lecturer positions, one position is available and a second position may become available if funding is approved, starting August 2014. The responsibilities of this position include teaching foundational courses in the undergraduate major and periodically teaching a senior/beginning graduate level course in his/her specialty. In addition, this position allows for opportunities to develop new undergraduate courses for our expanding program.

Successful Lecturer candidates should hold a Ph.D. degree in Computer Science or a closely related field. Scholarly credentials should reflect a strong commitment to teaching at the undergraduate level. Although not tenure track, it is expected that the person holding this position will remain with the department long term.

The University of Georgia (<http://uga.edu/>), founded in 1785, is the oldest land-grant university in the nation and the largest university in Georgia (exploregeorgia.org), with a student body of over 34,000. It is located in Athens (<http://www.visitathensga.com/>) a charming and historic university town of about 100,000, approximately 65 miles from Atlanta, with mild winters and warm summers. The University boasts a major Performing Arts Center and the country's best fitness and exercise facility for students and faculty. It has been consistently ranked among the top 20 public universities by U.S. News and World Report. Applicants will find UGA and the rapidly growing

Professional Opportunities

technology sectors in Athens/Atlanta supportive of professional growth.

To apply, please upload an application letter, curriculum vitae, and a statement of teaching philosophy, as a single PDF file, at <https://www.franklin.uga.edu/jobs/apply.php?id=84>. Applicants should also arrange for at least three letters of reference to be uploaded separately to the same web site.

The search committee will begin reviewing applications on June 01, 2014, until the position is filled. Please see <http://www.cs.uga.edu> for more information about the department and the university.

The Franklin College of Arts and Sciences, its many units, and the University of Georgia are committed to increasing the diversity of its faculty and students, and to sustaining a work and learning environment that is inclusive. Women, minorities, protected veterans and individuals with disability are encouraged to apply. The University of Georgia is an EEO/AA institution.

The University of Michigan, Ann Arbor

Department of Electrical Engineering and Computer Science

Computer Science and Engineering Division

CSE Lecturer III

Posting Begin Date: 5/5/2014

Posting End Date: 6/7/2014

Job Posting Number: 94837

Job Posting Number: 94838

To Apply: click on <http://umjobs.org/> – under keyword, insert *CSE Lecturer III*

Primarily to teach introductory courses in Computer Science and Engineering on programming, discrete mathematics, data structures, etc. Instructor will be responsible for developing course materials, lecturing, holding office hours and preparing and grading exams, managing and grading class projects.

Additional administrative duties, as needed. Such as, mentoring and advising students and student groups, participate on departmental, College and University committees in support of Computer Science & Engineering initiatives.

Required Qualifications

- PhD degree in Computer Science, Computer Engineering, or related discipline.
- Previous effective teaching experience as evidenced by evaluations.
- Demonstrated support of academic programs and student success.
- Strong oral presentation and communication skills are required.

Selection criteria based on resume with supplemental materials and in-person interview.

Desired Qualifications

Ability to teach advanced level courses in computer science and engineering.

Course descriptions can be found at <http://www.engin.umich.edu/bulletin/eecs/courses.html>

Additional Information

Department: Computer Science & Engineering

Hours: 40 (100%)

Appointment period: Sept-May (U-YR)

Duration of appointment: Sept. 1, 2014 through May 31, 2017

Salary range: Anticipated to be between \$75,000 and \$80,000, dependent upon experience and credentials.



UC SANTA CRUZ

COMPUTER SCIENCE - Ongoing Lecturer Pool

The Baskin School of Engineering at the University of California, Santa Cruz invites applications for an ongoing pool of qualified temporary instructors for the Computer Science Department. Computer Science includes: algorithms, analysis of algorithms, animation & visualization, artificial intelligence, computer literacy, computer programming, database systems, data structures, gaming, graphics, machine learning, security and software engineering. Outstanding candidates with the ability to teach courses in one or more of the above areas are encouraged to apply.

RANK: Lecturer

SALARY: Salary is commensurate with qualifications and experience. Estimated range of \$6,500 to \$10,000 per course.

MINIMUM QUALIFICATIONS: M.S., M.F.A, Ph.D., or equivalent in Computer Science, Digital Arts/Media, New Media, or closely related or relevant field and demonstrated potential for university teaching.

POSITION AVAILABLE: As openings occur

TO APPLY: Applicants should send a letter of application which includes description of courses qualified to teach; curriculum vitae; evaluations of teaching (if available); sample course materials – syllabi, handouts, etc. (if available); and arrange for three confidential letters of recommendation* to be sent directly to:

Chair, CS Lecturer Search Committee #T11-17

Baskin School of Engineering

University of California Please refer to position #T11-17 in all correspondence.

1156 High Street MS: SOE3

Santa Cruz CA 95064

Apply online at <http://apptkr.com/471061>

Questions may be sent via e-mail to cslecturer@soe.ucsc.edu.

*All letters will be treated as confidential; please direct your references to UCSC's confidentiality statement at http://apo.ucsc.edu/academic_policies_and_procedures/cappm/confstm.htm;

CLOSING DATE: This is an ongoing recruitment with no closing date. Applicants are asked to update their CVs every three years if they are interested in remaining in the pool.

For further details about the Baskin School of Engineering at UCSC, see <http://www.soe.ucsc.edu/>.

VISIT THE APO WEB SITE <http://apo.ucsc.edu>

EOE

Professional Opportunities

Union Affiliation

This position is covered under the collective bargaining agreement between the U-M and the Lecturers Employee Organization, AFL-CIO, which contains and settles all matters with respect to wages, benefits, hours and other terms and conditions of employment.

Application Deadline – June 7, 2014

Decisions will be made within 2 months of the end of the posting.

Final hiring approval is subject to administrative approval.

U-M EEO/AA Statement

The University of Michigan is an equal opportunity/affirmative action employer.

University of Pennsylvania

*Department of Computer and Information Science
/ GRASP Lab*

Postdoc in Machine Learning and Robotics

The University of Pennsylvania's GRASP lab invites applications for a Postdoctoral Fellow in machine learning and robotics, with a focus on lifelong machine learning, vision, and robotic control. The position is available immediately.

For further details and to apply, visit <http://www.seas.upenn.edu/~eeaton/openpositions.html>

To Apply: Visit <http://www.seas.upenn.edu/~eeaton/openpositions.html>

Washington State University

Assistant Professor in Software Engineering

WSU College of Engineering and Architecture is seeking a full-time tenure-track Assistant Professor in Software Engineering located in Pullman, WA.

For more information and to apply, please visit <https://www.wsujobs.com/postings/9623>.

WSU is an EO/AA Educator and Employer.

Washington State University

Clinical Associate Professor in Cyber Physical Systems/Security

WSU College of Engineering and Architecture is seeking a full-time Clinical Associate Professor in Cyber Physical Systems/Security located in Pullman, WA.

For more information and to apply, please visit <https://www.wsujobs.com/postings/10169>.

WSU is an EO/AA Educator and Employer.

Washington State University

Tenure-Track Faculty in Data Science

WSU College of Engineering and Architecture is seeking to fill two full-time tenure-track faculty positions in Data Science located in Pullman, WA.

For more information and to apply, please visit: <https://www.wsujobs.com/postings/10050>.

WSU is an EO/AA Educator and Employer.