

COMPUTING RESEARCH NEWS

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President Proposes Science Increases in FY12 as Congress Proposes FY11 Cuts

By Peter Harsha

President Barack Obama released his Administration's fiscal year 2012 budget request in mid-February, stressing the need to increase funding for federal science agencies as a way of ensuring the U.S. can "out-innovate, out-educate, and out-build" the rest of the world. The President's budget continues his commitment to double the funding for the National Science Foundation, the Department of Energy's Office of Science, and the National Institute of Standards and Technology.

The same week, House Republicans brought to the floor their proposal for dealing with the unfinished FY11 budget, a stop-gap spending bill that would cut budgets at those same science agencies from 5 to 18 percent compared to FY10.

The two approaches highlight two dramatically different philosophies about addressing America's economic

and federal debt crisis, and make clear the challenge facing the science advocacy community this year.

The President's approach acknowledges the difficult financial environment facing the government by freezing overall non-defense discretionary spending at FY10 levels, but makes some "strategic" investments in areas such as research and education that the Administration argues are crucial for the country's long-term health and competitiveness.

The House Republican approach, spelled out in a stop-gap funding bill called a "continuing resolution"—necessary because the previous Congress could not reach a resolution to FY11 funding through the normal appropriations process—would cut \$61 billion in discretionary spending compared to FY10, fully \$100 billion less than the President requested last February for this fiscal year. Included in those cuts are substantial cuts to the Department of Energy's research

efforts, as well as cuts to the National Institutes of Health, NIST, and NSF.

Neither proposal makes any substantial change to the massive entitlement programs like Social Security and Medicare that constitute the mandatory spending that makes up the bulk of the federal budget.

The House Republican proposal is more immediately relevant. As this goes to press, the House is debating the proposal as H.R. 1, a bill that combines the unfinished FY11 Defense Appropriation bill with a continuing resolution that relieves Congress from having to pass the remaining 11 unfinished appropriations bills. Because Congress could not finish its work on the FY11 appropriation bills by the start of the 2011 fiscal year on October 1, 2010, federal agencies have been operating since then under a continuing resolution that allows them to spend money at the same rate they spent in FY10. This has placed many agencies in a sort of limbo—plans for new programs or new hires have been placed on hold until Congress can reach resolution on the FY11 budget. The current continuing resolution expires March 4, 2011. If Congress fails to reach agreement on a new budget, or pass another

stop-gap funding measure by then, most government agencies could be forced to shut down. H.R. 1 would end the limbo the agencies face by giving them certain funding for the remainder of FY11.

The version of H.R. 1 the House is considering as this goes to press is actually the second version of the bill proposed by House Appropriations Chair Harold Rogers (R-KY). In the original proposal, Rogers' bill contained substantial cuts to the DOE's Office of Science (\$874 million less than FY10, an 18 percent reduction) and NIST (15 percent reduction), but provided an increase in funding for NSF (\$340 million vs. FY10, or 6 percent). However, that proposal, which cut a total of about \$32 billion from the FY10 budget overall, was roundly rejected by the 179-member-strong Republican Study Group in the House as being insufficiently austere, and Rogers was forced to revise the proposal and find deeper cuts. The revised bill contains \$61 billion in cuts to existing spending, more than \$100 billion less than the President requested for FY11, and includes larger cuts to

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NSF-CCC Workshop Explores Sustainability & IT

By Erwin P. Gianchandani and Ed Lazowska

Computing Community Consortium

About 60 leading researchers, program managers, and others gathered in Washington, DC, on February 3-4, 2011, to discuss new fundamental computing research opportunities that will arise as the nation and world seek long-term sustainable technologies and behaviors.

This two-day meeting (<http://cra.org/ccc/seesit>), co-sponsored by NSF's CISE Directorate and the Computing Community Consortium, sought to go beyond routine uses of information technology to identify high-risk, high-reward research directions in sustainability that, as yet, may not have received adequate attention or funding.

The workshop comprised three sessions with plenary talks followed by breakout discussions and report-backs, as well as a fourth session that served as an integration/wrap-up period. Tim Killeen, NSF's Assistant Director for Geosciences, helped set the stage at the outset by describing the Foundation-wide, multi-year Science, Engineering, and Education of Sustainability (SEES) initiative (<http://www.nsf.gov/sees>). The breakouts on the first morning focused on IT areas, such as cyber-physical systems, human-computer interaction, big data (including security and privacy), modeling and simulation.

That afternoon, participants looked at application domains such as energy, transportation, and environment/climate. The next morning, three topics served as the basis for the breakout groups: the data deluge; transparency of models; and systems integration.

Some highlights:

- We learned about **several large-scale projects** that are meeting with success because computer scientists have been brought together with application domain experts rather effectively. For example, Carla Gomes (Cornell University) described her Expeditions project on computational sustainability broadly; Vipin Kumar (University of Minnesota) talked about his Expeditions project on climate modeling; and Dave Waltz discussed his Con Edison-funded work on machine learning and the electric grid.
- We also heard from **application domain experts who clearly articulated the role of basic computing research in their areas**. For example, Michael Meyer (Georgia Institute of Technology)—a transportation systems engineer—gave an excellent overview of the transportation system, including

where we are today, where we could be in the future, and how IT research is critical for facilitating/enabling this transition.

- And Bill Tomlinson (University of California-Irvine; author of *Greening for IT*) gave a talk coupling technology with basic human needs, such as happiness and safety.

Several new ideas emerged from the discussions, such as the sustainability of sustainability data; the breadth of the sustainability space and the richness of the computational problems; and the challenges particularly for transportation.

The organizing committee hopes to have a final report describing the sustainability space—and particularly the role of computing research—in about a month. In the meantime, please visit the workshop website (<http://cra.org/ccc/seesit>) to review the full agenda, speakers' slides, and two-page white papers from many of the participants, along with a wealth of other information. Videos of the plenaries and breakout group reports will be posted there shortly as well. In addition, join in on the discussion stemming from the workshop by providing your views on

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Expanding the Pipeline

NCWIT Offers Community, Resources, and Results

By J. McGrath Cohoon

Computing Research Association

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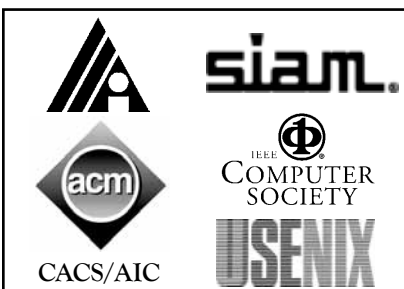
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Affiliate Societies



How does your organization contribute to building a better future for and through computing? Are you having a broad positive impact? NCWIT can help with that.

NCWIT, the National Center for Women & Information Technology, was founded in 2004 as a non-profit coalition of organizations that develops and amplifies efforts to diversify computing. NCWIT's leadership team consists of the co-founders—Lucy Sanders, Robert Schnabel, and Telle Whitney—along with elected leaders and support staff from each of the NCWIT Alliances. Together, they oversee strategic and operational decisions and guide the implementation of NCWIT's mission. That mission is to create community, resources, and awareness that strengthen the computing workforce and advance technology innovation through women's full participation. Reaching this goal is crucial for many reasons, including our nation's economic success, security, and progress toward a just and equitable society.

NCWIT convenes and provisions a growing coalition of over 200 prominent corporations, academic institutions, government agencies, and non-profits organized into Alliances. Annual NCWIT summits bring these groups together; NCWIT research-based materials identify and explain effective interventions for promoting diversity; and NCWIT campaigns, publications, and awards spread awareness of gender issues in Information Technology. In collaboration with and through its member organizations, NCWIT serves as a learning community that works toward reforms across the full education and career spectrum, helping to keep the IT industry strong and healthy. Evidence suggests that NCWIT is making progress.

Alliances Focus on Reform They Can Influence

Member organizations form Alliances and work together on conditions that affect girls and women in computing. These Alliances are communities of academic, workforce, K-12, and entrepreneurial institutions that employ evidence-based practices in their reform efforts. The Academic Alliance (AA), for example, includes 151 higher education institutions focused on computing education and organizational culture. Currently, the members are working together on four projects: 1) a toolkit for designing research experiences for undergraduate women, 2) sharing their own experiences with practices that improve the gender balance in computing, 3) recruiting and engaging new members, and 4) offering a webinar series. All of these projects incorporate relevant research findings and assessment methods from sociology, psychology, communication, and other disciplines that study the relationship between gender and

technology, pedagogy that engages diverse students, or organizational change. NCWIT supports these Academic Alliance efforts with its Seed Fund (sponsored by Microsoft Research), its new Student Chapter Fund (sponsored by Return Path), and through an NSF-funded Extension Services program.

The NCWIT Extension Services for Undergraduate Programs (ES-UP) provides trained consultants and program evaluators who serve AA members. The consultants first seek to understand conditions and issues specific to their client departments, and then make research-based recommendations for improving women's recruitment and retention. Consultants support faculty in strategically planning and evaluating the reforms their departments undertake, collect data to document progress, and assist with disseminating word of client accomplishments. Like all NCWIT resources, this valuable service is free to AA members thanks to funding from NCWIT sponsors.

Members of the NCWIT Academic Alliance have evidence of measurable progress toward the goal of gender balance in their undergraduate programs. The external evaluator for NCWIT, Dr. Elizabeth Litzler of the University of Washington's Center for Workforce Development, investigated progress in women's representation for these programs. Dr. Litzler found that the majority of NCWIT AA members improved women's share of enrollment by an average of three or four percent during a time when the national average enrollment of women in computing declined. Her findings demonstrate a positive relationship between active NCWIT membership and improved percent of women in undergraduate computing programs. Further, more improvements were shown in departments that were more heavily influenced by NCWIT practices, had higher levels of involvement in NCWIT, and participated in the Pacesetters program (described in more detail below).

The Workforce Alliance (WA) comprises a community of about 30 industry leaders and major employers of computing professionals, including Microsoft, Avaya, Pfizer, Bank of America, Merck, Google, EMC, Intel, Qualcomm, Apple, Cisco, Medco, Zynga, Thomson Reuters, Boehringer

Ingelheim, and IBM. NCWIT creates research-based resources for these organizations to improve hiring and promotion practices and retention of women at all levels. For example, NCWIT recently created a series of resources called "Supervising in a Box" that supports efforts to reduce employee turnover, capitalizes on diverse innovative thinking, and strengthens earnings. Another recent resource, "Women and IT—the Facts," is a concise report covering the business case for inclusion, barriers technical women face in corporations, and practices for mitigating these barriers. Currently, the WA is working on issues related to retention of mid-career women, updating its popular report on patenting, "Who Invents IT," and interviewing men who have positively influenced the careers of technical women.

The K-12 and Entrepreneurial Alliances focus on other important portions of the computing career path. With its vast reach into national organizations (e.g., Girl Scouts of the USA, 4-H, International Society for Technology in Education, Computer Science Teachers Association, and many others), the K-12 Alliance seeks to improve the image of computing and the teaching of foundational computing skills. This year the K-12 Alliance is launching a new national campaign (sponsored by Merck) to give K-12 professional school counselors information about IT educational pathways and careers. At the career level, the Entrepreneurial Alliance creates a platform for member collaboration on engaging more women in starting IT businesses. The Entrepreneurial Alliance honors women who start IT companies with its annual Symons Innovator Award, and has a regular podcast audio interview series with women technology entrepreneurs. This interview series is an excellent source for entrepreneurial educational programs, and also serves to inspire young women to consider an entrepreneurial career.

NCWIT's Social Science Advisory Board (SSAB) serves as a valuable resource for all the NCWIT Alliances. Leading social scientists with expertise in policy, anthropology, gender studies, technology education, and organizational change consult on

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PLEASE NOTE

"Computing Degree and Enrollment Trends"

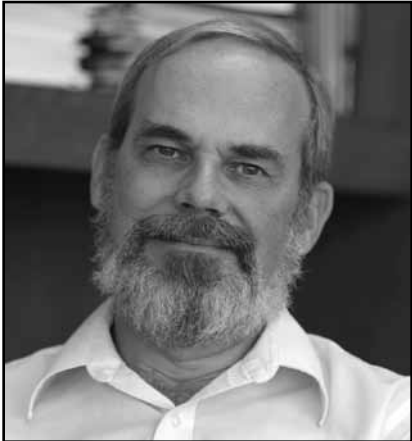
from the latest Taulbee Report will be announced in March

<http://www.cra.org>

Musings from the Chair

Capturing the Design Crowd

By Eric Grimson, CRA Board Chair



A few months ago I was talking to a group of freshmen who had just decided on their major. I asked them how they had made that decision.

One young man told me that he had been torn between mechanical engineering versus electrical engineering and computer science. After a lot of careful thought, he had finally opted for mechanical. I told him that was a great major, but asked what had finally crystallized his decision. His response was that he was really excited about design, and thought that mechanical engineering was a better option. Out of curiosity, I asked him for his favorite example of a well-designed product; his response was to reach in his pocket and pull

out his iPhone. Somewhat surprised, I asked him what he thought was inside the iPhone—a bunch of tiny gears?

Now perhaps this was a slightly confused young man, but the story carries a message for our community. Further discussion revealed that he was fascinated as much with the uses of the iPhone—games, applications for search, social networking opportunities, and other enabling software applications—as he was with the device itself. Somehow the coolness of the device, its sleek form factor, and its display system translated in his mind into the mechanical design of the physical manifestation, rather than the software, the algorithms, or the computational architecture that is the heart of the system.

While the story may be specific to this young man, I worry that it is symptomatic of a larger issue—that we as a community are losing the design competition. Clearly there are still many students and faculty members who are attracted to computational endeavors because of the great opportunity for design—whether of software systems, distributed networks, clever algorithms, interactive interfaces, intelligent appliances, or creative applications of existing techniques. But for many students, somehow the

excitement of design in computation, whether it is design of the elements of a computational system or using a computational system as an integral tool in the design of something else, is being obscured or lost. We need to recapture that excitement. We need it to maintain a healthy influx of new talent into the field by attracting bright students with novel ideas that will spur the next set of great new ideas to computing research, not to other areas of engineering. We need it to ensure the creation of the intellectual foundations and technological infrastructure that will support the generation of new commercial enterprises. And we need it to enhance the central role of computation in the broader realm of design.

Recapturing the excitement of design in computation, and communicating it to students, will be a challenge. No one element will be enough; we will probably need action on many fronts. Finding ways to ensure that exciting and challenging design experiences are intertwined throughout our curricular experiences—and not just deferred to senior capstone projects or to graduate thesis work—will be important, and many institutions have found inventive ways to do this. Leveraging links to other

fields to demonstrate the key role of design in computational methods in those fields will both help to attract students and demonstrate to funders the critical role of computation in design. Exploring methods to connect design opportunities in classroom and laboratory settings with real-world practitioners, through links to alumni, local companies, or others, will help provide context to motivate design ideas. And importing best practices from other domains will enable us to increase the visibility of design as a central component of computational research and development.

And maybe the next time I have a conversation with students selecting majors, I will hear how a student selected computer science because that is the obvious place to design the next generation of mechanical devices. ■

Eric Grimson is Chancellor of MIT, the Bernard Gordon Professor of Medical Engineering, and Professor of Electrical Engineering and Computer Science at MIT.

CIFellows Descend on Washington

By Erwin P. Gianchandani

Computing Community Consortium

Nearly 80 Computing Innovation Fellows (<http://cifellows.org>) descended on Washington, DC, in mid-December for the 2010 CIFellows Project Research Meeting and Career Mentoring Workshop (<http://cifellows.org/network/agenda>). Funded by the National Science Foundation and run by the Computing Research Association and Computing Community Consortium, this meeting provided the 2009 and 2010 CIFellows with opportunities to network with one another and to

receive career advice from leading experts in the field.

Microsoft's Peter Lee kicked things off with a captivating dinner keynote presentation, describing his career trajectory, recent clean-slate initiatives he implemented at DARPA, and important observations and lessons about "Being a CIFellow." He implored the CIFellows to be independent thinkers, to always keep in mind the value of basic research, and to simply be great researchers. "If in your research you are not failing occasionally, that probably means you are not thinking big enough," Peter said. "You have to be willing to take risk and... have a few sleepless nights... to really accomplish great things."

The meeting continued over the next two days with:

- Talks by NSF/CISE, DARPA, and the Laboratory for Telecommunications Sciences about funding opportunities and how to write compelling proposals;
- A one-minute madness (during which each of the CIFellows had 60 seconds to describe his/her background, research interests, and future career aspirations);
- A poster session with presentations by second-year CIFellows;

- A tutorial on how to write good proposals; and
- A series of talks on planning one's research career, networking, teaching, mentoring and managing students, landing a permanent position in academia or industry, and managing the work/life balance.

In preparation for the meeting/workshop, the CIFellows uploaded their CVs, one-page research abstracts, one-minute madness slides and—in the case of the second-year CIFellows—research posters to a new community Web portal for and about the CIFellows: <http://cifellows.org/network>. Be sure to check it out to learn more about the CIFellows and their cutting-edge research projects.

Special thanks to Mary Jean Harrold (Georgia Tech) and Carla Ellis (Duke) who helped organize the program—and to all the speakers who devoted their time and energy to the meeting!

The CIFellows Project was first funded in 2009 to enable recent Ph.D.s in computer science to obtain one- to two-year postdoctoral positions at academic institutions and industrial organizations with basic computing research and education programs. The initiative sought to forestall the permanent loss of research talent

likely to occur as a consequence of the financial crisis, and to enable new Ph.D.s to develop additional experience, making them more effective researchers and/or teachers in the long term.

Following a successful first year—in which nearly all the CIFellows and their mentors reported positive experiences, and over a quarter of the 60 CIFellows landed permanent positions within academia and industry—the CIFellows Project was funded again in 2010 by NSF. The 2010 class of CIFellows, comprising 47 recent Ph.D. graduates from 34 different Ph.D.-granting colleges and universities within the U.S.—with assignments to mentors at 36 unique host organizations—was announced in early January: <http://www.cra.org/ccc/press.release.1.14.11.php>. ■

Dr. Erwin Gianchandani is the Director of the Computing Community Consortium (CCC) and the Computing Innovation Fellows Project (E-mail: erwin@cra.org; Ph: 202-266-2936; Fax: 202-667-1066).

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Calling the Computing Research Community to Engage in a Conversation: *PostDocs in Computer Science: Where are we now – and where should we go from here?*

By Anita Jones and Erwin Gianchandani

Data from CRA's annual Taulbee Survey document substantial growth in the cadre of U.S. and Canadian postdoctoral fellows over the past decade. Most recently, the Computing Community Consortium (CCC) and National Science Foundation (NSF) have funded one- to two-year postdoctoral positions through the Computing Innovation Fellows Project, in hopes of retaining recent PhDs in computing research and teaching during difficult economic times. We believe it is time for the community to understand the significance of this *PostDoc surge*, assessing whether it is the right course of action for the field in the long term.

According to Taulbee data, the numbers of new PostDocs soared from 60 in 1998 to 159 in 2009 (three-year rolling averages). Given that the average duration of a PostDoc position is about 1.8 years, this increase is consistent with published data from NSF's Computing and Information Science and Engineering Directorate (CISE). They report that a total of 330 PostDocs participated in CISE grants in 2009. (CISE provides about 82 percent of all Federal funding for basic computing research, so 330 PostDocs is a fairly reasonable estimate of the total number of PostDocs in the field as a whole.)

By contrast, concurrent with the growth in the number of PostDocs, the absolute number of new tenure-track faculty has declined sharply (from a three-year rolling average of 224 in 2004 to an equivalent of 151 in 2009). Moreover, the number of recent PhDs who are hired into industry immediately out of graduate school is

now approximately one-half of the total number of PhD graduates in any given year (755 out of 1,800 PhD graduates in 2009), up sharply from about one-quarter several years ago (243 of 919 went to industry in 2004). More and more PhD graduates are also pursuing first-time employment abroad.

We seek to ask whether the rise in PostDocs is positive or negative for the field. Is it positive or negative for the individuals? Is it a sign of a maturing discipline? Is it matched to the activities needed to conduct computing research today?

Whatever the case may be, it is important to recognize that this is a substantial change, to understand its significance and likely impact in the short and long term, and to determine the best way forward for the field.

While there are many perspectives on this change in the field, one of the most important is the impact on the PostDoc, the individual. By its very nature a PostDoc position is a temporary training position. Wages are dramatically lower than those of tenure-track, research and teaching faculty. In some universities the benefits of a PostDoc are more like those of a student than those of employees. Benefits to employees may be greater in areas such as health care, retirement, access to childcare, and access to wellness centers. At most universities and in industry, PostDocs cannot be Principal Investigators on grant proposals, reducing their independence at the time when they would be asserting it in most alternative positions.

From a personal perspective, PostDocs are typically at an age when

they marry and start families. A PostDoc position is not permanent. The individual must do another job search and, typically, must move from one geographic locale to another with the career disruption, personal disruption and expense that this causes. Relocation is more difficult for women and men who are nurturing a young family.

On the positive side, the PostDoc generally has freedom to focus almost entirely on research, presumably theirs. Typically that is impossible for individuals in alternative positions such as teaching and tenure-track faculty. However, some PostDoc advisors do assign other obligations to the PostDoc. Credentials amassed during a PostDoc experience may materially increase the possibility of finding a permanent position in a more desirable organization than would otherwise be possible.

Anecdotally, some academic hiring committees are requiring publication records that are very difficult to amass during a PhD program, thus nudging the field to accept the PostDoc position as necessary in order to be hired into a tenure-track faculty position. Is this good for the field and for new entrants to the research enterprise?

We discuss the impact on the individual in this article. There are other perspectives to be considered. It is timely to have a discussion of these trends and to consider whether the CS research community should do things differently. These trends are the result of myriad individuals and organizations making independent decisions. But *ultimately*, those

decisions should yield a collective result that the field believes to be most beneficial.

To help facilitate this discussion about the need for, and role of, PostDocs within the computing research community, the CRA commissioned a committee in November 2010 to prepare a white paper that reports the statistics associated with academic and industry hiring, articulates the relevant issues about PostDocs in the context of the many stakeholders, and specifically solicits input from the community. The white paper is available at <http://cra.org/postdocs>. The goal is for the community to determine the paper's conclusion by expressing their opinions on an associated blog—in particular, to articulate whether the PostDocs cadre should grow, shrink or stay the same.

We encourage you and your colleagues within your department or laboratory to review the white paper, discuss the issue, and post your views (collectively or individually) on the companion website (<http://cra.org/postdocs>). We seek to get a sense of the community by March 15. Following review of the comments received, the committee will prepare a revised version of the white paper articulating the community's broad view (and consensus, if any) on this issue. ■

Anita Jones, University of Virginia, is a Member of the CCC Council; Erwin Gianchandani is Director of the CCC.

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NCWIT projects and assessment of interventions. They also briefly advise members one-on-one. In addition to the guidance its members provide to the Alliances, the SSAB disseminates theories and research relevant to girls, women, and information technology.

Pacesetters Publicly Set Goals

In 2009, NCWIT launched Pacesetters, a set of Academic and Workforce Alliance members committed to accelerating recruitment and retention of women in their organizations. Pacesetters publicly declared their individual goals for "net new women," women who would not otherwise have started or remained on the path to a computing career. A senior leader and an activist from each Pacesetter organization work together to build teams, develop and fund reform programs, and share their results as they work toward their net new women goals. With successive cohorts of Pacesetters' contributions, the national representation of women in IT will move toward gender

balance. NCWIT supports and facilitates progress by hosting annual meetings, providing expertise on research-based effective interventions and on evaluation, and publicizing member successes.

Become a Member of NCWIT

NCWIT welcomes new member institutions and organizations committed to reform. Each member organization identifies at least one representative who will attend the annual meeting and act as a conduit for information and resources, bringing them back to colleagues, implementing the practices that are suitable for their environment, and reporting results back to their Alliance members. In return, members get all the community, resource, dissemination, and networking benefits NCWIT has to offer.

The next NCWIT member meeting will be in New York City in May 2011. As with previous meetings in Portland, Oregon, Mountain View, California, Irvine, California, and

Urbana-Champaign, Illinois, NCWIT will bring its members together with exciting and knowledgeable speakers to learn about research and practices that can improve diverse engagement in the study and professions of computing. Past speakers have included Maria Klawe, Ray Ozzie, Jessica Jackley, Brian Nosek, Rick Rashid, Mark Udall, Shelley Correll, Freada Kapor-Kline, Michael Lomax, Joyce Roche, Bernice Sandler, Marie Wilson, Carolyn Buck-Luce, Chris Scalet, Jeff Kiesling and Padmasree Warrior.

This year promises to be equally informative and stimulating. Scott Page will speak about the relationship between diversity and innovation; Joshua Aronson will identify ways of mitigating stereotype threat; Wendy Faulkner will explain how organizational change can happen; and David Pogue will answer questions about turning tech consumers into innovators—to name just a few of the interesting presenters.

To learn more about NCWIT membership and how it can help you build a better future for and through

computing, visit ncwit.org, or contact an Alliance manager through info@ncwit.org. ■

J. McGrath Cohoon is a Senior Research Scientist at NCWIT and an Associate Professor of Science, Technology & Society at the University of Virginia.

Richard Tapia Celebration of Diversity in Computing

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Social Leadership: Empty Seats at the Table

By Dan Reed

I spend a good bit of time on airplanes, which has historically provided some respite from the unending deluge of electronic communications we all now face. Concomitantly, it provides the opportunity to think and write. Not too surprisingly, I am writing this column on an airplane. Why am I on airplanes you might ask? It's definitely not an *Up in the Air* movie quest for an elusive and magical number of frequent flyer miles.

Instead, I travel to visit governments, universities, companies and non-governmental organizations (NGOs) to discuss the future of computing technologies and their likely effects on society, the economy and our technological future. Those conversations repeatedly expose two themes worthy of broader discussion in the computing research community. The first is the social future shock created by the rapidity of technical change, wrought by computing advances. The second is the profound dearth of computing researchers engaged in these policy discussions.

Technology Future Shock

In computing, we have been the creators and beneficiaries of a rare and transformative force, exponential increases in computing power, storage capacity and network bandwidth. When coupled with algorithmic advances and software innovations, these quantitative changes have created qualitative changes in how we work, play, socialize and communicate. Indeed, one need look no further than the frenzy of consumer electronics shopping around the holiday season to see the effect on our society and our culture.

Despite society's enthusiastic embrace of computing, it is not without its deleterious effects. Societal norms and expectations generally evolve at a much slower pace than technical innovation, and our processes presume that change is gradual and generational. Exponential technological change, with its rapid, order-of-magnitude effects, can be extremely disruptive, creating, transforming and even destroying companies and economic sectors, obviating certain skills and

spawning demands for others, and even shaping government interactions and expectations.

Both organizations and individuals are struggling with the implications and effects of technological flux, particularly in these trying economic times. Without doubt, this is another instance of Alvin Toffler's famed *Future Shock*, with all the social implications inherent in rapid change.

Empty Seats at the Table

In the Information Age, those of us who are computing researchers are well placed to be bilingual, translating computing technology trends and capabilities into the language understood by policy makers and other influentials, and, in turn, relating policy desires to other researchers. However, as I talk to groups across North America, I am repeatedly struck by the relatively small number of computing researchers who are engaged in the formative policy discussions regarding our technological and economic future.

There are empty seats at the policy table, seats that should rightly

and effectively be filled by senior computing researchers as we discuss science and technology research investments; personalized medicine and health care; smart grids, energy and the environment; education and digital inclusion; privacy and security; communications and access; and global economic competitiveness. Those of us who have been beneficiaries of past research policy efforts have a debt to repay, one due to our younger colleagues and to society as a whole.

I encourage all of you who see opportunities to educate and inform, to discuss and evaluate, to influence and engage to do so. The future depends on our actions, and it can equally be shaped by our inaction. ■

Dan Reed, former CRA Board Chair, is Microsoft's Corporate Vice President for Technology Policy and Strategy and Extreme Computing. Contact him at Daniel.Reed@microsoft.com or his blog at www.hpcdan.org

Endorsement Effort Announced for Proposed AP CS Principles Course

The College Board and the NSF-funded team building the new Advanced Placement test in computing seek endorsements of their effort beginning March 11, 2011. The proposed course, formally known as Computer Science Principles, resulted from a two-year effort to build a curriculum framework for concept-rich computing class; it relied on

wide community input. The course is rigorous, engaging and inspiring. As such, the team hopes to attract a broader, more diverse population of computing majors by exposing high school students to solid CS concepts. They also hope that teaching the course in college—perhaps as CS0—will attract community college and college students to the major as well.

AP courses, by design, are college level and CS Principles is no exception. It has been piloted this academic year at five schools: the Metropolitan State College of Denver, UC Berkeley, UC San Diego, University of Washington, and UNC Charlotte. This fall, it will be piloted in additional high schools, 2- and 4-year colleges, and universities.

AP CS Principles represents a significant opportunity for the computing community because it will introduce a rigorous, academic computing course into high schools nationwide. (The current AP CS A will continue but it attracts relatively few students.) With CS Principles, we can reach a larger, broader audience. Find more at <http://csprinciples.cs.washington.edu>.

Your help is needed now to make CS Principles an official AP Course! A significant number of departments across the country must agree to give it credit and/or placement.

Action: To insure success of the community's long effort to create a solid computer science course for all high school students, make sure your department signs the credit/ placement attestation at <http://www.collegeboard.com/csprinciples/> and check as many boxes as apply. Support is most useful before May 15, 2011. ■

Collaborative Research Experiences for Undergraduates (CREU)

Application Deadline: May 10, 2011

Sponsored by CRA's Committee on the Status of Women in Computing Research (CRA-W) and the Coalition to Diversify Computing (CDC), the CREU program is aimed toward increasing the number of women and underrepresented minorities who go on to CS&E graduate programs.

Students have the opportunity to conduct undergraduate research at their home institution during the academic year and, optionally, the following summer. Formerly administered as two separate programs—CREU and MRO-W—the program includes not only computer science and computer engineering research, but also collaborative, multidisciplinary research creating and using cyber-infrastructure.

Students from an underrepresented group receive either a stipend or a conference travel allowance for their work in the academic year, and a stipend for the optional summer extension. Each team can also request an extra \$1,500 to be used for supporting materials and activities.

For more details, go to the CRA-W web site (<http://www.cra-w.org/creu/>) and select "Collaborative Research Experience for Undergraduates" from the "Undergraduate" menu.

Grace Hopper Celebration of Women in Computing

November 8–12, 2011

Portland, Oregon
Oregon Convention Center

<http://gracehopper.org/2011/>

President Proposes Science Increases in FY12 as Congress Proposes FY11 Cuts from Page 1

DOE Science and NIST and reverses NSF's originally proposed increase, replacing it with a 5 percent reduction in budget.

The Republican leadership brought the bill to the floor under an "open rule," a somewhat unusual move for a continuing resolution, which allowed any member to offer an amendment to any portion of the bill while under consideration. As a result, at press time, there were more than 400 amendments pending, leaving final House-approved funding levels for federal science agencies uncertain. Also adding to the uncertainty is the Democrat-controlled Senate, which is far less likely to go along with the deep cuts to science programs likely to be approved by the House. It is very unclear how the House and Senate will reach compromise numbers, and how the threat of a Presidential veto will impact the negotiations. For the latest updates on how science agencies fared in FY11, see CRA's Computing Research Policy Blog (<http://cra.org/blog>).

The President's budget request takes a much more favorable view of the importance of the federal investment in science, a message the President has apparently decided to make a key theme of his presidency.

In January, the President spent the first 25 minutes of his State of the Union address focused on research and education and their importance to innovation and the long-term competitiveness of the U.S., a remarkably prominent mention for R&D. He followed it with two weeks of speeches throughout the country touting his innovation theme. In one sense, the effort has been a boon to the science advocacy community, giving prominence to issues and themes they've been trying to raise for years. In another, though, the additional attention has actually made federal R&D a lot more contentious and partisan. Because the President has made science funding a cornerstone of his Administration, those looking to oppose the President almost have to oppose more federal spending on science.

Politically, this may be a smart move for the President as it allows him to set up the Republicans as the anti-science, anti-innovation, anti-progress party. Practically, though, it makes the job of the science advocacy community much more difficult because what used to be a non-partisan, almost non-noticeable chunk of the federal budget is now a prominent, partisan battle. It is easier to make gains in today's

narrow-electoral-margin times by being non-partisan and under the radar. That tension is likely to color science advocacy efforts going forward this year and next.

In his budget request, the President has prioritized funding for a number of key science agencies. Under the President's plan, NSF would receive \$7.77 billion in FY12, an increase of 13 percent over FY10 (comparisons with FY11 are impossible because Congress still has not finished FY11 appropriations as this goes to press). NSF's Research and Related Activities (R&RA) accounts would see an increase of 12.4 percent versus FY10, an increase of \$689 million. NSF's Education and Human Resources account would also grow, though at a more modest 4.4 percent, a \$38 million increase.

Computing research at NSF would see a disproportionate level of increase in the President's budget—an indication that computing research is viewed as especially responsive to agency and national priorities. NSF's Computer and Information Science and Engineering (CISE) directorate would see an increase of \$109.6 million to \$728.4 million in FY12, a 17.7 percent increase over FY10—well above the R&RA average of

12.4 percent and second only to the Engineering directorate's 22.1 percent increase. Investment in IT research foundation-wide would increase to \$1.26 billion in FY12, an increase of \$167 million over FY10, or 15 percent.

The DOE's Office of Science would also see a healthy increase under the President's plan. Funding at DOE Science would increase 9.1 percent compared to FY10, to \$5.4 billion. DOE's Advanced Scientific Computing Research program would grow 22 percent to \$466 million in the request. And Basic Energy Sciences would grow 24 percent to \$1.9 billion in FY12.

NIST would see significant increases under the President's plan as well. NIST's research accounts would grow more than 48 percent from FY10, to \$872 million in FY12. That funding includes \$621 million for NIST's research accounts in Scientific and Technical Research Services, an increase of \$160 million vs. FY10.

Also notable in the President's Budget Request is a proposal to auction a portion of radio spectrum and use the proceeds from that auction to fund a new Wireless Innovation and Infrastructure Initiative. This aims to double the amount of wireless spectrum available for mobile broadband, provide at least 98 percent of Americans with access to 4G high-speed wireless, create a \$3 billion fund to enable R&D of emerging wireless technologies and applications (including \$1 billion in research funding at NSF), develop and deploy a nationwide, interoperable wireless network for public safety, and funnel nearly \$10 billion into deficit reduction over the next decade. The President's proposal requires an act of Congress both to set the auction and determine where the proceeds would be spent, but the plan should help catalyze the discussion in Congress.

Congress will take up the President's budget as soon as they finish work on the FY11 continuing resolution. Republicans in the House have already characterized the plan as "dead on arrival" for its failure to aggressively rein in federal spending, but Democrats in the Senate will have much to say on the issue as well.

As always, check CRA's Computing Research Policy Blog for all the latest numbers and news. ■

**President Obama's FY 2012 Budget Request
Selected Science Accounts
(in millions)**

	FY 2010 Estimate	FY 2012 Request	Change from FY 2010	
			Amount	Percent
National Science Foundation	\$6,873	\$7,768	\$895	13.0
Research and Related Activities	\$5,564	\$6,254	\$690	12.4
CISE Directorate	\$619	\$728	\$109	17.6
Office of Cyberinfrastructure	\$215	\$236	\$21	9.8
DOE Office of Science	\$4,964	\$5,416	\$452	9.1
Advanced Scientific Computing Research	\$383	\$466	\$83	21.7
ARPA-E	\$389	\$550	\$161	41.4
NIST	\$863	\$1,004	\$141	16.3
Scientific and Technical Research Services	\$521	\$681	\$160	30.7
Defense Science and Technology	\$13,300	\$12,200	-\$1,100	-8.3
Basic Research (6.1)	\$1,815	\$2,078	\$263	14.5
Applied Research (6.2)	\$4,984	\$4,787	-\$197	-4.0
Development (6.3)	\$73,734	\$69,664	-\$4,070	-5.5
DARPA	\$2,986	\$2,984	-\$2	-0.1
Defense Research Sciences	\$194	\$291	\$97	50.0
Info and Communications Tech	\$271	\$400	\$129	47.6
Cognitive Computing	\$133	\$49	-\$84	-63.2

Grimson Appointed Chancellor of MIT

CRA's board chair, Eric Grimson, has been appointed Chancellor of MIT, effective March 1, 2011.

In making the announcement, MIT President Susan Hockfield stated: "I am very pleased that Professor Grimson has agreed to take on this critical post. He has demonstrated in every imaginable way his commitment to ensuring the fullness of the educational experience of our students. His record of scholarship, teaching and service to MIT is

measured not only in decades, but also in the thousands of students he has taught, advised and mentored."

A leading expert in computer vision, Grimson has been affiliated with MIT for 35 years and served as the Head of the Department of Electrical Engineering and Computer Science (EECS) since 2005. As a member of MIT's Computer Science and Artificial Intelligence Laboratory, Grimson led the computer vision group as it pioneered state-of-the-

art systems for activity and behavior recognition, object and person recognition, image database indexing, image guided surgery, site modeling and many other areas of computer vision. Grimson previously served as the Education Officer for EECS and as Associate Department Head.

Grimson has also long been active in service to the MIT community and, in particular, to students. He has served on the Commencement Committee for 20 years, chairing

it for the past 13. He chairs the Faculty Advisory Committee on Student Support Services, serves on the governing board of the Gordon Engineering Leadership Program, and co-chaired the Education Working Group of the Provost's Budget Task Force. He currently is academic advisor to 26 EECS students. ■

NSF-CCC Workshop Explores Sustainability & IT from Page 1

future directions at the intersection of sustainability and IT at <http://www.cccb.org/2011/02/10/a-workshop-on-sustainability-it/>.

Special thanks to the members of the organizing committee for putting an outstanding workshop together in a short time frame: **Bob Sproull** (Oracle; chair); **Randy Bryant** (Carnegie Mellon University; co-chair); **Doug Fisher** (Vanderbilt University); **Carla Gomes** (Cornell University); **Krishna Kant** (Intel Corporation & NSF); **Bill Rouse** (Georgia Institute of Technology); **Prashant Shenoy** (University of Massachusetts at Amherst); and **Dave Waltz** (Columbia University). And thanks also to everyone who contributed their time and ideas as participants!

In Other CCC News...

Welcome New Council Members

Under the terms of the cooperative agreement between the CRA and the National Science Foundation, CCC Council members serve three-year rotations. In January, the CRA, in consultation with the NSF, appointed four new members to the Council, each with three-year terms through January 2014: **Deborah Crawford**, Vice Provost for Research, Drexel University; **Gregory Hager**, Professor of Computer Science, Johns Hopkins University; **John Mitchell**, Professor of Computer Science, Stanford University; and **Josep Torrellas**, Professor of Computer Science, University of Illinois at Urbana-Champaign. In addition, **Bob Sproull**, Vice President & Director of Oracle

Labs—whose previous term ended this year—has agreed to continue, and he was appointed to a second term effective through January 2014.

These appointments ensure 18 Council members with three-year terms, staggered such that about six rotate every January, plus Council Chair Ed Lazowska (University of Washington) and Vice-Chair Susan Graham (University of California-Berkeley).

Rotating off the Council this January were Bill Feiereisen (Intel Corporation); David Kaeli (Northwestern University); and John King (University of Michigan).

URO-Zone

As reported previously, the CCC is providing a web resource for undergraduates seeking research opportunities. This resource, called the *Undergraduate Research Opportunities Zone (URO-Zone)* and located at <http://cra.org/ccc/uro-zone>, offers an introduction to computing research; examples of successful undergraduate computing research projects, including anecdotal stories of recent CRA and ACM undergraduate research awardees; and a growing list of possible opportunities. This website should be particularly useful and timely in the next few months, as undergraduates interested in getting involved in research this summer look for appropriate placements.

Research Visions Sessions

Finally, as part of its mission to identify major new research opportunities,

the CCC is sponsoring a series of “research visions” sessions at several computing research conferences. The goal of these sessions is to break free of the shackles of the normal reviewing process while still requiring a paper. In this way, the “research visions” sessions differ from a “midnight session” of informal talks, in that the paper allows the ideas presented to be more broadly accessible. To incentivize submissions to these sessions, the CCC has offered travel awards to the top three papers/presentations, as judged by program committees or participants, and publicized the winners through the CCC Blog.

To date, *three research visions sessions have been held*—and the CCC has blogged about the results, including the top submissions:

- **A “Fun Ideas and Thoughts” session at PLDI 2010:** <http://www.cccb.org/2010/07/26/pldis-fun-ideas-thoughts-stimulating-new-research-visions/>
 - **A “Research Vision” session at OSDI 2010:** <http://www.cccb.org/2010/10/07/research-visions-at-osdi-10/>
 - **An “Outrageous ideas and Visions” (OIV) track at CIDR 2011:** <http://www.cccb.org/2011/01/18/outrageous-ideas-at-cidr-seeking-to-stimulate-innovative-research-directions/>
- Please take a look at these summaries—and be sure to contact the CCC if you would like to run a

session at an upcoming conference or workshop you are organizing.

Designing a Digital Future

Five members of the CCC Council—**Randy Bryant**, **Susan Graham**, **Anita Jones**, **Ed Lazowska**, and **Bob Sproull**—served as members of the Working Group that advised the President’s Council of Advisors on Science and Technology on a recent assessment of the Federal Networking and Information Technology Research and Development Program. The impact of the report—*Designing a Digital Future*—is already evident in the President’s FY2012 budget request. Complete information is available at: <http://lazowska.cs.washington.edu/nitrd/>. ■

Dr. Erwin Gianchandani is the Director of the Computing Community Consortium (CCC) and the Computing Innovation Fellows Project. **Dr. Ed Lazowska** is Chair of the CCC Council and Bill & Melinda Gates Chair in Computer Science & Engineering at the University of Washington.

NAE Announces New 2011 Members Elected

The National Academy of Engineering (NAE) recently elected 68 new members and nine foreign associates, bringing the U.S. membership to 2,290 and the number of foreign associates to 202.

Congratulations to the new members elected in the Computer Science & Engineering section: **Susan Dumais**, Microsoft Research; **Daphne Koller**, Stanford University; **Hank Levy**, University of Washington; **Jitendra Malik**, UC Berkeley; **Nick McKeown**, Stanford University; **Don Norman**, Northwestern University; **Ari Requischa**, University of Southern California; **Fred Schneider**, Cornell University; **Mihalis Yannakakis**, Columbia University. **Jonathan Rose** (University of Toronto) was elected as a Foreign Associate.

According to the NAE’s press release of February 8, 2011, election to the National Academy of Engineering is among the highest professional distinctions accorded to an engineer. Academy membership honors those who have made outstanding contributions to “engineering research, practice, or education, including, where appropriate, significant contributions to the engineering literature,” and to the “pioneering of new and developing fields of technology, making major advancements in traditional fields of engineering, or developing/ implementing innovative approaches to engineering education.” ■

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Change of Address: Note that a change of address must include the old and new addresses with ZIP+4. Please include a street address or PO Box number.

Postmaster: Send address changes to: CRA, 1828 L Street, NW, Suite 800, Washington, DC 20036. Postage paid at Washington, DC.

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Professional Opportunities

Accenture

Researcher Positions

Accenture is a global management consulting, technology services and outsourcing company with offices and operations in more than 200 cities in 52 countries. Our clients span the full range of industries around the world and include 96 of the Fortune Global 100 and three-quarters of the Fortune Global 500.

Accenture Technology Labs, which investigates how advances in technology will shape the future of Accenture and its clients, is a great place for researchers interested in working at the intersection of technology and business. We investigate fundamental problems in areas such as software engineering; hardware, software, and system architecture; large-scale data management; human-computer interaction; machine learning; cyber security.

Our research group builds prototypes that demonstrate how advanced technology will change the way we live, work, and do business. Our researchers work in collaboration with internal and external partners from both industry and academia to leverage the best assets and ideas from all sources. We validate our hypotheses, and drive impact from our work, through application in real-world business contexts.

Qualifications for Researcher:

- Ph.D. (or pursuing PhD with expected completion in the next 12 months) or equivalent in computer science, computer engineering, or some other computer-related fields OR candidates without Ph.D. with 4 years of relevant industrial experience will also be considered.
- 2+ years' experience publishing research results in major refereed conferences and/or journals.
- 2+ years' programming experience.

Programmer

- M.S (or B.S) in Computer Science (or related area)

For more information or to apply:

<https://accenture.taleo.net/careersection/10003/jobdetail.ftl?lang=en&job=00107382>

Boston University Metropolitan College

Computer Science

Assistant/Associate Professor

Boston University's Metropolitan College seeks to fill a full-time non-tenure track faculty position in the Department of Computer Science (<http://csmet.bu.edu/>) starting by September 1, 2011. The successful candidate will have a Ph.D. in CS or a related field, and expertise in one or more of the following areas: information security, systems and networks, programming languages, web applications or health informatics. Teaching experience at the graduate level is preferred. Duties include teaching six courses (including blended and online) per academic year, participating in curriculum development, mentoring part-time faculty and students, service in the Department, College and University as well as conducting an active research program. We are particularly seeking applicants with strong background in information security and a broad background in computer science and information technology.

Boston University is a Center of Academic Excellence in Information Assurance Education and Research with MET Compute Science Department being a leader in information security education. The BU Center for Reliable Information Systems and Cyber Security (RISCS) (<http://www.bu.edu/riscs/>) provides many research opportunities in an interdisciplinary environment.

Please send your applications to: Faculty Search Committee, Computer Science Department, Metropolitan College, Boston University, 808 Commonwealth Avenue, Boston, MA. 02215 or email (preferred) to Ms. Camille Karoos at csinfo@bu.edu Application review began December 1, 2010 and continues until the position is filled.

Boston University is an affirmative action/equal opportunity employer, committed to increasing the diversity of our faculty. Women and members of underrepresented groups are encouraged to apply.

Carnegie Mellon University

Computer Science

Two Postdoctoral Positions on Ensemble Programming

We are seeking applications for two postdoctoral positions in a project aimed at developing a usable and verifiable programming language for large distributed ensembles of agents. One position is based in Pittsburgh and the other in CMU's Qatar campus, with travel between the two.

Applicants should have a strong background and interest in some combination of multiset/term rewriting, concurrency, massively distributed systems, programming language design and implementation, linear logic, logic programming or swarm robotics.

Additional information and application instructions at:

<http://www.qatar.cmu.edu/iliano/projects/ripple/>

Duke University

Department of Computer Science

Visiting Professor/Educator in Computer Science

A visiting position is available in the Computer Science Department at Duke University for the academic year 2011-2012. The position will be at the candidate's appropriate rank and could be Visiting Lecturer, Visiting Assistant Professor, Visiting Associate Professor, or Visiting Professor, depending on qualifications.

A successful candidate will have a PhD in computer science and excellent teaching skills, and will teach two courses per semester and engage in the vibrant teaching and learning community at Duke. Courses to be taught can include introductory computer science, discrete mathematics, and other courses depending on the candidate's interest. The successful candidate will collaborate with top-tier faculty in teaching some of the best undergraduates in the country. Support for teaching assistants is typically provided for classes with sufficient enrollment.

This position is eligible for the full benefit package, including health insurance, provided by Duke University.

For more information about the department please visit our website at www.cs.duke.edu. Applications, including a CV, at least three letters of recommendation that address the candidate's teaching, and a teaching statement that summarizes all of your relevant teaching experiences, should be submitted online at www.cs.duke.edu/facearch. To guarantee full consideration, applications and letters of reference should be received by March 15, 2011.

EPFL (Ecole Polytechnique Federale de Lausanne), Switzerland

School of Computer and Communication Sciences

Post-doctoral Researcher: Privacy in Pervasive Communications

EPFL/LCA1 (Prof. Jean-Pierre Hubaux) is recruiting one post-doctoral researcher in the area of privacy in pervasive communications.

Required skills and expertise:

- Very good knowledge of written and spoken English (French is not required)
- Strong background in networking and in security
- Some background knowledge in game theory, microeconomics, databases or machine learning would be an asset
- Good analytical skills
- Good knowledge of C, C++, and MatLab

Education: PhD degree in Computer Science, Electrical Engineering, Communication Systems, or Computer Engineering; with a convincing publication record.

Mission: Contribute to the research efforts of the group, involving many interactions with PhD students, other senior researchers, and external partners (industry or academia); some participation in teaching is also expected.

The research activities will mainly revolve around the design and the validation of protocols and algorithms to protect privacy in upcoming wireless networks, with an emphasis on cooperation aspects.

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

The duration of employment is flexible, with an upper bound of 4 years.

Starting date: to be agreed upon, possibly in summer or fall 2011.

If you are interested in this position and believe that you qualify, please send (preferably before March 15, 2011) a research statement (explaining notably how you would contribute to our activities), a resume, and the names, email addresses, and phone numbers of at least 3 references to:

jean-pierre.hubaux@epfl.ch

Please mention "Application to Post-doctoral Position LCA1-2011-1" in the title of your email.

More information about our research activities can be found at:

<http://people.epfl.ch/jean-pierre.hubaux>

FX Palo Alto Laboratory, Inc.

Research Scientists

FX Palo Alto Laboratory (FXPAL) conducts multimedia, document services technology, and communication and collaboration research for Fuji Xerox Co., Ltd., a joint venture between Xerox Corporation of America and FujiFilm of Japan. FXPAL's mission is to research and invent new technologies, cooperate with FX business units to develop and transition technologies into products, and interact with the US software industry to discover new products for the Fuji Xerox market.

We current have immediate openings for regular full time employees and visiting scientists with research interests in the following areas: cloud computing, computer vision, multimedia applications, location-aware and event-processing applications, interactive documents, mixed reality environments, and database systems.

Candidates should be interested in working on practical applications in a collaborative setting. Regular full time positions require a Ph.D. in Computer Science or related field and strong development skills. Visiting Scientist positions require a Ph.D. with extensive record of research contributions and experience.

To apply, please email your resume to: fxpalresumes@fxpal.com.

We are an equal opportunity employer and value diversity in the workplace.

Harvey Mudd College

Computer Science Department

Visiting Faculty Member in Computer Science

The Computer Science Department at Harvey Mudd College intends to appoint a full-time visiting faculty member beginning in Fall 2011 (position effective July 1, 2011). This is a two-year position, although candidates who prefer a one-year appointment will also be considered. Candidates at all ranks (from new Ph.D.'s to senior faculty, including sabbatical visitors) and in all areas of computer science will be considered.

Successful applicants should be able to provide evidence of excellence in teaching and a research program that can involve undergraduates.

Harvey Mudd College is a highly-selective undergraduate college (700 students) emphasizing science, mathematics, and engineering. It is a member of the Claremont Consortium that includes four other colleges and two graduate schools. The Department of Computer Science has nine permanent faculty members and approximately 30 majors in each graduating class. Most classes are relatively small and the teaching load is typically five semester courses per year. Visit <http://www.cs.hmc.edu> for more information about the department.

Applicants should respond with a cover letter, curriculum vitae, a statement regarding teaching philosophy and experience, and a similar statement of research interests. Supplementary evidence of teaching effectiveness (e.g. teaching evaluations) are also welcome if available. Concurrently, three references should write directly to the committee. Some of these letters should address the candidate's teaching effectiveness. Reviews of applications will commence on February 21 but applications will be considered until the position is filled.

Materials may be sent by hardcopy or by e-mail. Please send hardcopies to:

Search Committee
Computer Science Department
Harvey Mudd College
301 E. Twelfth Street
Claremont, CA 91711

Materials may be sent by e-mail to Ms. Joyce Greene, CS Department Administrative Aide at jgreene@cs.hmc.edu.

Any questions about the position can be sent to Professor Ran "RON" Libeskind-Hadas at ran@cs.hmc.edu.

Harvey Mudd College is an Equal Opportunity Employer and is committed to the recruitment of candidates traditionally underrepresented on college faculties.

The Henry M. Jackson Foundation (HJF)

Research Scientists (Bioinformatics/Systems Biology) 206112 & 206113

The Henry M. Jackson Foundation (HJF) is looking for junior and senior scientists to join the U.S. Army Medical Research and Materiel Command's Biotechnology High Performance Computing Software Applications Institute (BHSAL) (www.BHSAL.org). HJF provides scientific, technical, and programmatic support services to the BHSAL. This opening is for a dynamic scientist with interest in working in an interdisciplinary environment with focus on the development and application of computational solutions to biomedical problems, involving bio informatics (e.g., algorithms for next-generation sequencing, metagenomics, and RNA-Seq) and systems biology (e.g., signaling, protein, and metabolic networks). The candidate should have a Ph.D. in a related discipline and a strong publication record. Experience in high-performance computing, biostatistics

Professional Opportunities



Research Associate – Indiana University Bloomington

Conduct application-driven basic and applied Grid research at the Pervasive Technology Institute in Research Technologies Division. Lead teams that design and develop applied Grid infrastructure for diverse application areas including light microscopy, earthquake science, polar science, and astronomy. Publish academic research papers, supervise graduate students, write grant proposals, and produce open source software.

Ph.D. in Computer/Computational Science or Informatics. Must have experience in following: **1.** Developing and supporting comprehensive scientific computing infrastructure and software for supercomputers, Lustre parallel distributed file system, and High Performance Storage System (HPSS). **2.** Developing applied distributed scientific data and/or metadata management systems for data-intensive science applications and data grids in diverse areas. **3.** Developing grid applications for building secure data and metadata management infrastructure for scientific instruments using SOAP/WSDL Web services and Globus software packages. **4.** Developing and deploying fault tolerant, geographically distributed, real time data stream ingesting systems for Grid-accessible scientific instruments using Linux-HA and DRBD software packages. **5.** Designing, developing, deploying, administrating, and managing Grid Web Portals (Science Gateways) on production Linux systems for scientific user communities.

Any individual may submit an application to the following individual for consideration for this position:

CONTACT: Toni Usrey, Human Resources Coordinator, Office of the VP for Information Technology, University Information Technology Services, 2711 East Tenth Street, Bloomington, IN 47408

Indiana University is an Affirmative Action/Equal Employment institution.



Internetworked Systems Security Network Call for Post-doctoral Research Fellows

The Internetworked Systems Security Network (ISSNet) invites applications for post-doctoral research fellows. ISSNet (<https://www.issnet.ca>) is a Strategic Network (<http://bit.ly/eoCnxS>) funded by the Natural Science and Engineering Research Council (NSERC) of Canada (<http://bit.ly/5EYPUX>) and institutional partners (<https://www.issnet.ca/sponsors>).

ISSNet consists of 14 professors and their students at eight universities in Canada, plus research partners. ISSNet is focused on practical systems security issues involving real world data sets of traffic and malware, user studies and experimental and analytical methodologies. The research of the network is divided into three themes: network-oriented security, software system-oriented security, and human-oriented security. ISSNet does not focus on cryptography, wireless security, or privacy explicitly although these areas often play a role in the research.

ISSNet has several post-doctoral fellowship positions available. The fellowships are for one year with a possibility of renewal for a second year. Applications will be reviewed on an ongoing basis until positions are filled.

Please send a cover letter and curriculum vitae to the attention of: Director of Operations, NSERC ISSNet at shirley_mckey@issnet.ca. Your cover letter should specify the area(s) or project(s) you wish to focus on during the fellowship and the ISSNet institution or researcher(s) (<https://www.issnet.ca/researchers>) with whom you wish to work. It is recommended that you contact the researcher(s) you specify in the cover letter prior to the submission of your application to discuss a possible collaboration.

or population genomics, mathematical modeling and biological network analysis is a plus. Expertise in at least one of C, C++, Java, Python or Perl is a must. The candidate is expected to simultaneously work on multiple projects, involving a diverse and interdisciplinary team of scientists across multiple laboratories. Foreign nationals are welcome to apply. U.S. citizenship or permanent resident status is not required. This position is located in Frederick, Maryland.

Please apply on-line at www.hjf.org/careers Click "Advanced Search" and enter job number 206112 or 206113 in the Job Opening ID box.

The Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. (HJF) is a congressionally authorized,

not-for-profit corporation that provides unparalleled scientific and management services to military medical research and education programs worldwide. Our mission is to advance military medical research. AA/EEO

For a comprehensive list of our benefits, please visit: <http://www.hjf.org/careers/benefits.html>

Indiana State University
Mathematics and Computer Science
Chairperson, Associate or Full Professor
The Department of Mathematics and Computer Science at Indiana State University invites applications for Department Chairperson, a tenure-track position at the rank of Associate or Full Professor.

ISU is an AA/EEO employer.

For more information visit <https://jobs.indstate.edu>

Institute for Defense Analyses
Center for Communications Research, La Jolla, CA
Research Staff Member (Computer Scientist)

The Center for Communications Research (CCR) in La Jolla, California, is seeking a PhD-level computer scientist with a strong mathematical background to address problems in network security, cryptography, and high-performance computing.

CCR's researchers work on difficult scientific problems vital to the nation's security, often engaging multidisciplinary teams with backgrounds across a broad range of computing, mathematical, and statistical sciences. The collaborative atmosphere and fascinating problems provide for a vibrant research culture and a rich sense of intellectual inquiry.

Candidates should have experience communicating with researchers in different areas, as well as a strong programming background and expertise in at least one of the following areas: algorithms, network systems, architecture, software engineering, and high-performance computing.

IDA/CCR offers a competitive salary, an excellent benefits package, and a superior professional working environment. US citizenship and a high-level security clearance are required for employment; CCR will sponsor the clearance for those selected. The Institute for Defense Analyses is proud to be an Equal Opportunity Employer.

Please send inquiries or applications to: rsmjobs@ccrwest.org

Le Moyne College
Department of Mathematics and Computer Science
McDevitt Chair in Computer Science

Le Moyne College announces its search for the McDevitt Chair in Computer Science, endowed through a \$50 million gift. This new Endowed Chair will provide leadership and direction in helping the College create the McDevitt Center for research into the grand challenges facing the sciences and humanities, and is the first of four Endowed Chairs the College will be hiring.

Le Moyne College, located in Syracuse, NY, is a private college of liberal arts and sciences known for its teaching in undergraduate and masters' programs. Established by the Jesuits, the College provides students with a comprehensive academic program designed to foster intellectual excellence and preparation for a life of leadership and service. Syracuse, NY is a center of excellence for research in green technology, and is home to four universities and four major healthcare institutions that provide a diverse research community.

We seek candidates who are superior scholars and excellent teachers committed to undergraduate education. Experience applying computational thinking across a range of domains is important. Areas of specialization may include intelligent systems, graphics and visual computing, information management, software engineering, programming languages, and algorithms/complexity.

Application Instructions
Submit a cover letter and curriculum vitae to lemoynehr@lemoyne.edu with a subject line of Computer Science. Visit our web site at:

<http://www.lemoyne.edu/employment>
Le Moyne College is an affirmative action employer. Terms and conditions of hire are negotiable.

Millsaps College
Computer Science Department
Fulltime Sabbatical Replacement

Computer Science Department seeks 1-year fulltime sabbatical replacement, beginning Fall 2011, to teach undergrad courses at all levels. Teaching load is 3 courses per semester. Salary is competitive.

For details, see:
http://www.millsaps.edu/about_millsaps/employment_opportunities.php

Naval Postgraduate School
Postdoctoral Positions - Arlington VA and Monterey, CA

Applications are invited for one of two postdoctoral positions in Digital Forensics in Arlington VA or Monterey CA.

Digital Forensics is a new interdisciplinary area that draws upon machine learning, systems engineering, natural language processing, high performance computing, and human-computer interaction (HCI). NPS is a recognized leader in the field with a growing research portfolio, one of the largest academic collections of forensic data on the planet, and close ties to forensic practitioners in law enforcement, the military, and overseas.

Competitive candidates will have demonstrated research expertise in Computer Forensics, Security Engineering, Storage, Data Mining, Information Retrieval, Machine Learning, or a related field.

Our new "NPS East" location in Arlington just a few blocks from the Ballston Metro Station. Our Monterey location is on the coast in Central California. Applicants may apply to work in either location.

Candidates should hold a PhD in Computer Science or a closely related field. Candidates must be US citizens and be able to obtain a SECRET security clearance; non-US residents will not be considered.

For additional information or to apply please send email to both Simson Garfinkel and Joel Young at slgarfin@nps.edu and jdyoung@nps.edu.

The Naval Postgraduate School is an Equal Opportunity Employer.

NEC Laboratories America, Inc.
Research Staff Member—Machine Learning and Computer Vision

NEC Laboratories America, Inc. (www.nec-labs.com) is a vibrant industrial research center, renowned for technical excellence and high impact innovations. Our research programs cover a wide range of technology areas and maintain a balance between fundamental and applied research, with the goal of providing a technological edge for NEC's global business. The lab provides an exciting environment for creative researchers, offers attractive benefits, and strives relentlessly to attract the sharpest minds in their respective fields. NEC Labs is headquartered in Princeton, NJ and has a second location in Cupertino, CA, the heart of Silicon Valley.

The Media Analytics Department in Cupertino, CA, is seeking an outstanding and enthusiastic researcher, with background in machine learning and computer vision, to work on developing visual recognition technologies for novel mobile applications, web services, and HCI solutions. We expect the candidates to be strong in conducting cutting edge research, and also passionate about turning research into high impact products and services. We encourage researchers to establish leadership in the research community, and maintain active research collaborations with top universities in the US. In recent years, the team has achieved top performances in various prestigious challenges and

Professional Opportunities

evaluations, including PASCAL 2009 and ImageNet 2010.

Required Skills or Experience:

- PhD in Computer Science (or equivalent)
- Strong publication in top machine learning or computer vision conferences & journals
- Solid knowledge in math, optimization, and statistical inference
- Hands-on experiences in implementing large-scale learning algorithms and systems
- Great problem solving skills, with a strong desire for quality and engineering excellence
- Expert knowledge developing and debugging in C/C++

Desired Skills a Plus:

- Good knowledge developing and debugging on Linux
- Good knowledge developing in Java
- Experience with scripting languages such as Python, PHP, Perl, and shell scripts
- Experience with parallel/distributed computing
- Experience with algorithm implementation on GPU
- Experience with mobile or embedded systems
- Experience with image classification, object recognition, and visual scene parsing
- Ability to work on other media data, like textual and audio data

For consideration please submit your resume and a one-page research statement at:

https://neclabs.hua.hrsmart.com/ats/js_job_details.php?reqid=1007

NEC Labs is committed to creating a diversified environment, and is proud to be an equal opportunity employer.

Oregon State University School of Electrical Engineering and Computer Science

*Assistant Professor/Associate Professor/
Professor*

The School of Electrical Engineering and Computer Science at Oregon State University invites applications for two tenure-track professorial positions in Computer Science. Exceptionally strong candidates in all areas of Computer Science are encouraged to apply. We are building research and teaching strengths in the areas of open source software, internet and social computing, and cyber security, so our primary need is for candidates specializing in software engineering, database systems, web/distributed systems, programming languages, and HCI. Applicants should demonstrate a strong commitment to collaboration with other research groups in the School of EECS, with other departments at Oregon State University, and with other universities.

The School of EECS supports a culture of energetic collaboration and faculty are committed to quality in both education and research. With 40 tenure/tenure-track faculty, we enroll 160 PhD, 120 MS and 1200 undergraduate students. OSU is the only Oregon institution recognized for its "very high research activity" (RU/VH) by the Carnegie Foundation for the Advancement of Teaching. The School of EECS is housed in the Kelley Engineering Center, a green building designed to support collaboration among faculty and students across campus. Oregon State University is located in Corvallis, a college town renowned for its high quality of life.

For more information, including full position announcement and instructions for application, visit: <http://eeecs.oregonstate.edu/faculty/openings.php>.

OSU is an AAEOE.

The Pennsylvania State University College of Information Sciences and Technology (IST)

Frymoyer Endowed Chair Professor

The Pennsylvania State University College of Information Sciences and Technology (IST) is seeking candidates for the position of Frymoyer Chair. The Frymoyer Chair is a tenured, full professor in the College of Information Sciences and Technology. The anticipated start date is Fall 2011 or Spring 2012. The endowed chair was established in 1999 through a gift of \$1.5 million from the Edward J. Frymoyer Foundation. The holder of the Frymoyer Chair is expected to have a significant impact not only in the College, but also across multiple disciplines at the University and in the public and private sectors. Funds from the endowment will support the chair holder's contributions to instruction, research, and public service with the overall intent to foster the use, benefits, and effectiveness of the information sciences around the globe.

The Pennsylvania State University is the land-grant University of the Commonwealth of Pennsylvania. It is comprised of the University Park campus, where the College is located, and 23 other campuses throughout the state. The College was founded in 1998 to develop information science and technology leaders for the digital, global society, and enrolled its first class of students in the 1999-2000 academic year. The College at University Park, which includes 50 full-time faculty, currently serves approximately 1100 undergraduate students, 110 resident graduate students, primarily in the Ph.D. program, and 100 non-resident graduate students in a professional master's degree program. In addition, the IST undergraduate curriculum is offered at 19 other Penn State campuses. In January 2004, the College moved into a new 190,000 square foot building on the University Park campus. The building houses both the College of IST and the Department of Computer Science and Engineering.

To learn more about our structure, vision, mission, goals, faculty and students, please see <http://ist.psu.edu>. We seek a candidate who will provide research leadership as our College moves forward in its second decade of existence. We have faculty strengths in: (1) computational informatics and artificial intelligence; (2) human computer interaction and cognitive studies; (3) information systems development/enterprise architecture; (4) security and informatics; and (5) social policy, economics and informatics. As an interdisciplinary faculty we collaborate on problems of national significance. We are particularly interested in candidates with demonstrated research leadership in cutting edge problem areas such as infrastructure and internet security and privacy, innovation in web search, health informatics, network science, social media, and educational technology. The successful candidate will have a well defined and sustained record of funded research and accomplishments. However, we will not limit our search to specific research areas or problems.

Applications from those who seek to be a part of a vibrant, civil and diverse academic community and who do research and teaching in any of the information and technology sciences are welcome. Qualified candidates are invited to send a cover letter with their research vision, their curriculum vita, as well as names and email addresses of four persons who will write letters of recommendation to chairsearch@ist.psu.edu. Review of applications will begin February 18, 2011 and continue until the position is filled.

This announcement is available at <http://ist.psu.edu/chairsearch>.

Penn State is committed to affirmative action, equal opportunity and the diversity of its workforce.

Polytechnic Institute of New York University Computer Science and Engineering Faculty Position in Cyber Security

The Computer Science and Engineering Department of the Polytechnic Institute of NYU (NYU-Poly) invites applications for a tenure/tenure-track position in cyber security. We seek faculty at all levels with an exceptional record in research, teaching, and professional accomplishments. The rank of initial appointment will be commensurate with experience and accomplishments.

Polytechnic has significant existing strength in cyber security. It is an NSA Center of Excellence in Information Assurance Education as well as a Center of Excellence in Information Assurance Research, and has received three rounds of funding in the Scholarship for Service (SFS) Program. It has a large number of PhD and MS students active in research in cyber security. Over a dozen security courses are offered regularly and an MS in cyber security with an optional on-line component is also available. Current research focuses on digital forensics, multimedia security, biometrics, application and network security, and trusted hardware and software systems. The ideal candidate for this position would help us expand in some of these areas as well as into new areas.

The successful candidate will have excellent opportunities to initiate interdisciplinary research and educational collaborations with the diverse institutes and departments within NYU. The Computer Science and Engineering Department (CSE) of NYU-Poly has a strong faculty with a vibrant research program and strong course offerings, with existing strengths including security, networks and distributed systems, algorithms, and web search technology.

NYU-Poly (formerly Polytechnic University), an affiliate of New York University, is a comprehensive school of engineering, applied sciences, technology and research, and is rooted in a 156-year tradition of invention, innovation and entrepreneurship: i2e. The institution, founded in 1854, is the nation's second-oldest private engineering school. It is located in Brooklyn, one of the world's most diverse cities, and is a short walk to Brooklyn's historic brownstone neighborhoods and some of the city's foremost museums and cultural activities. Part of a six billion dollar academic and commercial complex at the heart of rapidly developing downtown Brooklyn, NYU-Poly is ideally situated close to Wall Street, City Hall, NYU's Washington Square campus and a host of Manhattan attractions. For more information, visit www.poly.edu.

Review of applications will begin in January 2011 and will continue until the position is filled. Applicants should send their curriculum vitae, statement of research and teaching interests, and the names and addresses of three references, as a PDF attachment, to cssearch@poly.edu.

NYU-Poly is an affirmative action/equal opportunity institution.

Portland State University Computer Science Department Faculty Position

The Computer Science Department at Portland State University (PSU) invites applications for a junior tenure-track faculty position to begin Fall 2011. Specific areas of computer science under

consideration include: data-intensive systems; trustworthy computing; and computer architecture. Applications to cloud computing and sustainability are of particular interest. Exceptional applicants in other areas or at other ranks will also be considered.

The department currently has twenty-four tenure-track faculty, including four NSF CAREER Award winners and two ACM Fellows. The department offers an ABET-accredited B.S., both a thesis and a non-thesis M.S., and a Ph.D. in Computer Science. Our teaching loads give faculty time to maintain funded research programs and to be active in professional organizations. The department currently serves approximately 400 undergraduates and 120 graduate students. Further information about the department is available at <http://cs.pdx.edu>.

PSU is the largest university in Oregon and is known nationally for its community engagement and sustainability initiatives. Its campus in downtown Portland is well served by public transit (both bus and rail), and near a variety of restaurants, cultural venues and outdoor activities. PSU's urban setting provides a living laboratory for research and easy access to collaborations in industry, academia and government. (Current faculty collaborations include Intel, Oregon Health & Science University, and Oregon Department of Transportation.) The Portland metro area has long been a leader in open-source development, and the City recently announced the PDX11 initiative aimed at making Portland "the most awesome place in the world" to start and run a software business.

Applicants are expected to hold or be near completion of a Ph.D. degree in Computer Science or a closely related field. All applicants are expected to show great potential for future external research support and a demonstrated record of research excellence.

The faculty member will maintain scholarly activity in funded research and publications; teach undergraduate and graduate classes; provide professionally related public service; advise students, and support University activities through committee service.

For more information and application procedure, please visit <http://cs.pdx.edu>. For inquiries about this position, please contact cssearch@cs.pdx.edu. Review of applications will begin immediately and will continue until finalists are identified.

Portland State University is an Affirmative Action, Equal Opportunity Institution and welcomes applications from diverse candidates and candidates who support diversity.

Reykjavik University School of Computer Science Faculty Position in Computer Systems

The School of Computer Science at Reykjavik University seeks to hire a faculty member in the field of computer systems, broadly construed. We are interested in an ambitious, highly-qualified academic who, apart from developing her/his research programme, is interested in working with existing faculty, and in bridging between research, in one or more of the research areas within the School, in particular artificial intelligence, software engineering and theoretical computer science.

The level of the position can range from assistant professor to full professor, depending on the qualifications of the applicant. Salary level is negotiable and relocation assistance is offered. The position is available starting in the summer/fall 2011, but later starting dates can be negotiated. The application deadline is 31 March 2011.

Professional Opportunities

For further details on the position and the School of Computer Science at Reykjavik University, see:

<http://en.ru.is/the-university/open-positions/nr/25994>

R-I-T Rochester Institute of Technology, College of Science Faculty Position

Starting Date: Late August, 2011

Endowed Professorship in RIT's Chester F. Carlson Center for Imaging Science

There is a faculty opening as a senior tenure-track/tenured endowed professorship in the Chester F. Carlson Center for Imaging Science (CIS) in the area of biomedical imaging. Over the next 5 years, RIT is committed to major growth and investment in research and education in the interdisciplinary arena of applied biological science, encompassing biomedical engineering, biological and medical imaging, biophysics, biomedical computation, and biotechnology. Applicants in any related application area or modality are of interest. The person recruited for this position will take a prominent role in the growth of the CIS program in biomedical imaging, working collaboratively with the other faculty and labs, as well as in the generation of externally funded research projects, supervision of graduate research, laboratory expansion, and the development and teaching of related courses.

Qualifications: The following are required for the position: Doctoral degree, a substantial peer-reviewed publication record, and a history of successful research leadership in biomedical imaging or related fields at the level of PI demonstrated through externally funded projects; experience in the development of theory or methods for biomedical imaging, including acquisition, processing, and application; ability to teach and interest in teaching at the undergraduate and graduate level, including supervision of students and development of curricula. The ability to communicate well in speech and writing and synergy with existing research areas to promote collaboration are highly desirable. An ability and interest in contributing to a community committed to diversity is desired.

Application Procedure: Apply online at <http://apptkr.com/172536>. Keyword Search: IRC43820. You can contact the search committee with questions on the position at: biofacultysearch@cis.rit.edu. Candidates should visit www.cis.rit.edu for more information and to view the detailed job postings. Applications will be reviewed on a rolling basis and the position will remain open until filled.

The Rochester Institute of Technology is an equal opportunity/affirmative action employer. Members of protected classes and individuals with the ability to contribute in meaningful ways to the university's continuing commitment to cultural diversity, pluralism, and individual differences are encouraged to apply.

RSA Laboratories Full-time Research Scientists

RSA Laboratories invites applications for full staff positions with a focus on machine learning / data mining for security applications. Both well established scientists with strong research records and graduating PhDs of exceptional caliber are encouraged to apply.

Staff scientists will have an opportunity to blend academic research with leadership in architecting next-generation security systems together with RSA Engineering. Applicants should possess enthusiasm for both cutting-edge research and real-world deployment; also valuable are either implementation skills

or a desire to work with development staff to create prototypes.

A PhD in Computer Science or a closely related field is required, as is residence in or relocation to the Boston, MA area.

To apply, please send a resume to labs_hiring@rsa.com. The review of applications will begin on January 15th, 2011 and will continue until the positions are filled.

RSA is the security division of EMC, the world leader in information infrastructure solutions. RSA Laboratories' charter is to produce research with practical impact on the products and strategy of RSA and its parent company EMC and scholarly influence in the larger research community.

Samsung Electronic's US R&D Center

Developers and Researchers

Samsung Electronic's US R&D Center, San Jose is looking for enthusiastic developers and researchers to join the Mobile Web Platform team. Candidates should have a MS or PhD with a track-record in one or more of the following technologies: browser internals, mobile phone security, browser/web security. A good knowledge of Linux is required. This is a great opportunity to be part of a team developing state-of-the-art technologies for the future business needs of Samsung Electronics.

Email: b.gilmore@sisa.samsung.com

Samsung Electronics WebKit Developers

Samsung Electronics is searching for experienced WebKit Developers (Committer or Reviewer) to join a distributed R&D team.

Skills: Familiar with WebKit source code, modern browser internals, HTML5. Experience with OpenGL considered a plus. Experience with browser security considered a plus. Experience with multi-process browsers considered a plus.

Location: San Jose, California

Contact: b.gilmore@sisa.samsung.com

Samsung Computer Systems Researcher

Samsung Electronic's US R&D Center, San Jose is looking for passionate researchers to join the newly formed Systems Research Group. Candidates should have a PhD with a track-record in one or more of the following technologies: compilers, parallel programming languages and run-times, micro-kernels, OS, RTOS, and other manycore/multicore related software technologies. Candidates should have a strong publication record. This is a great opportunity to be part of a team developing state-of-the-art technologies for the future business needs of Samsung Electronics.

E-mail: b.gilmore@sisa.samsung.com

Stony Brook University The Center of Excellence in Wireless and Information (CEWIT) - Korea Researcher

The Center of Excellence in Wireless and Information Technology (CEWIT) at Stony Brook University, Stony Brook, New York, U.S.A., is a research and development center focused on cutting edge research in Wireless and Information Technology. CEWIT's broad goal is to conduct first-class interdisciplinary research in the emerging, critical technologies of the information age and foster new enterprise development in these areas. Now in its 7th year, the Center has over 70 associated faculty members, and close to 300 graduate students engaged in various forms of government and industry sponsored research. The Center is housed in a 100,000 square ft state-of-the-art facility in the R&D Park of the Stony Brook University.

As a part of its globalization strategy, CEWIT has established a branch center in the Songdo Global University Campus, Songdo, South Korea. The Korean branch will work in active collaboration with the Center in New York, and will focus on technologies of strategic importance to Korea and foster global collaboration.

To learn more about CEWIT and its Korea branch, please visit www.cewit.org and www.cewit.or.kr. CEWIT, Korea is located in the Songdo Global University Campus, Songdo, South Korea, about 1

USC Viterbi School of Engineering

The USC Viterbi School of Engineering seeks a Program Director to manage and lead the Information Technology Program (ITP). ITP is an academic program at the Viterbi School of Engineering whose mission is to offer courses in applied technology to all students at USC. The program offers cutting edge and hands on courses in web development, new media, 3D animation, security, programming, video game design and programming, and other innovative topics in information technology. The unit is a leading source of curriculum innovation on campus and is also a leader in integrating emerging instructional technologies in the classroom. The Program Director will hold a faculty position. It is expected, but not required, that this will be a non-tenure track appointment.

The Program Director's responsibilities will include, but are not limited to, ITP's program planning, administration, marketing, and recruitment. He or she should be able to collaborate with faculty and IT staff to develop and implement innovative instructional labs and systems. It is expected that the candidate will also teach several courses per academic year. For more information, please visit: <http://itp.usc.edu/>

Application Process Instructions:

Qualified candidates must possess:

- Minimum education is a MS in information technology or related discipline. A PhD degree is preferred.
- Demonstrable supervisory, organizational and training skills.
- Excellent verbal and written communication and presentation skills.
- Awareness of emerging trends and opportunities in the technology industry.
- Skilled in program development and execution.
- 2-5 years of teaching experience.
- 2-5 years of management/supervisory experience.

Interested candidates should submit a detailed curriculum vitae, letter of interest and contacts for at least four professional references to Rona Smith in the USC Viterbi School of Engineering Office of the Dean at ronasmit@usc.edu

The University of Southern California (USC), founded in 1880, is located in the heart of downtown L.A. and is the largest private employer in the City of Los Angeles. As an employee of USC, you will be a part of a world-class research university and a member of the "Trojan Family," which is comprised of the faculty, students and staff that make the university what it is.

USC values diversity and is committed to equal opportunity in employment. Women and men, and members of all racial and ethnic groups, are encouraged to apply.

Professional Opportunities

hour from Seoul and about 20 mins from the Incheon International Airport.

CEWIT, Korea, is looking to hire its initial pool of researchers. The ideal candidate will have a PhD degree in computer/information science or computer/electrical/communication engineering or associated disciplines, and will have experience in inter-disciplinary research. Post doctoral experience in industry R&D labs or in academia will be helpful. All areas of information/computer science and networking/communication engineering are of interest. Of specific interest are areas that can contribute to smart environments, smart grids, multimedia, virtual reality, wireless communications, sensors and sensor networking, and medical informatics and devices.

Apply electronically at <https://hiring.cs.stonybrook.edu>. Please send any questions to recruit@cewit.stonybrook.edu. Review of applications will start immediately. Non-Korean citizens are preferred.

University of California, Merced School of Engineering Senior Faculty Position in Electrical Engineering and Computer Science

The School of Engineering of the University of California, Merced invites applications from distinguished scholars and teachers at the Full/Associate

Professor (tenured) level in Electrical Engineering and Computer Science. We are seeking exceptionally qualified candidates in all areas of Electrical Engineering and Computer Science. Fields of interest in Electrical Engineering include communication, control, sensors, signal processing, systems.

Fields of interest in Computer Science include artificial intelligence, computer architecture, computer vision, data mining, databases, distributed systems, graphics, machine learning, networks, operating systems, programming languages and compilers, sensor networks, software engineering and theory. Other areas in EE and CS are given consideration as well.

Full position details at <http://eecs.ucmerced.edu>.

AA/EO

University of Miami, Coral Gables, Florida College of Engineering, Department of Electrical and Computer Engineering Faculty Openings at All Professorial Levels

The College of Engineering at the University of Miami (UM) invites applications and nominations for several tenure-track positions at all professorial levels and all departments. The College is seeking candidates with a strong record of scholarship with a focus on obtaining external funding, a demonstrated excellence in undergraduate and graduate teaching, interest in developing and implementing curricula that address multicultural issues, and a thoughtful commitment to university and professional service. For senior-level appointments, a proven record of extramural funding support is required. The College includes five academic departments, 850 undergraduates, 250 graduate students, and 80 dedicated faculty, who have garnered national and international awards including election to the National Academy of Engineering. Our current recruitment effort is focused on the areas of software engineering, embedded and real-time systems, cyber-security, and computer engineering. Knowledge of applications in health care informatics, game systems, and/or robotics and autonomous systems is a plus.

At UM, collaboration is a hallmark of the faculty's activities, including joint research with colleagues in the Miller

School of Medicine, the Rosenstiel School of Marine and Atmospheric Science, the School of Architecture, the College of Arts and Sciences, the School of Business Administration, the Frost School of Music, the School of Communication, the School of Education, the School of Law and the School of Nursing and Health Sciences.

A Ph.D. in engineering, science or a related discipline and one year work related experience is required prior to the appointment. Qualified applicants should mail (a) a letter of interest, (b) a resume and (c) at least three (3) letters of reference to:

Dr. Shihab Asfour, Associate Dean for Academics
College of Engineering
University of Miami
1251 Memorial Drive, McArthur Engineering Bldg., Room 247
Coral Gables, FL 33146.
sasfour@miami.edu

The University of Miami offers competitive salaries and a comprehensive benefits package including medical and dental benefits, tuition remission, paid holidays and much more. The University of Miami is an Equal Opportunity/Affirmative Action Employer.

University of Nevada, Reno Computer Science and Engineering Faculty Lecturer Position

Applications are invited for a full-time lecturer position in the Department of Computer Science and Engineering in the College of Engineering at the University of Nevada, Reno, Nevada. This is a nine-month, non-tenure track faculty position responsible for teaching four Computer Science and Engineering courses per semester which may be reduced to three courses per semester when other academic responsibilities are assigned. Successful candidates should have an MS in Computer Science or Computer Engineering or related fields, two years of college/university level teaching with the ability to teach a breadth of introductory and core CSE courses. A strong interest in teaching with industry experience would be desirable. Academic advising and student mentoring experience would be a plus.

For more information on this position and to begin the application process, please visit <https://www.unrsearch.com/postings/8705>.

Applications will be accepted until March 15, 2011 or until the position is filled.

EEO/AA

The University of Texas at Dallas Erik Jonsson School of Engineering and Computer Science, Department of Computer Science Tenure Track Faculty Positions in Computer Science

The Department of Computer Science of the University of Texas at Dallas invites applications from outstanding applicants for tenure track positions in computer science. Preference will be given to candidates in the areas of Software Engineering, Systems Security, Intelligent Systems, Robotics and Quantum Computing, however, exceptional candidates in all areas will be considered. 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 research and publication record, and demonstrated leadership ability in developing and expanding (funded) research programs. An endowed chair may be available for highly qualified senior candidates. 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 40 tenure-track faculty and 11 senior lecturers. The department is housed in a spacious 150,000 square feet facility and has excellent computing equipment and support. The department houses a number of centers, particularly, in areas of embedded software, cybersecurity and human language technology.

The University is located in the most attractive suburbs of the Dallas metropolitan area. There are over 800 high-tech companies within few miles of the campus, including Texas Instruments, Alcatel, Ericsson, Hewlett-Packard, Nokia, Fujitsu, Raytheon, Rockwell Collins, Cisco, etc. Almost all the country's leading telecommunication's companies have major research and development facilities in our neighborhood. Opportunities for joint university-industry research projects are excellent. The Department incurred \$8.1 Million in research expenditure last year, and in Fall 2010 alone has received close to \$10 Million in extramural funding. The University and the State of Texas are also making considerable investment in commercialization of technology developed in University labs.

The Erik Jonsson School of Engineering and Computer Science, where the CS Department is housed, has experienced very rapid growth in recent years. The University and the State of Texas are investing significant resources to move towards a Tier 1 status.

Review of applicants will begin immediately and will continue until the positions are filled. Indication of gender and ethnicity for affirmative action statistical purposes is requested as part of the application.

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, age, citizenship status, Vietnam era or special disabled veteran's status, or sexual orientation.

Application Instructions

The University of Texas at Dallas uses an online application system that provides applicants a quick, safe, and easy. To apply for this position, applicants should submit their curriculum vitae with a list of at least five academic or professional references via the Online Application Form:

http://provost.utdallas.edu/facultyjobs/welcome/jobdetail/pcd101209#apply_now

Questions / Contact:

For additional information, contact Gopal Gupta, Department Head, at 972-883-4107 or send email to cs-search@utdallas.edu, or view the Internet Web page at <http://cs.utdallas.edu>.

Wayne State University Faculty Positions in Computational Biology/Bioinformatics

As part of a considerable expansion in the area of computational biology and bioinformatics, Wayne State University is recruiting at least 5 new faculty at all levels. Two of these positions are in the Department of Computer Science. Rank will be dependent upon qualifications. These positions are available as part of an initiative to create a Center for Bioinformatics/Computational Systems Biology linking the Department of Computer Science and the School of Medicine (Center for Molecular Medicine and Genetics, Mott Center for Human Growth and Development, Department of Clinical and Translational Science).

Successful applicants are expected to establish and maintain vigorous, externally funded research programs that integrate

with existing computational, genomic, and personalized medicine efforts, as well as participate in education at both undergraduate and graduate levels.

Computer Science is a research-intensive department that currently has 24 full-time faculty and 80 PhD students. The department fosters a great research environment that enabled 5 faculty to secure prestigious CAREER awards. The department has a well-established research group in bioinformatics, group supported by several NSF and NIH grants at the level of over \$1 million/year. In addition to the traditional CS degrees (B.Sc., M.Sc. and Ph.D.) the department also offers a Ph.D. with a concentration in Computational Biology and Bioinformatics.

Wayne State University is a large, comprehensive, tier I research institution with over 30,000 students and the largest one-campus medical school in the country. This is a unique opportunity, part of a Detroit renaissance that includes a multi-institutional local initiative and a novel state-wide translational sciences partnership with Henry Ford Health Care System, Michigan State University and the Van Andel Research Institute. As an intrinsic component of this initiative, Wayne State University is expected to experience a substantial research-intensive growth through the next decade.

Applications (which must be submitted online at <http://jobs.wayne.edu>, referring to posting #037527) should include a curriculum vitae and a statement of research interests. The search will remain open until all positions have been filled. Wayne State University is an equal opportunity/affirmative action employer.

West Virginia University Lane Department of Computer Science and Electrical Engineering Postdoctoral Associate Position in Theory (Computational Logic)

The Lane Department of Computer Science and Electrical Engineering invites applications for one postdoctoral position in the field of Algorithm Design and Combinatorial Optimization, with an emphasis on computational logic. Duties include design and development of certifying algorithms for problems in combinatorial optimization and logic.

Required qualifications include an earned Ph.D. in theoretical computer science (with an emphasis on logic) or applied mathematics or a closely related discipline. The position is for one year (August 15 2011 through May 15, 2011), although it could be extended to an additional year depending upon performance. Deadline for applications is March 15, 2011.

West Virginia University (www.wvu.edu) is a comprehensive land-grant research institution enrolling over 28,000 students in 113 degree programs, including engineering and health sciences.

Interested candidates must send a letter of application, a CV and contact information for at least three references to k.subramani@mail.wvu.edu. Review of completed applications will commence immediately and the positions will remain open until filled. A preliminary round of decisions will be made on March 15, 2011.

West Virginia University is an affirmative action, equal opportunity employer dedicated to building a culturally diverse and plurastic faculty and staff committed to teaching and working in a multicultural environment. Applications are strongly encouraged from women, minorities, individuals with disabilities and covered veterans.