COMPUTING RESEARCH **N E W S**

Computing Research Association
Uniting Industry, Academia and Government to
Advance Computing Research and Change the World.

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CRN At-A-Glance

2018 Board Election Results and New Appointed Board Members

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There have also been changes to the appointed members to the board, who are not elected. *See page 2 for full article.*

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Paul Messina Receives 2018 CRA Distinguished Service Award

Paul Messina was selected as the 2018 recipient of the CRA Distinguished Service Award for his significant contributions to the advancement of high performance computing and decades of service to the field. Messina has an incredible record of building and managing large-scale, diverse research activities. Over the course of his career, he has designed, directed, and otherwise executed numerous initiatives that have influenced U.S. policy and programs resulting in the U.S. leadership position in high-performance computing. *See page 7 for full article.*

In This Issue

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There have also been changes to the appointed members to the board, who are not elected. Charles Isbell has been appointed the new AAAI representative, replacing Lise Getoor, and Kate Larson has been appointed the Info-CAN/CS-CAN representative, replacing Mario Nacimento. Beginning July 1, Mark Hill will replace Elizabeth Mynatt as the CCC Chair and representative on the board.

CRA would like to thank all retiring board members for contributions during their service on the board.

James Allan

James Allan, Ph.D., has co-directed the Center for Intelligent Information Retrieval since 2003. He is a professor in and chair of the faculty of the College of Information and Computer Sciences at the University of Massachusetts Amherst.

Allan's research focuses on interactive information retrieval and organization, including browsing and other human-computer interactions; automatic information organization; indexing, retrieving, and organizing large collections of found material; evaluation of information retrieval systems; and understanding the controversial nature of search results. He is currently working on ways to organize and search large collections of scanned books, explorations of how novelty can be incorporated into retrieval algorithms, techniques for representing and retrieving video segments, and approaches to allow scholars to find and search using categories not previously catalogued.

Allan has served on the editorial board of two major journals in the field, Elsevier's Information Processing and Management and ACM Transactions in Information Systems, and was elected chair of the ACM SIGIR organization (2010-2013). He is the author of more than 130 refereed conference and journal publications in the field of IR and has chaired the Ph.D. committees of 21 graduated students in the area. He is currently the moderator for cs.IR within the arXiv repository.

Allan received his Ph.D. from Cornell University in 1995, an M.S. degree in 1993 from Cornell, and his A.B. from Grinnell College in 1983.

Maria Ebling

Maria Ebling is the director of academic and external partnerships at the IBM T. J. Watson Research Center. She received a B.S. from Harvey Mudd College and an M.S. and a Ph.D. in computer science from Carnegie Mellon University. Her interests are in distributed systems supporting cognitive computing, mobile and pervasive computing, privacy, and human-computer interaction. She served as the Editor-in-Chief of IEEE Pervasive Computing from 2014-2017. She is a member of the IBM Academy of Technology, a distinguished member of the ACM and a senior member of the IEEE.

Mark Hill

Mark D. Hill is the Gene M. Amdahl Professor of Computer Sciences and Electrical & Computer Engineering at the University of Wisconsin–Madison, where he also co-leads the Wisconsin Multifacet project with David Wood. His research interests include parallel computer system design, memory system design, computer simulation, deterministic replay and transactional memory. He earned a Ph.D. from the University of California, Berkeley. He is an ACM Fellow and a Fellow of the IEEE.

Ayanna Howard

Ayanna Howard is the chair of the School of Interactive Computing and Linda J. and Mark C. Smith Professor at the Georgia Institute of Technology. Her research focuses on intelligent technologies that must adapt to and function within a human-centered world, which encompasses advancements in artificial intelligence (AI), assistive technologies, and robotics. She has authored over 200 peer-reviewed papers. To date, her unique accomplishments have been highlighted through a number of awards, including the AnitaB.org A. Richard Newton Educator ABIE Award, CRA A. Nico Habermann Award, and NSBE Janice Lumpkin Educator of the Year Award. In 2013, she also founded Zyrobotics, which has released its first suite of STEM educational products to engage children of all abilities. She also serves on the AAAS Committee on Opportunities in Science Board, DARPA Information Science and Technology (ISAT) Board, and CRA-W Board. Prior to Georgia Tech, Howard was a senior robotics researcher at NASA's Jet Propulsion Laboratory. She has also served as the associate director of research for the Institute for Robotics and Intelligent Machines, chair of the robotics Ph.D. program, and the associate chair for faculty development in the School of Electrical and Computer Engineering at Georgia Tech.

Charles Isbell

Charles Isbell received his B.S. in computer science from the Georgia Institute of Technology. He continued his education at the Artificial Intelligence Laboratory at the Massachusetts Institute of Technology. After earning his Ph.D. from MIT, Isbell joined AT&T Labs/Research. In the fall of 2002, he returned to Georgia Tech to join the faculty of the College of Computing.

Isbell's research interests are varied; however, the unifying theme of his work in recent years has been using statistical machine learning to enable autonomous agents to engage in life-long learning when in the presence of thousands of other intelligent agents, including humans. His work with agents who interact in social communities has been featured in the popular media—including the *New York Times* and the *Washington Post*—as well as in several technical collections. Since graduating from MIT, he has won two best paper awards for technical contributions in this area.

Since returning to Georgia Tech, Isbell has also pursued reform in computing education. He has been named the most outstanding instructor at the College, and has been granted the Dean's Award for singular contribution to the College. The latter was for his work on Threads, Georgia Tech's new structuring principle for computer science curricula. This work has received international attention and been presented in the academic and popular press. He was also a co-architect of the OMSCS, the first Master of

Science in Computer Science that students can earn exclusively through the Massively Open Online Course delivery format. This work has been featured in technical collections and in over 1000 unique media articles. He has recently co-founded the Constellations Center for Equity in Computing, which seeks to broaden participation in the computing fields.

Kate Larson

Kate Larson is a professor in the David R. Cheriton School of Computer Science at the University of Waterloo. Her research interests include artificial intelligence, with a particular focus on preference modelling and incentive issues in multiagent systems.

She is the vice-president of CS-Can/Info-Can. Her other past service includes being general co-chair for Autonomous Agents and Multiagent Systems (AAMAS), serving on the board of directors of the International Foundation for AAMAS, councilor for the Association for the Advancement of Artificial Intelligence (AAAI), and is an associate editor for the journals *Artificial Intelligence, Journal of Artificial Intelligence Research (JAIR)* and *Journal of Autonomous Agents and Multiagent Systems.*

She received Ph.D. from Carnegie Mellon University and her B.Sc from Memorial University of Newfoundland.

Ran Libeskind-Hadas

Ran Libeskind-Hadas is a professor of computer science and department chair at Harvey Mudd College. His research interests are in the area of algorithms, optical networking, and computational biology. He also works in the development of innovative undergraduate curricula in computer science.

Libeskind-Hadas received the A.B. in applied mathematics from Harvard University and the M.S. and Ph.D. in computer science from the University of Illinois at Urbana-Champaign.

Rachel Pottinger

Rachel Pottinger is an associate professor in computer science at the University of British Columbia. She received her Ph.D. in computer science from the University of Washington in 2004. Her main research interest is data management, particularly semantic data integration, how to manage metadata, how to manage data that is currently not well supported by databases, and how to make data easier to understand and explore. She is the winner of the 2007 Anita Borg Institute's Denice Denton Emerging Leader award.

Juan E. Gilbert and Manuel Pérez Quiñones Receive the 2018 A. Nico Habermann Award

This year, the CRA board of directors selected two recipients of the 2018 A. Nico Habermann Award: Juan E. Gilbert of the University of Florida and Manuel A. Pérez Quiñones of the University of North Carolina at Charlotte. Both individuals are being recognized for their contributions aimed at increasing the number and success of members of underrepresented groups in the computing research community. Gilbert has had an incredible impact on diversifying the field of computer science, especially on increasing the number of African-American Ph.D. recipients and faculty members in all of the institutions in which he has worked. Pérez Quiñones has tirelessly and passionately worked throughout his career for diversity and inclusion in computing at all levels, spanning from high school to Ph.D., especially for Latino/as.

Juan E. Gilbert

Juan E. Gilbert is the chair of the Computer and Information Science and Engineering Department at the University of Florida (UF). He is a role model for being an effective change agent in the field of computing, and he has demonstrated a model for how to attract people of color to computer science and help them thrive. Gilbert is the single leading producer of African-American Ph.D. recipients in computer science and a leading producer of minority Ph.D. recipients. Since 2006, he has produced 13 African-American, three Hispanic and nine women Ph.D. recipients across three research institutions. Gilbert has also been incredibly effective at attracting African-American faculty at each of these institutions.

Gilbert leads the Institute for African-American Mentoring in Computing Sciences (iAAMCS) program, which is part of the National Science Foundation (NSF) Broadening Participation in Computing Alliance. Under his leadership, the primary goal of iAAMCS is increasing the number of African-Americans pursuing and receiving Ph.D.s in computing sciences. iAAMCS works with CRA-W, and previously with the Coalition to Diversify Computing, to increase African-American participation in the Distributed Research Experiences for Undergraduates (DREU) program. Within DREU, iAAMCS has mentored more than 50 undergraduates. Since 2013, Gilbert has personally mentored 21 undergraduate DREU students. He has also published several articles pertaining to the state of African-Americans in computing, successful strategies for mentoring students, using culture with technology to advance learning, and making voting accessible.

Manuel A. Pérez Quiñones

Manuel A. Pérez Quiñones is the associate dean of the College of Computing and Informatics at the University of North Carolina at Charlotte (UNCC). He has effectively led diversity efforts by computing professional societies such as the Coalition to Diversify Computing (CDC) and the Center for Minorities and People with Disabilities in Information Technology (CMD-IT). Pérez Quiñones has also contributed to educational programs aimed at high school through graduate school educators, such as CS@VT High School Teachers' workshops (which led to ACM CSTA chapters being established across the state), and the NCWIT Pacesetters program. Further, he has given talks and served on panels to increase public awareness of the need to greatly increase the numbers of Latino/a students and professionals in computing. He has advised 10 Ph.D. students and 14 Master's students, and he has served on more than 20 Ph.D. committees and 50 student committees.

His history of diversity leadership through professional service is unparalleled. Pérez Quiñones founded and contributed to significant efforts, including the Virginia Latino Higher Education Network (VALHEN), the UNCC CCI Corporate Mentoring Program for Women in Computing, the Tapia Conference (program co-chair in 2009 and 2014), SIGCSE, CRA-W Collaborative Research Experiences for Undergraduates (CREU; co-chair from 2006-2010), CRA Center for Evaluating the Research Pipeline (CERP; advisory board from 2014-2015), and the Hispanic mailing list that supports Hispanic Ph.D. students and faculty.

He has received three NSF Broadening Participation in Computing Alliance grants. His workshops on inclusion, identity, and belonging has influenced change in the academic computing culture by bringing forward challenges and strategies to those who have the most influence on students and the departmental and classroom culture (e.g., teachers, faculty, and graduate students). Through his work in broadening participation, he has provided guidance and inspiration to decision makers, academic institutions, industry, and most importantly, young students.

About the Award and Selection Committee

This award honors the late A. Nico Habermann, who headed NSF's Computer and Information Science and Engineering Directorate and was deeply committed to increasing the participation of women and underrepresented minorities in computing research. With this award, CRA recognizes individuals who have made outstanding contributions aimed at increasing the numbers and/or successes of underrepresented members in the computing research community. This award acknowledges work in areas of government affairs, educational programs, professional societies, public awareness, and leadership that has a major impact on advancing these members in the computing research community.

This year's selection committee includes Carla E. Brodley (Northeastern University; committee chair), Ann Quiroz Gates (University of Texas at El Paso), and Kunle Olukotun (Stanford University).

Paul Messina Receives 2018 CRA Distinguished Service Award
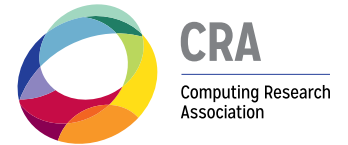
Paul Messina

Director, Computational Science Division, Argonne National Laboratory

Photo Credit: Argonne National Laboratory

Paul Messina was selected as the 2018 recipient of the CRA Distinguished Service Award for his significant contributions to the advancement of high performance computing and decades of service to the field. Messina has an incredible record of building and managing large-scale, diverse research activities. Over the course of his career, he has designed, directed, and otherwise executed numerous initiatives that have influenced U.S. policy and programs resulting in the U.S. leadership position in high-performance computing.

His impact extends beyond the research community to the government, where he has helped manage the stewardship of our nation's nuclear weapons stockpile, served on innumerable advisory panels, and led the Department of Energy's (DOE) Exascale Computing Project (ECP), the key to the success of the National Strategic Computing Initiative (NCSI). Under his leadership, Messina created, organized, and guided the ECP to accelerate delivering the US's first exascale computer in the early 2020s, its systems software and programming tools, and mission-critical applications at unprecedented scale

About the Award and Selection Committee

This year's selection committee includes Greg Morrisett (Cornell University; Chair), Chris Johnson (University of Utah) and Min Wang (Visa Research). CRA's Distinguished Service Award recognizes a person who has made an outstanding service contribution to the computing research community. This award recognizes service in the areas of government affairs, professional societies, publications or conferences, and leadership that has a major impact on computing research.

CRA Board Member Farnam Jahanian Named President of Carnegie Mellon University

CRA Board Member Farnam Jahanian has been named President of Carnegie Mellon University (CMU). From 2011 to 2014, Jahanian served as Assistant Director (AD) for Computer and Information Science and Engineering (CISE) at the National Science Foundation (NSF). In 2015, he was elected to the CRA Board of Directors and also received the CRA Distinguished Service Award. Jahanian is currently the chair of the National Research Council's Computer Science and Telecommunications Board.

From the CMU news release:

Farnam Jahanian, the nationally recognized computer scientist, successful entrepreneur, senior public servant and respected leader in higher education, has been appointed as the 10th president of Carnegie Mellon University. The appointment is effective immediately, with a formal inauguration scheduled for fall 2018.

Jahanian's distinguished and multifaceted career in academia, industry and the public sphere — and the many realms where those sectors intersect to support research and education — led him to Carnegie Mellon in 2014, as vice president for research. He then served two years as provost, and took over last July as CMU's interim president.

Farnam Jahanian
*New President of Carnegie Mellon University*

With the strong support of the university's trustees, as well as academic and administrative leaders, Jahanian has led a period of accelerating momentum in education and research at the nexus of technology and human life. The board of trustees voted unanimously on Jahanian's appointment Wednesday.

"A rigorous, international search has made it clear that Dr. Jahanian possesses a rare set of qualities and experiences that make him exactly the right leader for this university at this extraordinary moment in its history," wrote James E. Rohr, chair of the CMU Board of Trustees, in a message to the Carnegie Mellon community. "Dr. Jahanian embodies a bold, boundary-crossing, creative approach to the most important issues of our time — the very qualities that define and differentiate Carnegie Mellon, positioning this university to shape our world at the nexus of technology and human life."

"During his time as provost and interim president, Dr. Jahanian has led this institution with an irresistible urgency and a determination to seize the opportunities at hand," Rohr wrote. "He has enabled the deans, senior administrators, faculty, staff and students to pursue excellence at every level of their work. Through the power of his vision and his deft understanding of human nature, he has facilitated new levels of collaboration across the institution — an essential step in securing CMU's place among the greatest universities in the world."

Read the full release here.

Highlights of the 2018 CRA Computing Leadership Summit
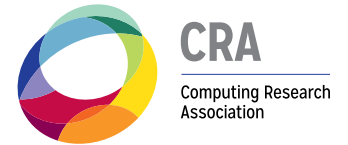
On Monday, February 26, in Arlington, Va., the CRA hosted its annual Computing Research Leadership Summit for the senior leadership of CRA member societies (Association for the Advancement of Artificial Intelligence, Association for Computing Machinery, CS-Can/Info-Can, IEEE Computer Society, Society for Industrial and Applied Mathematics, and USENIX Association) and the CSTB.

Several engaging talks at the Leadership Summit provided useful information on current issues important to the organizations, such as:

- Cameron Wilson from Code.org reported on the state of K-12 CS education in the United States. Code.org is a nonprofit dedicated to expanding access to computer science in K-12 schools and increasing participation by women and underrepresented minorities. They have had success with creating curricula and support for teachers without a CS background, breaking stereotypes about CS, and changing state and local education policies.

- Moshe Vardi from Rice University detailed his thoughts on technology and the future of work. He has been heavily involved in discussions in this area, including organizing events that bring together major leaders to discuss the topic. In December 2016, Rice hosted the De Lange Conference on Humans, Machines, and the Future of Work. In December 2017, CRA hosted the Summit on Technology and Jobs. Both events were organized by Vardi.

- Kate Larson from CS-Can/Info-Can gave an introduction about the newly formed organization. Its mission is to foster excellence in computer science research and higher education in Canada, drive innovation, and benefit society. Overall, CS-Can/Info-Can's aim is "to grow computer science in Canada in an inclusive way that includes women, visible minorities, and members of first nations."

During the society roundtable session, representatives of each organization discussed their current projects, future directions, and the activities they are undertaking. CRA Board Chair Susan Davidson shared updates on CRA's increased focus on teaching track faculty, plans to strengthen diversity programs with initiatives such as the Underrepresented Minorities and Persons with Disabilities (URMD) Grad Cohort Workshop, and an upcoming white paper on institutional homes for computing.

The Leadership Summit participants were also invited to attend an informal reception with participants of CRA's Career Mentoring Workshop and CRA board members.

After the reception, two sessions were held jointly with the CRA board meeting:

- Jim Kurose, assistant director of the CISE Directorate at NSF, gave an update on current and new initiatives, including a new process to handle sexual harassment.

- CRA Director of Government Affairs Peter Harsha discussed the current environment for science policy in D.C., including a recent congressional briefing on intelligent infrastructure and the President's budget request for FY19, which includes some modest gains and big losses for federal science agencies.

CRA CONFERENCE 2018 at snowbird

CRA
Computing Research Association

July 16-18

PROGRAM UPDATE

This year at Snowbird:

The program for the 2018 CRA Conference at Snowbird has recently been updated. Plenary sessions will feature former CRA Board Chair David Patterson, Professor Emeritus, University of California-Berkeley and, Distinguished Engineer, Google, and Raquel Urtasun, Associate Professor, University of Toronto and Head, and Uber Advanced Technologies Group, Toronto. A third plenary session will consist of a panel on "Diversity in Computing Leadership" chaired by Carla Brodley. The confirmed participants include Shinder Dhillon, Head of Global Diversity & Inclusion - Engineering & Corporate Functions, Microsoft, Brian Reaves, Chief Diversity and Inclusion Officer, Dell, Inc., and Ayanna Howard, Chair, School of Interactive Computing at Georgia Tech.

As in prior conferences, there will also be a "Making a Federal Case for Computing" plenary session led by CRA Director of Government Affairs Peter Harsha.

Parallel session topics (see next page) include approaches to increasing diversity, faculty recruiting, department rankings, new models for industrial research in CS, and a session on "Using CRA Data to Improve Your Department and Inform Decision Making" co-chaired by Jane Stout, CRA's director of the Center for Evaluating the Research Pipeline, and Betsy Bizot, CRA Director of Statistics and Evaluation. The conference will also feature short after-dinner talks on future directions in computing research, which are organized by the Computing Community Consortium (CCC).

A preliminary program is below. It will be updated on the CRA website as additional information becomes available. There will be several hours of free time for networking, mingling, hiking, or hanging out and enjoying the gorgeous environment.

Online registration will open on the CRA website in April 2018.

Please note: The conference will start on a Monday, which is a variation from past conferences which started on a Sunday.

In addition to the conference, a workshop for new department chairs will be co-chaired by Greg Hager, Johns Hopkins University, and Andrew Sears, Penn State, on July 16.

Monday, July 16

2:00 – 7:00 pm	**Registration**
3:00 – 5:30 pm	**New Chairs Workshop**
	Co-chairs: Greg Hager, Johns Hopkins University, and Andrew Sears, Penn State
6:00 – 7:00 pm	**Welcome Reception**
7:00 – 9:00 pm	**Dinner/Awards Presentation/**
	After Dinner Speech

Welcome from the Conference Chairs

Award Presentations
Distinguished Service and A. Nico Habermann
Susan Davidson, University of Pennsylvania, and Andrew Bernat, CRA

CRA-E Faculty Mentoring Awards
Susanne Hambrusch, Purdue University, and Lori Pollock, University of Delaware

Plenary Talk
David Patterson, University of California – Berkeley and Google

Tuesday, July 17

6:00 am – 6:30 pm	**Registration**
7:00 am	**Breakfast**
8:30 am – 10:00 am	**Plenary Panel**
	Diversity in Computing Leadership
	Chair: Carla Brodley, Northeastern University Panelists: Shinder Dhillon, Microsoft, Brian Reaves, Dell, and Ayanna Howard, Georgia Tech
10:00 am	**Break**
10:30 am – noon	**Parallel Tracks**
	Increasing Diversity in Computing is Easier Than You Think: 10 Small Steps that Make a Big Difference
	Chair: Mary Hall, University of Utah
	Growing a CS Department into a School/College of Computing
	Chair: Chris Johnson, University of Utah
	Department Rankings
	Chair: H.V. Jagadish, University of Michigan
Noon – 1:30 pm	**Lunch**

Tuesday, July 17 *(continued)*

1:30 – 3:00 pm **Parallel Tracks**
Improving Faculty Recruiting in the Computing Community
Co-chairs: Shashi Shekhar, University of Minnesota, and Josep Torrellas, University of Illinois at Urbana-Champaign

Using CRA Data to Improve Your Department and Inform Decision Making
Co-chairs: Betsy Bizot, CRA, and Jane Stout, CRA

NOTE: a third session is currently being planned for this time slot

3:00 pm **Break**

3:30 – 5:00 pm **Networking Activities**

5:30 pm **Double-blind Wine/Beverage Tasting (Part 1)**

6:30 – 9:00 pm **Dinner**
After Dinner Talks–Computing
Research Futures
Chair: Mark Hill, University of Wisconsin - Madison
Plenary Speaker 1: Kate Starbird, University of Washington
Plenary Speaker 2: Kathy Yelick, University of California, Berkeley, and Lawrence Berkeley National Laboratory

Wednesday, July 18

6:00 am – 6:30 pm **Registration**

7:00 am **Breakfast**

8:30 – 10:00 am **Plenary Session**
Plenary Speaker: Raquel Urtasun, University of Toronto and Uber Advanced Technologies Group, Toronto

10:00 am **Break**

10:30 – Noon **Parallel Tracks**
Self-driving Cars: When Will They Become Mainstream?

Diversity in Research Conferences: Spotlight and Brainstorming Solutions
Co-chairs: Kim Hazelwood, Facebook, Margaret Martonosi, Princeton University

Booming Faculty: Opportunities and Challenges
Chair: Laura Haas, University of Massachusetts - Amherst

Noon – 1:30 pm **Lunch**

Wednesday, July 18 *(continued)*

1:30 – 3:00 pm	**Parallel Tracks** Recruiting, Retaining, and Advancing Teaching Faculty *Co-chairs: Dan Grossman, University of Washington and Penny Rheingans, University of Maryland Baltimore County* Increasing Social Responsibility in Computing Professionals — What Should CS Departments and Labs Do? *Chair: Moshe Vardi, Rice University* New Models for Industrial Research in CS *Co-chairs: Brent Hailpern, IBM and Joe Sventek, University of Oregon*
3:30 – 5:00 pm	**Making a Federal Case for Computing Plenary Speaker: Peter Harsha, CRA**
5:00 pm	**Break**
5:30 pm	**Double-blind Wine/Beverage Tasting (Part 2)**
6:30 pm	**Dinner**

President's Budget Request a Mixed Bag for Science, but it Could Have Been Much Worse

By Peter Harsha

What a difference a budget deal makes…

The President's budget request for FY 2019, released yesterday, includes some modest gains and some big losses for Federal science agencies — details below, but on the whole a rather mixed bag for those who believe in the importance of the Federal investment in fundamental research. But it could have been much worse.

We'd gotten warning that the budget would likely slash science investments at multiple agencies in fairly dramatic ways. But that was before Congress and the Administration managed to agree late last week — with only a brief government shutdown — on a two year budget deal that increased budget caps on both defense and non-defense discretionary spending. That agreement, reached early Friday morning, boosted the non-defense discretionary spending cap by 26 percent over the next two years, and sent the White House's Office of Management and Budget back to the drawing board over the weekend, revamping the President's planned request to reflect the new fiscal reality.

And that's a good thing, because the President's planned budget for science was abysmal. We know some of the details about that original plan because the Administration didn't have time to revamp some of the supporting documentation they've traditionally produced to accompany the budget request. An Analytical Perspectives volume is traditionally included with the budget submission and it includes budget breakdowns by theme, including a whole chapter on Research and Development. In that chapter you'll find descriptions of the President's priorities for Federal R&D, including "Protecting the Homeland from Physical and Cyber Attacks," "Harnessing Artificial Intelligence and High Performance Computing," and "Integrating Autonomous and Unmanned Vehicles into the Transportation Network," but also several charts that detail what the Administration is requesting for each of the agencies involved in R&D work. Depressingly, most of the charts detail requests with double-digit percentage decreases for Federal science programs. For the National Science Foundation, for example, the only Federal agency whose

mission includes support for all the fundamental science and engineering disciplines, here's what the Administration planned to request for FY 2019:

National Science Foundation	5,938	6,030	4,177	−1,853
Research and Related Activities	5,314	5,412	3,821	−1,591
Education and Human Resources	409	410	290	−120
Major Research Equipment and Facilities Construction	215	208	66	−142

[The column headings are: 2017 Actual; 2018 Annualized CR; 2019 Proposed; Dollar Change 2018 v 2019; Percent Change 2018 v 2019. So the deltas in the last two columns are compared to a FY18 budget that assumes flat funding from a continuing resolution.]

But the budget agreement changed most of that. With new caps that made room for $132 billion in additional non-defense spending, President Trump and his OMB Director Mick Mulvaney made the decision to add just $75 billion back to the non-defense budget. In his transmittal letter to Congress, Mulvaney acknowledged that though the President agreed to the new budget caps by signing them into law, he didn't believe that the increases were completely justified for non-defense spending, so his request effectively leaves $57 billion in potential spending on the table.

Fortunately for the computing research community, NSF — which funds about 82 percent of all fundamental computing research in U.S. universities — was one of the agencies that benefitted from this last minute revamp. The President's request calls for flat funding for the agency overall, but a 2 percent increase for NSF's research accounts — a marked improvement over the 29 percent decrease originally considered before the budget deal. The last-minute revamp of the NSF budget means we don't have much detail about how the agency would plan to spend the 2 percent windfall. In fact, here is the entirety of the agency's budget justification (last year it was 470 pages):

National Science Foundation Summary Account Table FY 2019 Request to Congress (Dollars in Millions)

NSF by Account	FY 2017 Current Plan	FY 2019 Requested	FY 2019 vs. FY 2017 Amount	Percent
Research and Related Activities	6,006	6,151	145	2%
Education and Human Resources	873	873	-	-
Major Research Equipment and Facilities Construction	215	95	-120	-56%
Agency Operations & Award Management	359	334	-25	-7%
National Science Board	4	4	-	-
Office of Inspector General	15	15	-	-
Total, NSF	**7,472**	**7,472**	**-**	**-**

The FY 2019 Budget Request for NSF is $7.472 billion, the same as the FY 2017 Current Plan level. The increase for the Research & Related Activities account will allow the NSF to invest in priority areas like Advancing NSF's Big Ideas – bold questions that will drive NSF's long-term research agenda; implementing agency reforms centered on accelerating focused, cross-disciplinary efforts around two of the NSF Big Ideas – The Future of Work at the Human-Technology Frontier, and Harnessing the Data Revolution; and beginning construction on the Antarctic Infrastructure Modernization for Science project. The decrease for the Major Research Equipment & Facilities Construction account is largely due to the support for two new Regional Class Research Vessels. The decrease for the Agency Operations and Award Management account is largely due to the completion of the construction of and relocation to NSF's new headquarters building. More details on NSF's FY 2019 Budget Request will be provided at a later date.

Other "winners" (loosely defined) among research agencies in the President's budget include:

- **Department of Defense Science and Technology:** overall, up 2.3 percent over FY17; Basic Research (6.1) up 0.5 percent; Applied Research (6.2) down 4.4 percent; Advanced Technology Development (6.3) down 0.9 percent. DARPA is the big winner in DOD S&T with an increase of about 19 percent vs. FY17 in the President's plan.

- **National Institutes of Health:** NIH was also slated for a substantial cut (27 percent) in Trump's initial plans for FY 2019, but emerged from the weekend with a flat budget request vs. FY17.

- **Department of Energy Office of Science:** Slated to receive a 22 percent cut, instead would also get flat funding vs. FY17 in the President's budget. Advanced Scientific Computing Research (ASCR) — primarily because exascale is a clear Administration priority, would see a *39 percent increase* vs. FY17, growing to nearly $900 million.

But other agencies still find themselves subject to deep cuts in the President's plan, even after the budget cap deal:

- **Department of Energy's Advanced Research Projects Agency (ARPA-E):** The President's plan once again eliminates funding for the ~$300 million agency. The President's FY 2018 budget called for the program's elimination, but congressional appropriators are split on whether to follow through. House appropriators agree with the President's request to close the office, Senate appropriators included $330 million for the agency in their FY18 appropriation.

- **National Institute of Standards and Technology:** NIST's Science and Technical Research and Services (STRS) would see a 16 percent reduction vs. FY17 under the President's plan. NIST's Manufacturing Extensions Partnership would be eliminated under the budget.

- **Climate Research:** The President's budget would eliminate climate research programs at EPA, support only 3 of 8 USGS Climate Science Centers, and cancel five NASA earth science missions.

Of course, the President's budget request is just the starting point in a year-long (or longer) process of appropriating funding for Federal agencies. Congress has the key role to play in actually putting numbers to these programs, and they've already demonstrated **no serious commitment to budget suggestions from this Administration.** Odds are also good that they'll find ways to spend that extra $57 billion in non-defense spending the President didn't see fit to include in his request.

There are also many other details about this budget we're still waiting to learn — how NSF plans to prioritize its research, what shifts in cyber security research funding at the Department of Homeland Security mean for the character of the work supported, how the Department of Energy expects to ramp up exascale funding…to name just a few. And, of course, we still don't know how congressional appropriators plan to put that extra spending towards the unfinished FY 2018 appropriations, something they need to decide before March 23rd, when the current continuing resolution funding government expires.

So while this is an important first step in science funding for FY19, it's just the start of a long process. It would have been better to find more support from the President for the investments that help fuel the innovation that drives the nation's economy and our competitiveness, but this is just the first word in the conversation and not the last. We'll continue to weigh in with policymakers about the importance of the Federal investment in research. And we'll track it all and report what we learn here, so stay tuned!

Women and Men Ph.D. Students Have Different Experiences in the Computing Community

By Jane Stout, CERP Director

	Women	Men
Feel like an outsider in the computing community	**21%**	**14%**
Feel like my ideas or opinions are minimized or ignored	**29%**	**18%**
Confident in my ability to discuss theory with senior members of my field	**68%**	**78%**

CERP collected data from Ph.D. students during 2016 via the Data Buddies Project. Students were asked to report on their experiences in the computing community, and several gender differences emerged. Women were more likely to say they felt like an outsider in the computing community than men. Women were also more likely to report they felt their ideas or opinions were minimized or ignored by others in their department. Finally, women were less confident in their ability to discuss theory with senior members in their field. These data point to a very different subjective experience for women versus men in the computing community, illustrating room for improvement in the climate for women in Ph.D. computing programs. CERP provides several resources to help the community enhance women's sense of belonging in computing:

- Jane Stout and Tracy Camp present actionable items to increase women's sense of belonging in computing in a 2015 SIGCAS paper.

- Jane Stout presents more ideas in a recent webinar with BrightTALK and an interview with EdTech magazine.

Expanding the Pipeline: ACM-W Programs Expand to Support Students and Professional Women in Computing

CRA-W
Computing Research Association
Women

By Jodi Tims

ACM-W Project Overview

Supporting, celebrating, and advocating for women in computing is the mission that lies at the heart of the activities of ACM-W. Our longstanding projects of scholarships, celebrations, and student chapters provide opportunities for undergraduate and graduate students to increase their technical knowledge while networking and building community. Recently we have begun to expand our activity to include projects that support populations of women in computing beyond students. This article provides an overview of all of our projects, old and new.

ACM-W Scholarships

The ACM-W Scholarships program, through the generous support of Google, Microsoft, and Oracle, annually awards $35,000 in scholarships for computer science students to attend research conferences. In most cases, the students who apply for these scholarships are seeking to have their first conference experience. Students need not be presenting to apply for a scholarship as the primary goal is to increase the interest of those attending in pursuing a research career. Scholarship recipients over the past five years, along with the conferences they have attended, can be viewed on the ACM-W website (https://women.acm.org/category/scholarship/). The monthly ACM-W newsletter highlights the experience of one scholarship recipient each issue.

Celebrations of Women in Computing

Celebrations of Women in Computing are regional conferences that bring together an average of 200 students, faculty, and industry professionals for a two-day event. The typical celebration includes keynote presentations, research talks, poster presentations, and time for networking and fun. In just the past five years, the number of Celebrations has grown from roughly 10 per academic year, primarily in the United States, to nearly 30 this year all over the world. Post-conference surveys of Celebrations attendees provide evidence of the success and impact of the program. In response to the question "How has attending this celebration impacted the likelihood that you will complete a major or minor in computing?", 97% of respondents replied that the celebration had a positive or strong positive impact. The most meaningful experiences for attendees are the social connections they make (34%) followed by career guidance (e.g., job fair, resume review, interactions with industry professionals) (15%) and learning something new (15%). And, according to attendees, word of mouth continues to be the best way to encourage women to attend these conferences. More than two-thirds of the respondents indicated that they found out about the celebration from a mentor, advisor, professor, friend, or colleague or that they had previously attended a celebration themselves. ACM-W appreciates the people in our partner organizations that assist us in promoting these events.

ACM-W Student Chapters

To date, the Celebrations project has inspired well over 10,000 students to persist in their pursuit of a computing degree. But as the students return to the day-to-day life of their home institutions, an ongoing community of support can be an invaluable resource. ACM-W Student Chapters provide such a community. Student Chapters hold regular meetings and participate in special projects like K-12 outreach programs and monthly CRA-W Town Hall meetings. Like Celebrations, the number of ACM-W Student Chapters is growing rapidly. In 2012, the number of chapters was 45. Today it stands at nearly 180 and one or two new chapters are being chartered every month.

CRA-W
Computing Research Association
Women

ACM-W Professional Chapters

Because the desire for a support community does not end when women enter their professional careers, ACM-W has increased efforts to establish professional chapters worldwide. Currently, there are only five ACM-W Professional Chapters and all are located in Europe. Led by Rachelle Kristof Hippler (Baldwin Wallace University) and Laura Spencer (Ultimate Software), the effort to establish professional chapters will enable alumni of student chapters and other interested women to build supportive communities that provide professional development opportunities throughout their careers. ACM-W will also encourage professional chapters to engage with student chapters in their area to mentor young women as they transition from college to the professional world.

International Efforts

A goal of ACM-W is to increase our presence and impact globally, particularly in China, Africa, and South America. This past fall, ACM and ACM-W joined with the International Council for Science (http://www.icsu.org) and 10 other partnering organizations in the Gender Gap in Science project (https://icsugendergapinscience.org/). The project's goal is to gather and report data that will assist in understanding the gender gap of women in science, mathematics, and computing in areas of the world where such understanding is currently limited. During the fall

semester, three ACM-W volunteers–Catherine Lang (Latrobe University, Australia), Aruquia Peixoto (CEFET/RJ, Brazil) and Larry Lubowa (Stawa University, Uganda)–joined working groups that will conduct surveys in Asia, Africa, and South America over the next year. The findings of these surveys, along with information on best practices for attracting women to pursue careers in science, mathematics, and computing, will be published and reported at conferences at the conclusion of the three-year project in 2019.

Grad Cohort Workshops

ACM-W has long admired the Grad Cohort project of CRA-W for its positive impact in providing valuable mentoring to female graduate students in computing. For the past two years, our organizations have partnered to bring groups of faculty from several countries to participate in Grad Cohort workshops in the hope that similar events might be established globally. In April 2017, representatives from India, Australia, Spain, and the Netherlands traveled to Washington, D.C. to participate. We are pleased that there are currently plans to launch the first Grad Cohort workshop in Spain in the fall of 2018 as a result. This April, groups from France, Greece, Brazil, India, and the United Kingdom will attend this year's workshop in San Francisco, California.

These are exciting times for ACM-W, and we celebrate the success of our programs and the hardworking volunteers that make

them happen. ACM-W will continue to invest in growing the pipeline of women in computing as we remain committed to supporting, celebrating, and advocating for women in computing worldwide.

CAN-CWIC: The Evolution of a Celebration

For the first five years of its existence, the Canadian Celebration of Women in Computing (CAN-CWIC) was an Ontario-centric event and held at five different universities across Ontario. Starting in 2016, CAN-CWIC expanded to include participation from universities all over Canada. In November 2017, CAN-CWIC 2018 took place Montreal, Quebec, Canada. The event was chaired by Naouel Moha from the Université du Québec à Montréal *(UQAM)* and was attended by nearly 600 students and professional women from across Canada. The conference program featured a programming competition, a video welcome from our newly appointed Governor General Julie Payette, keynotes given by Margaret-Ann Armour from the University of Alberta and Joëlle Pineau from McGill University, a poster session, graduate presentations, tech talks, and numerous other panels and workshops. A career fair with more than 30 companies present was a huge hit and, we hope, resulted in many job offers! CAN-CWIC 2018 will be held in Halifax on November 2-3, 2018 to coincide with Dalhousie University's 200th birthday as well as its initiative to double the number of women in its computer science program in the next year.

ACM-W Student Chapter Alumni Success

Participation in a student chapter can have an impact beyond a woman's college years. The story of Priya Chawla illustrates this point. In 2014, Chawla launched an ACM-W Student Chapter at the University of Cincinnati (UC). In two years, under her leadership, the UC ACM-W group garnered attention and funding from local and outside supporters, notably Microsoft and Google. This funding enabled her chapter to do outreach that enhanced her college's diversity. As a result, the chapter received the ACM Excellence Award for Outstanding Community Service. Upon graduation, Chawla began to pursue an industry career at Northrup Grumman Corporation. Her potential for leadership was recognized there and she was invited to be a part of the company's prestigious Future Technical Leaders program. Chawla maintained her passion to see ACM-W Student Chapters be successful and was invited to join the ACM-W Council in June 2016. She brings a youthful energy to the council and is currently focusing on developing a project that will connect with young professional women and help student chapter officers build leadership skills.

About the Author

Jodi Tims, Ph.D. is a professor and chair of the Department of Computer Science at Baldwin Wallace University. She is very active in service to the women in computing community. At present, Tims is chair of ACM-W, past chair of the Ohio Council of Women in Computing (OCWiC). She also is a member of the Northeast Ohio Regional IT Engagement Board (RITE) and the OHTech Board of Directors. She is active in the computing education community as a member of ACM's Special Interest Group on Computer Science Education (SIGCSE) and a member of several SIGCSE symposia committees. Along with Yan Timanovsky (ACM education and professional development manager) and Stu Zweben (professor emeritus, Ohio State University), Tims is co-author of the *ACM Annual Survey of Non-Doctoral Granting Computing Departments*, which appears annually in the September issue of *Inroads*.

> "In two years, under [Chawla's] leadership, the UC ACM-W group garnered attention and funding from local and outside supporters, notably Microsoft and Google."

Collaborative Research Experience for Undergraduates Program

CRA-W
Computing Research Association
Women

CRA-W will be accepting applications for the 2018-2019 Collaborative Research Experience for Undergraduates (CREU) program starting April 18.

Application Deadline: May 18, 2018

CREU is an undergraduate research program that provides research stipends to teams of students working on research projects under the guidance of a mentor at their home institutions. Students supported by CREU collaborate with each other and with their mentors during the academic year and, in some cases, the following summer. Students are strongly encouraged to present their CREU research at national or regional conferences. The program provides travel funds to support such participation and past CREU participants have found such activities to be extremely valuable.

Read firsthand about the CREU experience and the opportunities this program provides both during and after the research experience.

The objective of the CREU program is to increase the number of women and underrepresented groups entering graduate studies in the fields of computer science and computer engineering by exposing them to the joy and potential of research.

CREU is supported by the National Science Foundation and partners with other organizations committed to broadening participation in computing to administer their REU programs. The NSF funded Institute for African-American Mentoring in Computer Sciences (iAAMCS) is a current partner, and the Coalition to Diversify Computing (CDC) was previously a program partner.

For more information, please visit the CREU website: https://cra.org/cra-w/creu/.

Research Highlight:
CRA Board Member Josep Torrellas

CRA
Computing Research Association

Josep Torrellas

Josep Torrellas is the Saburo Muroga Professor of Computer Science at the University of Illinois at Urbana-Champaign (UIUC). He is the director of the Center for Programmable Extreme-Scale Computing, and past director of the Illinois-Intel Parallelism Center. Torrellas received the IEEE Computer Society Technical Achievement Award for "Pioneering contributions to shared-memory multiprocessor architectures and thread-level speculation," the UIUC Award for Excellence in Graduate Student Mentoring, and has been a Willett Faculty Scholar at Illinois. He is a member of the CRA board of directors, and of the International Roadmap for Devices and Systems (IRDS). He has served as a CCC Council Member (2011-2014) and as the chair of the IEEE TCCA (2005-2010). He is a fellow of IEEE, ACM, and AAAS. He has graduated 36 Ph.D. students, who are now leaders in academia and industry. He received a Ph.D. from Stanford University.

As Stanford professor John Hennessy once said, "[P]arallelism and ease of use of truly parallel computers … [is] a problem that's as hard as any that computer science has faced." As my Ph.D. advisor, Hennessy instilled in me a desire to conquer this problem, and I have been working at it for the last 30 years. Specifically, my research focuses on parallel computer architecture, with an emphasis on shared-memory organizations and their software layers.

Early in my research career, I was fortunate to be part of the teams that worked on the Stanford DASH and the Illinois Cedar multiprocessors, two academic computer prototypes of the late 1980s. Those were exhilarating times when parallel architectures seemed poised to take over the computer industry. Later, interest in parallelism waned as processor designers competed in the frequency race – only to crash into the power and complexity walls. After the turn of the millennium, parallelism became hot again, this time spreading in an inexorable manner, dominating all markets including handheld devices. Unfortunately, while researchers have made major advances in parallel architectures and systems, true ease of programming is still elusive. Further, the slowdown of Moore's law is about to accentuate the stress between programmability and performance as "easy parallelism" is getting exhausted. Overall, these trends ensure that research in programmable parallel computer architecture will remain vibrant and highly relevant.

Throughout my career, I have tried to work with computer companies, pushing ideas for programmable parallel architectures. For example, in the early 2000s, I participated in the design team of the IBM PERCS multiprocessor. This was an experimental multiprocessor funded by DARPA's High-Productivity Computing Systems program, whose goal was to develop technologies for productive and efficient parallelism. This machine introduced several novel architecture ideas, including new multithreading support and processing-in-memory engines. PERCS was slated to become the nodes of the University of Illinois at Urbana-Champaign's Blue Waters supercomputer.

A few years later, as the energy wall became omnipresent, I worked with Intel researchers to design Intel's Runnemede Extreme-Scale Manycore. This was a highly energy-efficient manycore, with hundreds of streamlined cores, and novel architecture and circuit techniques to save energy. It was supported by DARPA's Ubiquitous High Performance Computing program and DOE's X-Stack program as the building block of an exascale multiprocessor. We designed the manycore's extreme low power cores and cache hierarchy, energy-management mechanisms, and a programming model that minimized data movement.

To further enhance programmability, I collaborated with Intel researchers to build QuickRec, the first multicore x86 prototype of deterministic Record and Replay (RnR). RnR is a primitive that consists of recording into a log all the non-deterministic events that occur during a workload execution. Then, during a re-execution of the

same workload, the logged inputs are dynamically provided at the correct times, enforcing the exact reproduction of the initial execution. QuickRec uses field-programmable gate arrays to extend the core and cache hierarchy of an Intel multiprocessor, and a modified Linux operating system to manage the hardware. We showed that RnR can debug non-deterministic software and even detect security intrusions.

In a joint effort with several other University of Illinois faculty, we created the Illinois-Intel Parallelism Center (I2PC). In this center, which I had the honor to lead, we performed interdisciplinary research on programmable parallel systems. In collaboration with Intel, my research group developed the Bulk Multicore. This is an out-of-the-box multiprocessor concept, where cores continuously execute atomic blocks of instructions called Chunks, and cache coherence is maintained in a novel way with Bloom filter-based signature operations on sets of data. Bulk delivers high performance and is easy to program as its transactional memory-like extensions are transparent to users.

Planting Ideas
Working with companies has been a great learning experience, and has allowed me to seed some ideas that have impacted commercial products. However, I also enjoy thinking about new concepts that can change the way we design and program computers in the long run. For example, I devoted many years to develop the area of thread-level speculation, where the dependences between concurrently executing threads are monitored by the hardware, hence relieving the programmer from the burden of proving thread independence. Some of these ideas have contributed to the current popularity of

hardware transactional memory. Currently, I am pushing the frontiers of the interaction between programming and machine design by developing very low overhead synchronization and communication primitives for highly integrated computers.

With the sunsetting of Moore's law, parallel computer architecture is about to take center stage in computer science and engineering. As the remaining semiconductor generations fail to deliver historic improvements, architecture innovations will become strategic to computer companies. Many research opportunities will appear. These are indeed exciting times for computer architects.

I have been blessed with the privilege of working with outstanding Ph.D. students, who have driven the work described. Many of them have taken up faculty jobs at CRA member institutions such as Cornell University, University of Washington, Georgia Tech, and the University of Southern California. They and other young minds will ensure that our field continues its dramatic advances.

I have also enjoyed serving the computing community in a variety of ways, some of them enabled by the CRA. For example, I co-organized two CCC-sponsored visioning workshops that contributed to an NSF funding program. For several years, I had the honor to serve as chair of the IEEE Technical Committee on Computer Architecture (TCCA) where, together with other colleagues, we created a yearly ACM-IEEE meeting that co-locates multiple architecture and software conferences (HPCA-PPoPP-CGO) to enhance interdisciplinary interactions. It is through this interdisciplinary work that we will be able to tame the challenge of parallelism and usable parallel computers.

CCC @ AAAS 2018 Recap

By CCC Staff

Over the past few years, computing has had more of a presence at the American Association for the Advancement of Science (AAAS) Annual Meeting. This year's meeting in Austin, TX had a number of computing talks and presentations, including three by the Computing Community Consortium (CCC):

Rethinking Approaches to Disaster Management and Public Safety with Intelligent Infrastructure, was moderated by CCC Executive Council Member Dan Lopresti, with speakers Michael Dunaway (University of Louisiana, Lafayette), Robin Murphy (Texas A&M University), and Nalini Venkatasubramanian (University of California, Irvine). They talked about the design and integration of intelligent infrastructure — including embedded sensors, the Internet of Things, advanced wireless information technologies, real-time data capture and analysis, and machine-learning-based decision support — which holds the potential to greatly enhance public safety, emergency management, disaster recovery, and overall community resilience, while addressing new and emerging threats to public safety and security.

Transforming Cities, Transportation, and Agriculture with Intelligent Infrastructure, was moderated by CCC Chair Beth Mynatt, with speakers George Pappas (University of Pennsylvania), and Shashi Shekhar (University of Minnesota, Minneapolis). This session discussed three critical areas of fundamental scientific research in intelligent infrastructure (cities, transportation, and agriculture), and the challenges and barriers to realizing these advances as part of economically sustainable systems.

Artificial Intelligence: Augmenting Not Replacing People was moderated by CCC Director Ann Drobnis, with speakers Greg Hager (Johns Hopkins University), Eric Horvitz (Microsoft Research), and Julie Shah (Massachusetts Institute of Technology). Each talk highlighted a particular focus or application and illustrated both the opportunity for human augmentation, as well as the human-machine technology frontiers. The panel closed with a discussion of the opportunities and challenges of AI technologies for human augmentation.

Based on the engagement of the audience in all three sessions, it is clear that there is an excitement in the broader research community for this work. We hope that computer science sessions continue to grow at future AAAS meetings.

In addition to the three sessions, **Andrew Bernat,** the Executive Director of **Computing Research Association** (CRA), CCC's parent organization, was made an AAAS Fellow. Congrats to Andy!

The CCC will be blogging about each individual session over the next few weeks. For more information about CCC's involvement in AAAS, **please see this website.**

Call for Proposals: Creating Visions for Computing Research

By CCC Staff

The mission of **Computing Research Association's** (CRA) **Computing Community Consortium** (CCC) is to catalyze the computing research community and enable the pursuit of innovative, high-impact research. CCC conducts activities that strengthen the research community, articulate compelling research visions and align those visions with pressing national and global challenges. CCC communicates the importance of those visions to policymakers, government and industry stakeholders, the public, and the research community itself.

In accordance with the mission, CCC is **issuing a new call for proposals for workshops that will catalyze and enable innovative research at the frontiers of computing.**

From the solicitation:
A well-formulated proposal should do the following:

- Describe the visioning topic area and its current state of development within the field,

- Explain the proposed activities in detail (if more than one activity, be sure to demonstrate the differences between the activities, the rationale for more than one activity, and the mechanisms to coordinate across activities),

- Connect the activity and the vision: how does the former support/foster the latter?

- Justify why this vision and this activity are appropriate now,

- Specify the intended outcomes of the activity, and

- Describe how those outcomes can be used to advance the visioning topic area.

A complete proposal must also:

- Identify the organizing committee,

- Include brief biographical sketches of the organizers,

- Propose a representative set of potential invitees (be sure to include representation from industry, policy and funding organizations),

- Provide a draft budget with justification, and

- Articulate how the success of the workshop and its outcomes can be assessed.

This guide shares further insight about the visioning process, from idea conception through program formation. It includes suggested activities, sample wording, and a timeline. Past examples can be found **here.**

If you have ideas or topics for visioning, please consider submitting a proposal. For CCC planning purposes, proposals with start dates prior to December 2018 should be submitted by March 31, 2018. Proposals should be no more than six pages in length. They should describe the existing or potential vision(s) and proposed activities in detail, including how the larger community will be engaged.

For more information, see the complete **call for proposals.** And if you have questions, please e-mail us or see the slides from the **Visioning Activities Webinar.**

We look forward to receiving your ideas!

A Primer on the Meltdown & Spectre Hardware Security Design Flaws and their Important Implications

By CCC Vice Chair Mark Hill

As previously reported in the Computing **Community Consortium (CCC) Blog**, two major hardware security design flaws—dubbed Meltdown and Spectre—**were broadly revealed to the public in early January 2018.** These flaws are described in detail by the discoverers in research papers on **Meltdown** and **Spectre**, as well as Google blog posts **here** and **here.** Understanding these sources, however, requires considerable expertise and effort.

For this reason, I have prepared a slide deck (**animated PPTX** or **PDF**) to give the general computer science audience the gist of these security flaws and their implications. My goal is to enable the audience to either stop there or have a framework to learn more. A non-goal is exploring many details of flaw exploitation and patch status, in part because I am a computer architect, not a security expert, and others know the details much better than me.

The slide deck first reviews Computer Architecture 1.0 (the version number is new) that specifies the timing-independent functional behavior of a computer and micro-architecture that is the set of implementation techniques that improve performance by more than 100x.

It then asks, "What if a computer that is completely correct by Architecture 1.0 can be made to leak protected information via timing, a.k.a., micro-architecture?" The answer is that this is exactly what is done by the Meltdown and Spectre design flaws. Meltdown leaks kernel memory, but software & hardware fixes exist. Spectre leaks memory outside of sandboxes and bounds check, and it is scary. An implication is that the definition of Architecture 1.0—the most important interface between software and hardware—is inadequate to protect information. It is time for experts from multiple viewpoints to come together to create Architecture 2.0.

Blue Sky Ideas Conference Track at AAAI-18

By CCC Staff

One of the authors of the first place paper, Ana Paiva, receives her award from the organizers.

Computing Community Consortium (CCC) recently sponsored a Blue Sky Ideas Conference Track at the 32nd Association for the Advancement of Artificial Intelligence (AAAI) Conference on Artificial Intelligence (AAAI-18), February 2-7, 2018 in New Orleans, LA. The purpose of this conference was to promote research in artificial intelligence (AI) and scientific exchange among AI researchers, practitioners, scientists, and engineers in affiliated disciplines.

The goal of this track was to present ideas and visions that can stimulate the research community to pursue new directions, such as new problems, new application domains, or new methodologies.

First place: Ana Paiva, Fernando P. Santos, and Francisco C. Santos
Engineering Pro-Sociality with Autonomous Agents

Second Place: John E. Laird and Shiwali Mohan
Learning Fast and Slow: Levels of Learning in General Autonomous Intelligent Agents

Third place: Sridhar Mahadevan
Imagination Machines: A New Challenge for Artificial Intelligence

CCC provides travel awards to authors of the winning papers. We encourage you to apply for a Blue Sky Ideas track at your conference!

Requests need only include a brief description of the conference and a proposed list of program committee members for the track. For more information — including guidelines for conference program committees, recommendations for selecting winners, and logistics for issuing CCC-sponsored travel awards to the winners, as well as a sample call for papers for a Blue Sky Ideas track — visit our website.

Microsoft Research Dissertation Grant Accepting Applications

By Meredith Ringel Morris, Principal Researcher & MSR Dissertation Grant Chair

Broadening participation in computing is a core part of Microsoft's values; accordingly, we are excited to continue the Microsoft Research Dissertation Grant that aims to recognize, support, and mentor diverse doctoral students as they complete their dissertation research in computing-related fields.

This grant program is open to doctoral students in their fourth year or beyond, studying computing topics at universities in the United States and Canada, who are from underrepresented groups (women, African-American/Black, Latino, American Indian/Alaskan Native, Native Hawaiian/Pacific Islander, and/or people with disabilities). The program allows students to apply for a research grant of up to $25,000 to support their dissertation research; grant recipients will also get to take part in a two-day career workshop at Microsoft Research Redmond this autumn. Grant applications for 2018 will be due on March 30. You can read more about the Microsoft Research Dissertation Grant and find application instructions at http://aka.ms/msrgrant. As you check out this blog announcement, you may also consider sharing the news on Twitter and Facebook.

We hope that you will share information about this program with members of your organization who may be eligible to apply!

CRA Welcomes Daniela Cárdenas

CRA has recently hired Daniela Cárdenas as a program assistant. In her new role, Daniela supports CRA and CRA-W program activities with administrative and logistical matters such as planning meetings, workshops, outreach activities, and committee support.

Daniela emigrated from Venezuela in 2007, and holds a Bachelor's Degree in Political Science and Government and a minor in Education from Florida State University. In her spare time, Daniela enjoys watching football and painting with acrylics.

Nominations Open for the George Michael Memorial HPC Fellowship

The ACM/IEEE Computer Society George Michael Memorial HPC (GMM) Fellowship is endowed in memory of George Michael, one of the founding fathers of the SC Conference series. The fellowship honors exceptional PhD students throughout the world whose research focus is on high performance computing applications, networking, storage or large-scale data analytics using the most powerful computers that are currently available. The Fellowship includes a $5,000 honorarium and travel expenses to attend SC18 in Dallas on November 15, where the GMM Fellowships will be formally presented.

The deadline for 2018 nominations is May 1, 2018. For further information about the nominations process and a link to the online submissions form, visit https://awards.acm.org/hpc-fellows/nominations.

Augustana College in Rock Island IL

Assistant Professor of Computer Science

Augustana College invites applications for a tenure-track position in Computer Science for Fall 2018. The ideal candidate will have (or soon have) a PhD in Computer Science or a related field, a commitment to teaching excellence and an interest in shaping the future of the program. Review of applications will begin March 1, 2018, and continue until filled.

Learn more and apply at: *http://www. augustanafaculty.org/career_positions.php.*

Bellevue College, WA

Computer Science Instructor

The Science Division is seeking qualified individuals for the Computer Science, Tenure-Track Full-Time Faculty #018005. This position will start Fall 2018.

Tenure-track faculty are expected to teach, assess, and advise students; participate in department, division, and college-wide governance; engage in ongoing professional development, including equity training.

Minimum qualifications include PhD or Master's degree in Computer Science or related fields and 2 years of relevant teaching/training/work experience.

To apply, go to *www.bellevuecollege. edu/jobs*

Applications received by 03/05/2018 will be given first consideration.

Carnegie Mellon University

Post-Doctoral Fellow in Usable Privacy Position 1

Opening for a Post-Doctoral Fellow in Usable Privacy in the School of Computer Science at Carnegie Mellon University. This is to work on the Personalized Privacy Assistant project.

For details, please see: *https://www. privacyassistant.org/static/files/post-doc-opening-2018.pdf*

Carnegie Mellon University

Post-Doctoral Fellow in Usable Privacy Position 2

Post-doctoral opening at Carnegie Mellon University to work on Usable Privacy in the School of Computer Science. This opening starts in Spring 2018. Start date is negotiable.

For additional details: see: *https:// usableprivacy.org/openings*

Carnegie Mellon University in Qatar

Computer Science Postdoctoral Associate

Carnegie Mellon University in Qatar invites applications for three postdoctoral positions (position CMUQ-CS15-002). These positions are designed for candidates who are interested in enhancing their teaching portfolio, along with their research portfolio, to be better prepared for future academic positions. The positions expect candidates to relocate to Carnegie Mellon's campus in Doha with a start no later than August 1, 2018.

Responsibilities include supporting two to three advanced undergraduate courses per year, holding recitations/office hours, working closely with students, and supporting our general educational missions. In addition to this load, successful candidates are expected to conduct research in collaboration with any CMU-Q computer science faculty of their choice.

We are particularly interested in candidates in the following areas: Distributed systems, Computer networks, AI and Robotics, and Theory. Outstanding candidates in other areas are also encouraged to apply.

Qualifications

- Have completed, by the time of being hired, his/her Ph.D. in computer science, computer engineering, or related fields.

- A proven track record of productive research and excellent academic credentials.

- Exceptionally strong communication and interpersonal skills.

- Be able to work independently, as well as in a team.

The application should be submitted online at the following link: *https://account. interfolio.com/login?apply=48500*

Carnegie Mellon University

Postdoc and Systems Scienctist Positions in CyLab

Carnegie Mellon University's CyLab invites applications for postdoc and systems scientist positions in computer security. CyLab is a university-wide institute with participation from all seven colleges, including the School of Computer Science and the College of Engineering. CyLab focuses on fundamental advances in security and privacy and includes over 100 affiliated faculty. Successful applicants for the postdoc and systems scientist positions will work with CyLab faculty and students on established projects. Postdoc positions are limited to three years; system scientist positions are not.

We believe our people – students, faculty, and staff – are our core strength. We emphasize excellence, integrity, respect, collegiality, interdisciplinarity, continuous improvement and engagement in community, all within a welcoming, supportive, and inspiring teaching and learning environment. We are particularly interested in applicants who are committed and have passion for a culturally diverse environment in research and demonstrate a willingness to nurture the inclusive environment at Carnegie Mellon. We take pride and active steps in considering a diverse applicant pool in terms of gender, race, veteran status, and disability.

All areas of computer security are relevant for these positions. Particularly of interest is research on new algorithms and capabilities to make computer systems more secure while reducing the human effort needed to do so. This includes, but isn't limited to: applications of machine learning to security, such as threat prediction and network analysis; automated vulnerability diagnosis and repair; adversarial and trustworthy machine learning; and network-level, automated defenses.

Applicants should obtain a PhD in Computer Science or a closely related field before August 2018.

To apply please submit an application online at *https://apply.interfolio.com/48611*. Evaluation of applications will begin immediately and continue until positions are filled. Candidates are encouraged to apply early. Carnegie Mellon is an EEO/Affirmative Action Employer – M/F/Disability/Veteran.

Clemson University

Lecturer – School of Computing

The School of Computing at Clemson University invites applicants for multiple Lecturer positions beginning August 2018. Responsibilities will include teaching (primarily for undergraduate classes), student advising, participation in departmental and university committees, and other typical faculty responsibilities. Teaching assignments will be determined based on school needs and candidate interests. The ability to teach courses in operating systems, networks or software engineering is desirable, though not required. Lecturers are eligible for promotion to the rank of Senior Lecturer.

More information and application procedures may be found at *http://www.clemson.edu/computing/connect/positions.html*

CUNY College of Staten Island

Assistant Professor Computer Science

The College of Staten Island, an accredited senior college of The City University of New York (CUNY), seeks applicants for appointment to a tenure-track Assistant/Associate Professor position in the Department of Computer Science, in the areas of machine learning, artificial intelligence, security, big data, mobile computing, distributed computing, or cloud computing. Applicants should demonstrate a successful teaching record, exceptional research productivity through a solid, peer-reviewed publication record; have experience initiating research projects and the credentials appropriate for appointment to the doctoral faculty of the CUNY Graduate Center. The ideal candidate will have a PhD in Computer Science or closely related discipline.

For complete details, please go to *https://www.csi.cuny.edu/faculty-staff/human-resources/recruitment/jobs-csi*

Florida International University

Open-Rank Tenure Track/Tenured Positions (Job ID# 514055)

Florida International University is classified by Carnegie as a "R1: Doctoral

Professional Opportunities

Universities – Highest Research Activity" and recognized as a Carnegie Community Engaged university. It is a public research university with **colleges and schools** that offers **bachelor's, master's and doctoral programs** in fields such as business, engineering, computer science, international relations, architecture, law and medicine. As one of South Florida's anchor institutions, FIU contributes almost $9 billion each year to the local economy and is ranked second in Florida in Forbes Magazine's "America's Best Employers" list. FIU graduates are consistently among the highest paid college graduates in Florida and are among the leaders of public and private organizations throughout South Florida. FIU is Worlds Ahead in finding solutions to the most challenging problems of our time. FIU emphasizes research as a major component of its mission with **multiple state-of-the-art research facilities** including the **Wall of Wind Research and Testing Facility, FIU's Medina Aquarius Program** and the **Advanced Materials Engineering Research Institute.** FIU has awarded more than 220,000 degrees and enrolls more than 54,000 students in two campuses and centers including FIU Downtown on Brickell, FIU@I-75, the Miami Beach Urban Studios, and Tianjin, China. FIU also supports artistic and cultural engagement through its three museums: **Patricia & Phillip Frost Art Museum**, the **Wolfsonian-FIU,** and the **Jewish Museum of Florida-FIU**. FIU is a member of **Conference USA** and more than 400 student-athletes participating in 18 sports. For more information about FIU, visit **http://www.fiu.edu/.**

FIU's School of Computing and Information Sciences (SCIS) is a rapidly growing program of excellence at Florida International University (FIU). The School has 29 tenure-track faculty members and over 2,000 students, including over 90 Ph.D. students. The School is engaged in on-going and exciting new and expanding programs for research, education and outreach. The School offers B.S., M.S., and Ph.D. degrees in Computer Science, and M.S. degrees in Telecommunications and Networking, Cyber-security, and Information Technology as well as B.S./B.A. degrees in Information Technology. NSF ranks FIU 39th nationwide in externally-funded research expenditures. SCIS has six research centers/clusters with first-class computing and support infrastructure, and enjoys broad and dynamic industry and international partnerships.

The School of Computing and Information Sciences invites applications from exceptionally qualified faculty at all levels with particular emphasis on cyber-security, computer systems or data sciences. Ideal candidates for junior positions should have a record of exceptional research in their early careers and a demonstrated ability to pursue and lead a research program. Candidates for senior positions must have an active and sustainable record of excellence in funded research, publications and professional service as well as demonstrated leadership in collaborative or interdisciplinary research. In addition to developing or expanding a high-quality research program, all successful applicants must be committed to excellence in teaching at both the graduate and undergraduate levels. Applications are encouraged from candidates with highly transformative research programs and seminal ideas that extend the frontiers of computing and networking across other disciplines. A Ph.D. in Computer Science or related disciplines is required.

Non-Tenure Track Instructor Positions (Job ID# 514058)

The School of Computing and Information Sciences seeks exceptionally qualified candidates for multiple non-tenure track faculty positions at the level of Instructor. Ideal candidates must be committed to excellence in teaching a variety of courses at the undergraduate level. Candidates who employ innovative, evidence-based teaching pedagogies are particularly encouraged to apply. A graduate degree in Computer Science or related disciplines is required; significant prior teaching and industry experience or a Ph.D. in Computer Science is preferred.

HOW TO APPLY:
Qualified candidates for Open-Rank Tenure-Track/Tenured faculty positions are encouraged to apply to **(Job Opening ID #514055).** Qualified candidates for Non-Tenure Track Instructor positons are encouraged to apply to **(Job Opening ID #514058).** Visit *facultycareers.fiu.edu* and attach cover letter, curriculum vitae, statement of teaching philosophy, research statement, etc. as individual attachments. Candidates will be required to provide names and contact information for at least three references who will be contacted as determined by the search committee.

Review will continue until position is filled.

FIU is a member of the State University System of Florida and an Equal Opportunity, Equal Access Affirmative Action Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, disability status, protected veteran status, or any other characteristic protected by law.

Haverford College

Available Postdoctoral Fellow, and Software Engineer

Haverford College seeks to hire a full-time, exempt, fully benefits eligible Postdoctoral Fellow, and a full-time, exempt Software Engineer, in support of the College's pending DARPA contract, "Discovery reactions and uncovering mechanisms of perovskite formation." These positions are for an initial one-year term, with the potential for up to four years pending successful performance and continuation of funding. Fulfillment of these positions are contingent on funding approval.

Please visit *https://www.haverford.edu/human-resources/news/postdoctoral-fellow-cheminformatics-0* for information on the Postdoctoral Fellow, and *https://www.haverford.edu/human-resources/news/software-engineer* for detailed information about the Software Engineer position, and for instructions on how to apply.

Hendrix College

Visiting Assistant Professor of Computer Science

Hendrix College invites applications for a one-year term position for a Visiting Assistant Professor of Computer Science to begin in August 2018. The College seeks to extend its tradition of excellence in teaching and scholarship by attracting faculty who combine mastery of their disciplines with broad intellectual interests and commitment to the aims of a liberal arts college. The teaching load is six courses per year, with lab sections credited at one-half of a course. Doctorate is preferred; ABD will be considered.

Read more and apply online at: *https://goo.gl/wWIcCn.*

Hendrix College strives to maintain an environment free from discrimination and harassment, where employees treat each other with respect, dignity and courtesy. The College adheres to the principle of equal educational and employment opportunity without regard to age, race, color, religion, gender, disability, sexual orientation, gender identity or expression, genetic information, or national origin.

The following individuals have been designated to handle inquiries regarding the non-discrimination policies:

Shawn Goicoechea, Assistant Director of Human Resources &; Title IX Coordinator 1600 Washington Ave, Conway, AR 72032 501-450-1415 *goicoechea@hendrix.edu*

Hong Kong Baptist University

UNIVERSITY RESEARCH CLUSTER on DATA ANALYTICS and ARTIFICIAL INTELLIGENCE in X

Professor / Associate Professor / Assistant Professor (Data Analytics and Artificial Intelligence, Data Journalism, and Healthcare Analytics) (PR216/17-18)

Hong Kong Baptist University is developing cutting-edge Data Analytics and Artificial Intelligence (AI) technologies and their cross-talks with different disciplines for high impact applications. The University's AI Cluster is now recruiting a number of full-time faculty members at all grades from Assistant Professor to Full Professor who have a strong passion in interdisciplinary research as well as a strong research track record in Data Analytics and AI algorithms or their applications to Chinese Medicine, Healthcare, Journalism, and Media. They will be working collaboratively towards interdisciplinary research challenges including data-driven drug discovery for Chinese medicine (TCM), evidence-based TCM knowledge graph development, automated news writing, visual analytics for investigative reporting, etc.

The candidates are expected to have a PhD degree in Computer Science, Medical Science, Chinese Medicine, Journalism, Media or equivalent. They could be jointly appointed by more than one department, including but not limited by the Department of Computer Science (Faculty of Science), School of Chinese Medicine, and/or Department of Journalism (School of

Communication). Associate Professors and Full Professors should have an established research track record and are expected to lead interdisciplinary research project teams for high impact Data Analytics and AI applications. Assistant Professors are expected to be key players in the interdisciplinary research project teams.

The appointees are also expected to teach undergraduate and postgraduate courses in the hosting departments, including programme management, as well as contribute to professional and institutional services.

Initial appointment will be made on a fixed-term contract of three years commencing in 2018. Re-appointment thereafter is subject to mutual agreement and availability of funding.

For enquiry, please send email to *data-ai@hkbu.edu.hk.* More information can be found at *http://hkbu.ai.*

Rank and salary will be commensurate with qualifications and experience. The University offers competitive package which include retirement/gratuity benefits, annual leave, medical and dental scheme, housing assistance and relocation allowance wherever appropriate.

Application Procedure:
Applicants are invited to submit their applications at the HKBU e-Recruitment System (*jobs.hkbu.edu.hk*) and send in samples of publications, preferably three best ones out of their most recent publications. Applicants not invited for interview 4 months after the closing date may consider their applications unsuccessful. All application materials including publication samples, scholarly/creative works will not be returned after the completion of the recruitment exercise unless upon request. Details of the University's Personal Information Collection Statement can be found at *http://pers.hkbu.edu.hk/pics.*

The University reserves the right not to make an appointment for the post advertised, and the appointment will be made according to the terms and conditions then applicable at the time of offer.

Review of applications will begin on **1 March 2018** and will continue until the position is filled.

Indiana University Purdue University Indianapolis

Assistant Professor of Computer Science

The Department of Computer and Information Science at IUPUI invites applications for a tenure track faculty position at the Assistant or Associate Professor level in the area of Software Engineering and Computer Science Education Research. The position will begin in August 2018. An applicant must hold a Ph.D. in Computer Science or related fields, and is expected to develop a high-quality externally funded research program and be committed to excellence in teaching undergraduate and graduate students.

The application should be submitted online at the following link—*https://indiana.peopleadmin.com/postings/5516.*

Applications must consist of a letter of interest, curriculum vitae, and a statement of research direction and teaching interests. Applicants should also arrange for three letters of recommendation sent directly to the Faculty Search Committee via email. Evaluation of applications will begin on March 1, 2018 and will continue until the position is filled.

IUPUI is an EEO/AA Employer, M/F/D. We are committed to achieving excellence through diversity. Applications and nominations of women, persons of color, applicants with disabilities, and members of other under-represented groups are desired.

Michigan Technological University

Department of Computer Science

Lecturer Position

Michigan Technological University Department of Computer Science invites applications for the position of Lecturer. The successful candidate should be able to teach across the CS curriculum and cybersecurity field, and is expected to work with the faculty to incorporate cybersecurity related topics into existing courses.

An applicant must have earned an MS or PhD degree in Computer Science, Computer Engineering, or closely related area from an accredited institution. The department places a strong emphasis on balancing effective teaching with cutting-edge research, outreach, and service. Candidates are expected to demonstrate potential for excellence in teaching and the ability

to contribute to the departmental service needs. The expected teaching load is three courses per semester. Salary is negotiable depending upon qualifications. Lecturers are appointed for two-year, renewable terms, and there is opportunity for promotion to Senior Lecturer and Principal Lecturer positions.

The Department has 20 faculty, 460 undergraduate students in two degree programs (Computer Science and Software Engineering) and 50 students in MS in Computer Science, MS in Cybersecurity, and PhD in Computer Science programs. Michigan Technological University is a research university in Houghton, Michigan with 7,100 students and 400 faculty with educational and research programs in computing, engineering, physical and social sciences, forestry, humanities and business. Michigan Tech is located in Michigan's scenic Upper Peninsula and is surrounded by Lake Superior and nearby forests. The community offers year-round recreational and cultural opportunities.

Review of applications will begin immediately and continue until the position is filled. Women and underrepresented minorities are particularly encouraged to apply. Applications should be submitted online at *www.jobs.mtu.edu.* To learn more about the opportunity, please visit *http://www.jobs.mtu.edu/postings/6468* or contact the Department Chair, Dr. Min Song, at *mins@mtu.edu* or (906) 487-2209. Applications received by March 2, 2018 will receive full consideration.

Michigan Tech is an ADVANCE institution, one of a limited number of universities in receipt of NSF funds in support of our commitment to increase diversity and the participation and advancement of women in STEM. Michigan Tech is a member of the AGEP network of universities dedicated to increasing the number of underrepresented minorities obtaining graduate degrees in STEM fields. Michigan Tech acknowledges the importance of supporting spouses/partners and retaining a quality workforce. Michigan Tech is committed to offering career exploration advice and assistance whenever feasible and appropriate at the University and in the local community. See Partner Engagement Program for additional information.

Michigan Technological University is an Equal Opportunity Educational Institution/ Equal Opportunity Employer, which includes providing equal opportunity for protected veterans and individuals with disabilities.

Milwaukee School of Engineering (MSOE)

Computer Science Faculty Positions

Milwaukee School of Engineering (MSOE) recently announced major investments in the growth of MSOE's academic programs including a new $34M facility, the Dwight and Dian Diercks Computational Sciences Hall, and a new undergraduate degree in Computer Science (CS). Diercks Hall will house the new CS program and the established undergraduate program in Software Engineering (SE) as well as a GPU-accelerated supercomputer. Applications are requested to fill multiple CS faculty positions at any rank. This

is an exciting opportunity for the right candidates to contribute toward this significant endeavor.

Applicants must have an earned doctorate degree in CS, computational science, data analytics, software engineering, or closely related field by the beginning date of appointment. Candidates with expertise in any field of CS are encouraged to apply; particular areas of interest include topics associated with artificial intelligence. Proficiency in oral and written communication skills is required.

MSOE expects and rewards a strong primary commitment to excellence in teaching. Continuous improvement of teaching and continued professional development are expected. MSOE enjoys strong ties with numerous businesses and industries. MSOE CS and SE faculty work closely with MSOE business and industry partners on a variety of curricular, co-curricular, and consulting projects.

MSOE is a private, primarily undergraduate, polytechnic university with programs in engineering, math, business, and nursing. The EECS department offers an undergraduate degree in CS; undergraduate engineering degrees in biomedical, computer, electrical, and software engineering; and a master's degree in engineering. The ABET-accredited undergraduate software engineering program at MSOE had its first graduates in 2002, among the first in the US. The new CS program builds on existing strengths of the software engineering program. ABET-accreditation of the new CS program will be pursued. More information about the

new CS program and building are available at *https://www.msoe.edu/about-msoe/computer-science/*

To apply, please visit our website at *www.msoe.edu/hr.* When applying, please upload a single pdf file which includes: 1) a letter of interest; 2) a detailed resume; 3) contact information for three professional references; 4) statement of technical areas of teaching interest; and 5) if available, evidence of successful teaching. The review of applications will begin when received and continue until the positions are filled.

It is the policy of MSOE to provide equal employment opportunity to all individuals regardless of their race, ethnicity, color, creed, religion, sex, age, national origin, physical or mental disability, military and veteran status, sexual orientation, gender identity, genetic characteristics, marital status or any other characteristic protected by local, state or federal law. This policy applies to all jobs at the University and to all the terms, benefits, privileges, and conditions of employment/enrollment.

Monash University in Melbourne

Faculty of Information Technology

The Faculty of Information Technology (*https://www.monash.edu/it*) at Monash University in Melbourne Australia is establishing a new group in HCI and creative technologies. We invite faculty at all levels to join a rapidly growing group in human-centered interfaces. We are especially interested:

(1) Wearable and personalized interfaces
(2) Mobile and multimodal-multisensor interfaces, including fusion-based ones
(3) Data analytics for predicting user emotion, cognition, and health
(4) Conversational dialogue interfaces
(5) Brain-computer and adaptive interfaces

Interested applicants should have a PhD in CS, IT, cognitive, linguistic, or brain sciences, and several years of post-PhD experience. All candidates must have a strong publication record in top venues, excellent teamwork and communication/writing skills, and teaching/mentoring experience. Evidence of grants and industry partnerships is preferred. Depending on area, candidates are expected to have strong skills in methodology (empirical/statistical, machine learning, HCI methods), signal-processing, linguistic analysis/language processing, system architectures or software. The HCI area director is Dr. Sharon Oviatt, an ACM Fellow and international pioneer in human-centered interfaces: *https://www.monash.edu/it/our-research/graduate-research/scholarship-funded-phd-research-projects/projects/human-centred-mobile-and-multimodal-interfaces*

Monash and Melbourne Area:
Monash is Australia's largest university, ranking in the top 60 universities worldwide, with CS/IT rated in the top 70 (QS World rankings 2018). In addition to HCI, the IT School includes software, cyber-security, data science, AI, social computing, and many basic CS areas. The university has made strategic investments in facilities for prototyping innovative concepts, collecting and analyzing data, and displaying installations of interactive media—including sensiLab (tangible, wearable, augmented/virtual reality, multimodal-multimedia, maker-space), Immersive Visualization and Analytics lab, Centre for Data Science, ARC Centers of Excellence on Integrative Brain Function and Robotics. It currently is investing in HCI facilities for developing new mobile and multimodal/multisensor interfaces, analyzing human multimodal interaction, and predicting users' cognitive and health status.

Melbourne is rated the #1 city worldwide for quality of life (Economist & Guardian, *http://www.economist.com/blogs/graphicdetail/2016/08/daily-chart-14* and *https://www.theguardian.com/australia-news/2016/aug/18/melbourne-wins-worlds-most-liveable-city-award-sixth-year-in-a-row*), with excellent education, healthcare, infrastructure, low crime, and exceptional cuisine, culture, and creative design. It is renowned for its dramatic coastline, parks, wildlife, and wine region.

Position and Compensation:
Full-time for 12 months a year, with competitive salary and benefits: *http://adm.monash.edu.au/enterprise-agreements/academic-professional-2014/s1-academic-salary-rates.html,* including 17% superannuation retirement fund, relocation and generous start-up package. The academic year begins late Feb. 2018, with semester 2 starting late July, but start date is negotiable. For North American applicants, "Lecturer (level B)" is Assistant Professor, "Senior Lecturer (level C)" is Associate Professor, and "Associate Professor (level D)" is Professor. Monash

has a Women in IT Program, and welcomes talented female, minority, and international applicants. For enquiries: *Oviatt@ incaadesigns.org.*

To apply:
Submit online at *http://careers. pageuppeople.com/513/cw/en/job/571151/ academic-opportunities-in-human-computer-interaction-fit* with: (1) cover letter (indicating area 1-5, planned future research, date of availability); (2) CV with publications, research and teaching interests, 3-5 references with email/phone contact; (3) 3 publications.

Monash University in Melbourne

Research Fellow

The Faculty of Information Technology (*https://www.monash.edu/it*) at Monash University in Melbourne Australia is establishing a new group in HCI and creative technologies. We invite PhDs to apply for a 3-year postdoctoral fellowship in multimodal interfaces and behavior analytics. The selected candidate will join a rapidly expanding multidisciplinary group in mobile and multimodal-multisensor interfaces, conversational interfaces, brain-computer and adaptive interfaces, wearable and personalized interfaces, data analytics for predicting user cognition and health status, and other topics. The HCI area director is Dr. Sharon Oviatt, an ACM Fellow and international pioneer in human-centered interfaces: *https://www.monash.edu/ it/our-research/graduate-research/*

scholarship-funded-phd-research-projects/projects/human-centred-mobile-and-multimodal-interfaces

This position involves research on predicting user cognition and health status, based on analysis of different modalities (e.g., speech, images, writing, sensors) during natural activities. These analyses involve exploring predictive patterns at signal, activity pattern, lexical, and other levels. The ideal candidate would be an initiating researcher with a strong publication record who is interested in pioneering in emerging research areas. He/she would have an interest in developing new technologies to identify users' cognitive and health status, and using this information to develop personalized interfaces that promote learning, performance, and health.

Requirements:
- PhD in CS, IT, cognitive or linguistic sciences
- Training in HCI, multimodal interfaces, data analytics, modeling human behavior & communication
- Experience collecting and analyzing speech, images, handwriting, and/or sensor data
- Experience applying machine learning, empirical/statistical, linguistic, or hybrid methods
- Interest in human cognition, educational technology, or health-related technologies

- Strong interpersonal/teamwork and communication/writing skills
- Ability to work with diverse partners
- Prefer 2-3 years post-PhD experience

Monash and Melbourne Area:
Monash is Australia's largest university, ranking in the top 60 universities worldwide, with CS/IT rated in the top 70 (QS World rankings 2018). In addition to HCI, the IT School includes software, cyber-security, data science, AI, social computing, and many basic CS areas. The university has made strategic investments in facilities for prototyping innovative concepts, collecting and analyzing data, and displaying installations of interactive media—including sensiLab (tangible, wearable, augmented/ virtual reality, multimodal-multimedia, maker-space), Immersive Visualization and Analytics lab, Centre for Data Science, ARC Centers of Excellence on Integrative Brain Function and Robotics. It currently is investing in HCI facilities for developing new mobile and multimodal/multisensor interfaces, analyzing human multimodal interaction, and predicting users' cognitive and health status.

Melbourne is rated the #1 city worldwide for quality of life (Economist & Guardian, *http://www.economist.com/blogs/ graphicdetail/2016/08/daily-chart-14* and *https://www.theguardian.com/australia-news/2016/aug/18/melbourne-wins-worlds-most-liveable-city-award-sixth-year-in-a-row*), with excellent education, healthcare, infrastructure, low crime, and exceptional cuisine, culture, and creative design. It is renowned for its dramatic coastline, parks, wildlife, and wine region.

Position & Compensation:

This position is 3 years full-time, with competitive salary (Academic level B: *http://adm.monash.edu.au/ enterprise-agreements/academic-professional-2014/s1-academic-salary-rates.html*) and benefits (17% superannuation retirement fund), relocation and seed funds. Start date negotiable. For enquiries email *Oviatt@ incaadesigns.org.*

To apply:

Submit online at *http://careers. pageuppeople.com/513/cw/en/job/571150/ research-fellow-multimodal-interfaces-behaviour-analytics* with (1) cover letter (indicating date of availability); (2) CV with publications, research and teaching interests, 3 references with email/phone contact; (3) graduate transcripts; (4) 3 publications. Monash has a Women in IT Program, and welcomes female, minority and international applicants.

Montana Tech

Assistant Professor-Computer Science

DUTIES:

The Department of Computer Science at Montana Tech is seeking qualified applicants for a tenure-track position at the Assistant Professor level with expertise in software engineering and/or computer science starting on August 15th, 2018. Responsibilities include teaching software engineering and computer science at all undergraduate levels, active scholarship, and service to the department and college. Salary is commensurate with qualifications and experience.

REQUIRED QUALIFICATIONS:

Ph.D. or ABD (completion of Ph.D. required within one year of hire) in Software Engineering, Computer Science, and/ or a closely related field with significant experience in the aforementioned areas.

REQUIRED SKILLS:

Excellent oral and written communication skills.

PREFERRED QUALIFICATIONS:

(1) prior university-level teaching experience, (2) evidence of ongoing scholarly activity, (3) experience in data science and/or the statistical analysis of big data, (4) networks/security/web science, and/or (5) software engineering.

Below is the link for to apply:

http://montanatechuniversity.applytojob. com/apply

National University of Singapore

Sung Kah Kay Assistant Professor in All Areas of Computer Science

The Department of Computer Science at the National University of Singapore (NUS) invites applications for the Sung Kah Kay Assistant Professorship. Applicants can be in any area of computer science. This prestigious chair was set up in memory of the late Assistant Professor Sung Kah Kay. Candidates should be early in their academic careers and yet demonstrate outstanding research potential, and strong commitment to teaching.

The Department enjoys ample research funding, moderate teaching loads, excellent facilities, and extensive international collaborations. We have a full range of faculty covering all major research areas in computer science and boasts a thriving PhD program that attracts the brightest students from the region and beyond. More information is available at *www.comp.nus. edu.sg/careers*

NUS is an equal opportunity employer that offers highly competitive salaries, and is situated in Singapore, an English-speaking cosmopolitan city that is a melting pot of many cultures, both the east and the west. Singapore offers high-quality education and healthcare at all levels, as well as very low tax rates.

Application Details:

- Submit the following documents (in a single PDF) online via: *https://faces. comp.nus.edu.sg*
- A cover letter that indicates the position applied for and the main research interests
- Curriculum Vitae
- A teaching statement
- A research statement
- Provide the contact information of 3 referees when submitting your online application, or, arrange for at least 3 references to be sent directly to *csrec@comp.nus.edu.sg*
- Application reviews will commence immediately and continue until the position is filled
- If you have further enquiries, please contact the Search Committee Chair, Weng-Fai Wong, at *csrec@comp.nus. edu.sg*

NEC Laboratories America

Researcher

The Optical Networking and Sensing Research Department of NEC Laboratories America, located in Princeton, NJ, is seeking a Researcher. The successful candidate will participate in the development of data-driven social infrastructure solutions, should be able to work independently and as part of a team, show critical thinking and fast learning ability in their approach to problem solving.

Job Duties:

- Research, develop, train, implement and evaluate machine learning models and new algorithms

- Search for and process data from the various sensing and IoT hardware

- Understand and leverage new data sources and integrate traditional structured data with unstructured data from physical and social media

- Assess business /customer requirements and translate them into data acquisition hardware and software specifications

- Develop data quality measures of recorded data and a framework that assesses data quality and cleanse data

- Collaborate closely with data scientists, engineering teams, data architects, platform developers to develop data-integration solutions

Required Skills and Knowledge:

- PhD in Computer Science, Statistics, or related field

- Extensive research and development experience in data mining and machine learning

- Strong mathematical, statistical and programmatic knowledge

- Advanced signal processing and information theory background

- Solid understanding of design and analysis of algorithms and data structures

- Experience with large scale optimization and learning

- Experience with various deep learning libraries and data visualization platforms

- Development skills in programming languages such as C, C++, C#, Objective C, or JavaScript

- Development skills in modeling languages such as Matlab, R, etc.

- Proficient knowledge of Linux environment

- Debugging and troubleshooting the real-time issues

- Independently operating hardware platform and running system testing

For consideration, submit your CV and research statement through our career center at *https://www.appone.com/MainInfoReq.asp?R_ID=1715660.*

EOE-M/F/V/D

Northeastern Illinois University

Assistant Professor

The Computer Science Department of Northeastern Illinois University in Chicago invites individuals to apply for a tenure-track, assistant professor position, starting August 2018. A Ph.D. in Computer Science or closely related field is required. We will consider applicants from all areas of computer science, especially: Software Engineering, Cryptography, Security & Systems Research, Operating Systems, and Distributed Systems. Review of applications will begin on February 15, 2018 and will continue until the position is filled. AA/EOE. See: *http://cs.neiu.edu/*

Northeastern Illinois University is an Equal Opportunity/Affirmative Action Employer and invites applications from Women, Minorities, Veterans and Persons with Disabilities, as well as Other Qualified Individuals. Northeastern Illinois University's positions are contingent upon the University's receipt of its State of Illinois appropriation.

Northeastern University

Lecturer/Asst/Assoc/Full Teaching Professor-Align MS in CS at the Charlotte Campus

The College of Computer and Information Science (CCIS) at Northeastern University invites applications for positions at the rank of Lecturer/Assistant Teaching Professor/Associate Teaching Professor/Full Teaching Professor in the Computer

Science Align Program at our campus in Charlotte beginning in Summer 2018, September 2018 or January 2019.

We are seeking highly-motivated individuals committed to excellence in teaching. Full-time appointments at all ranks are renewable, career-focused non-tenure-track positions with responsibilities in teaching and service. Opportunities for research and scholarship are possible with course releases to make time for scholarship. Primary responsibilities include teaching graduate courses in the Align MS in CS Program (see below for a description). We are searching across all areas of computer science and data science. Classes primarily meet in the evening and are small 10-40 students. Teaching faculty are supported with TAs and graders. The successful candidate will create course content and materials, and collaborate closely with colleagues across all Northeastern University campuses (Boston, Charlotte, Seattle and Silicon Valley) to develop new academic programs and relationships with the business community. Student advising and service to the college and university are an integral component of the position. Northeastern University is a global university recognized by our renowned co-op program and our focus on experiential learning.

About the Align Program: Align's mission is to close America's tech diversity gap. To do so, we are reinventing Computer Science post-graduate education by scaling an innovative Experiential Masters in Computer Science for Non-Computer Science Majors.

Scaling Align is a primary initiative of Northeastern University's College of Computer and Information Science.

The Challenge
Women represent more than 50% of all bachelor's degree recipients but only 18% of CS graduates. Similarly, underrepresented minorities represent 25% of all bachelor's degree recipients but just 10% of CS graduates. By closing these gaps, we will not only address a major economic issue, but also a profound issue of social equity and inclusion.

Our Solution
The Align MS in CS program differs from typical MS in CS programs in several key ways. It is:

- Designed for students who did not earn an undergraduate degree in CS
- Coupled with Northeastern's famous co-op program to provide a paid 6-8 month work experience in one of the college's network of 500+ corporate partners
- Taught at night year-round so students can keep up with other commitments and finish in 2.5 years
- Offered locally at tech hubs across the country (Boston, Charlotte, Seattle, and Silicon Valley, with at least one more to come)

Our 4.5 year pilot to date has already demonstrated a graduation rate 91%, with 100% employment and average salaries exceeding $100,000. Unlike code academies, our graduates are prepared

for tech leadership career paths. Unlike undergraduate programs, the program takes only 2.5 years to complete. Most importantly, more than half of our graduates will be women and more than 25% will be underrepresented minorities. It is the ideal onramp for bringing a diversity of race, gender and thought to America's tech workforce. In January 2018 we welcomed our Charlotte inaugural cohort of Align students. We will focus on building a second robust cohort for Fall of 2018 and continue to grow the program. Note that classes are given in the evening and run year round. Our plan is to grow the Charlotte campus to serve over 200 students per year.

Please learn more about the Align program at our *website*.

Qualifications: Candidates must hold a PhD in Computer and/or Information Science from an accredited institution by the start date. Teaching experience is preferred, but we will consider fresh PhDs. Rank of appointment at the Lecturer, Assistant Teaching Professor, Associate Teaching Professor, or Full Teaching Professor level will be determined on prior teaching experience and will be discussed with candidates during the interview process. Successful candidates will have demonstrated an expert grasp of knowledge of the field and be creative in their approach to teaching in an environment of experiential education. Strong written, oral and interpersonal skills are required in order to communicate effectively with diverse and exceptional

students in person and online. Successful applicants are will to teach in the evening and during summer sessions if appropriate.

For more information about the College, please visit *http://www.ccs.neu.edu.*

To apply: Please submit a cover letter of interest highlighting teaching accomplishment and relevant professional experience, a curriculum vitae, and the names and contact information of at least three references.

Compensation is commensurate with qualifications and includes an outstanding benefits package.

Northeastern University is an Equal Opportunity, Affirmative Action Educational Institution and Employer, Title IX University. Northeastern University particularly welcomes applications from minorities, women and persons with disabilities. Northeastern University is an E-Verify Employer.

Northeastern University

Location: Boston Main Campus, Silicon Valley, Seattle, Charlotte

Position Summary:

The College of Computer and Information Science (CCIS) at Northeastern University invites applications for positions at the rank of Lecturer/Assistant Teaching Professor/Associate Teaching Professor/ Full Teaching Professor in the Computer Science ALIGN Program at our main campus in Boston and for our regional campuses located in Silicon Valley, Seattle and Charlotte, beginning in September 2018 or January 2019. The ALIGN Program

offers intellectually curious students who did not study computer science as an undergraduate from all backgrounds (technical to liberal arts) the opportunity to earn a Master of Science in Computer Science (MSCS) and to transition to successful careers in the dynamic field of computer science. Students first take courses in a two semester sequence to give them the background necessary to move into the MS-level classes in computer science. This innovative program is in its 4th year and its graduates now have positions at top tech companies across the country. This program was designed to increase the diversity of thought and demographics in computer science

We are seeking highly-motivated individuals committed to excellence in teaching. Full-time appointments at all ranks are renewable, career-focused non-tenure-track positions with responsibilities in teaching and service. Primary responsibilities include teaching graduate courses in the Computer Science ALIGN Program. The successful candidate will create course content and materials and collaborate with colleagues to develop new academic programs and relationships with the business community. Student advising and service to the college and university are an integral component of the position. Opportunities for research and scholarship are possible. Northeastern University is a global university recognized by our renowned co-op program and our focus on experiential learning. We are experiencing dramatic growth in enrollment and academic innovation. The College of Computer and Information Science is one of the fastest growing colleges in the university.

Qualifications:

Candidates must hold a PhD in Computer and/or Information Science from an accredited institution by the start date. Teaching experience at the graduate level is strongly preferred. Rank of appointment at either the Lecturer, Assistant Teaching Professor, Associate Teaching Professor, or Full Teaching Professor level will be determined on prior teaching experience and will be discussed with candidates during the interview process. Successful candidates will have demonstrated an expert grasp of knowledge of the field and be creative in their approach to teaching in an environment of experiential education. Strong written, oral and interpersonal skills are required in order to communicate effectively with diverse and exceptional students in person and online.

For more information about the College, please visit *http://www.ccs.neu.edu.* For additional information about the ALIGN Program, please see *https://www.ccis. northeastern.edu/program/align-master-of-science-in-computer-science*

Additional Information: Please submit a cover letter of interest highlighting teaching accomplishments and relevant professional experience, a curriculum vitae, and the names and contact information of at least three references.

Boston Campus *Silicon Valley*

Seattle *Charlotte*

Compensation is commensurate with qualifications and includes an outstanding benefits package.

Northeastern University is an Equal Opportunity, Affirmative Action Educational Institution and Employer, Title IX University. Northeastern University particularly welcomes applications from minorities, women and persons with disabilities. Northeastern University is an E-Verify Employer.

NYU Tandon School of Engineering

Teaching/Industry Professor

The Department of Computer Science and Engineering (CSE) invites outstanding teachers to apply for positions at the levels of Assistant, Associate or Full Industry Professor in any areas of Computer Science, with particular emphasis on candidates who can teach systems-oriented courses at the undergraduate and master's degree levels.

The faculty and students of the CSE Department in the NYU Tandon School of Engineering are at the forefront of the high-tech start-up culture in New York City. The Department's research strengths include cyber security, big data analysis and visualization, game engineering, and theoretical computer science.

An Industry Professor's primary roles are teaching, mentoring and educational innovation, and the position may also entail some administrative work and outreach. The department offers BS degrees in Computer Science and in Computer Engineering, MS degrees in Computer

Assistant Professor of Computer Science

The Pennsylvania State University at Harrisburg, School of Science, Engineering and Technology, invites applications for a tenure-track Assistant Professor of Computer Science effective Fall Semester 2018. The position requires a Ph.D. in Computer Science. Applicants with experience and research interests in software engineering/software design, compilers, or principles of programming languages will be given priority. Individuals with other areas of research interest may also be considered. Candidates will be evaluated on teaching and research potential. Salary level commensurate with qualifications and experience.

Faculty are expected to teach courses for the B.S. and M.S. degrees in Computer Science, pursue scholarly research and publication, contribute to curriculum development, participate in University/professional service activities, advise undergraduate and graduate students, and serve on graduate level degree committees. For information on Penn State Harrisburg and the department please visit our websites at hbg.psu.edu and cs.hbg.psu.edu. Review of applications will begin on March 1, 2018 and continue until the position is filled. To apply, please submit a cover letter, curriculum vitae, statement of teaching philosophy and research interests, and the names and contact information of three references.

Apply online at **http://apptrkr.com/1167628**

CAMPUS SECURITY CRIME STATISTICS: For more about safety at Penn State, and to review the Annual Security Report which contains information about crime statistics and other safety and security matters, please go to http://www.police.psu.edu/clery/, which will also provide you with detail on how to request a hard copy of the Annual Security Report.

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.

Science and in Cybersecurity, and PhD degrees in Computer Science, as well as several minors. Industry Professors are multi-year non-tenured positions with renewable contracts.

Although Industry Professors' primary responsibilities are in teaching, qualified applicants may have opportunities to participate in the department's vibrant research community.

Postdoctoral Research Scientist: Computational Linguistics

We invite applications for an interdisciplinary postdoctoral position with specialization in computational linguistics and/or technical or scientific methods in language science at Rochester Institute of Technology (RIT), in Rochester, NY. This is a one-year position with opportunity for renewal. The applicant should demonstrate a fit with our commitment to collaborate with colleagues across the university on research initiatives in Personalized Healthcare Technology. In addition to engaging in research projects, the right candidate will be able to teach a total of two courses per year - one course each in the College of Liberal Arts and the Golisano College of Computing and Information Sciences at RIT. The teaching assignment may be Computer Science Principles, Introduction to Language Science, Language Technology, Introduction to Natural Language Processing, Science and Analytics of Speech (acoustic and experimental phonetics), Spoken Language Processing (automatic speech recognition and text-to-speech synthesis), Seminar in Computational Linguistics, or another course depending on background.

Required Minimum Qualifications
- PhD., with training in Computational Linguistics, Linguistics, or an allied field
- Advanced graduate coursework in computational linguistics (natural language processing or speech processing), linguistics, or language science broadly
- Publication record and plan for research and grant seeking activities
- Ability to contribute in meaningful ways to our commitment to cultural diversity, pluralism, and individual differences

Required Application Documents
Cover Letter, Curriculum Vitae or Resume, List of References, Research Statement

How To Apply
Please apply at: **http://apptrkr.com/1166210**. Click the link for search openings and in the keyword search field, enter the title of the position or 3599BR.

Qualifications: Candidates must have an M.S. degree in computer science or a related discipline and show excellence in teaching and mentoring. A Ph.D. is preferred. Salary is competitive and commensurate with experience and expertise.

Application Instructions
Candidates should apply by submitting a cover letter, C.V., teaching statement, and three references. All application materials should be submitted electronically to *https://apply.interfolio.com/48695*.

Purdue University

Director, Center for Education and Research in Information Assurance and Security (CERIAS), Discovery Park

Purdue University invites applications and nominations for the position of Director of the Center for Education and Research in Information Assurance and Security (CERIAS) in Purdue's Discovery Park.

CERIAS is widely recognized as a global leader for multidisciplinary research and education in cyber- and cyber-physical system assurance, security, resiliency, and privacy. CERIAS brings together world-class faculty, staff, and students to address the evolving concerns surrounding computing, data, communications and the digitally connected world. It was launched from Purdue's College of Science 20 years ago as one of the "Original Seven" DHS/NSA centers for academic excellence in information assurance.

Discovery Park – where disciplines converge to solve global challenges – is internationally recognized as a leader in interdisciplinary research, distinguished by a convergence of physical, life, and engineering sciences, along with cyber and data science, advanced digital technologies and the social sciences and humanities. CERIAS-associated research intersects all areas of Discovery Park's strategic themes. As a crosscutting element of Discovery Park (DP), CERIAS will work with all of DP's centers and institutes, and across all of Purdue University, to build on its extensive track record, and expand its visibility gaining access to new collaborative

opportunities with Purdue faculty and external partners.

CERIAS has a robust external partnership program that encourages industry collaboration on, and feedback to, research and educational initiatives. Through this program, the Center helps drive current commercial technology and influence relevant research, education and training of Purdue University students from 18 different academic departments.

The next director must have the vision and ability to foster successful partnership between CERIAS and other university assets to create new interdisciplinary activities of national and international distinction. The CERIAS director will launch new initiatives at the intersection of cyber-/cyber-physical security, global health, sustainability and defense to leverage new opportunities for funding by federal agencies and commercial industry. The director will be responsible for defining and executing the overall mission of the Center, including establishing and implementing a strategic plan to position Purdue as a global leader in targeted areas.

The director will report to the Chief Scientist and Executive Director of Purdue's Discovery Park. The director will provide leadership related to opportunity capture, execution and evaluation, and relationship management of internal and external stakeholders. The director will demonstrate a commitment to excellence in teaching. The director interacts routinely with other Discovery Park Center Directors and staff, the Executive Vice President for Research and Partnerships, College Deans, and

faculty leaders conducting research in all related areas.

The candidate's distinguished career accomplishments must be suitable to hold a tenured-faculty position in Computer Science at Purdue University. The candidate must possess an understanding of government and industry relations and have past administrative/policy experience working in or with a higher education environment. Individual must be able to obtain and maintain a U.S. Government Security clearance. A Ph.D. in computer science or related fields is required.

To receive full consideration, submit a letter of interest that outlines qualifications and vision for the position, three references and a curriculum vita. All documents and questions must be directed electronically to *dpcerias@purdue.edu.*

Full review of applications will commence January 15, 2018; applications will be accepted until the position is filled. Purdue University's Discovery Park is committed to advancing diversity in all areas of faculty effort, including scholarship, instruction, and engagement. Candidates should address at least one of these areas in their cover letter, indicating their experiences, current interests or activities, and/or future goals to promote a climate that values diversity and inclusion. A background check is required for employment in this position.

Purdue University is an EOE/AA employer. All individuals including minorities, women, individuals with disabilities and veterans are encouraged to apply.

Stanford University

Department of Computer Science

The Department of Computer Science at Stanford University invites applications for an educationally-focused faculty position. The responsibilities of the Assistant Professor of Computer Science Education will include: teaching classes (typically three or four courses, depending on class size, during the three quarters of the regular academic year), working to develop CS undergraduate curriculum, and involvement in the broader CS education community (e.g., research and/or leadership in CS education). The appointment has an initial term of three years with the possibility of reappointment of an additional three years. This position is eligible for promotion into the non-tenure (Teaching) faculty line. After completion of the five-year term as Associate Professor (Teaching), the candidate will be considered for promotion to Professor (Teaching). Experienced candidates with an already established reputation and national visibility in computer science education may apply for a senior appointment (Associate or Full Professor (Teaching)), commensurate with level of experience. Appointments at the level of Associate or Full Professor (Teaching) may be for a continuing term.

Candidates must have completed (or be completing) a Ph.D. in computer science or a closely related discipline, and have a strong commitment to teaching and advancing computer science education (broadly defined). Further information about the Computer Science Department

can be found at *http://cs.stanford.edu.* The School of Engineering website may be found at *http://soe.stanford.edu.*

Applications should include a cover letter, curriculum vita, teaching statement, material relevant to evaluating the applicant's teaching abilities (if available), and the names and contact information of three references. Please apply online at:

https://www.applyweb.com/cgi-bin/ app?s=STANFAC

You will need to create a CollegeNet account if you do not already have one. Questions should be directed to, Search Committee Chair, c/o Laura Kenny-Carlson, via electronic mail to *search@cs.stanford.edu.* Applications will be accepted until March 19, 2018.

Stanford is an equal employment opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, protected veteran status, or any other characteristic protected by law. Stanford also welcomes applications from others who would bring additional dimensions to the University's research, teaching and clinical missions.

Swarthmore College

Computer Science Lab Lecturer

The Department of Computer Science is currently accepting applications for a Lab Lecturer. The Lab Lecturer position is full

time during the academic year (Fall and Spring semesters) with summers off. The start date is August 15, 2018.

The Lab Lecturer position is an Instructional Staff position at the college. The responsibilities of the position include, but are not limited to: teaching lab sections of the introductory courses in the Computer Science Department; working with faculty to develop lab assignments for the introductory courses; creating lab assignment write-ups and documentation on tools used in introductory labs; supporting faculty in creating and setting up lab code examples, documentation, and software tools for lab work; lab grading and coordinating student graders; and holding regular office hours and helping students in the lab during open lab hours. More information about the Computer Science Department can be found on our website at *www.cs.swarthmore.edu.*

Swarthmore College is a small, selective, liberal arts college located 10 miles outside of Philadelphia. The Computer Science Department offers majors and minors at the undergraduate level.

A master's degree or Ph.D. in computer science or a related field with extensive computer science background is required. Prior teaching experience at the college level is preferred. The strongest candidates will be expected to demonstrate a commitment to creative teaching that speaks to and motivates undergraduates from diverse backgrounds.

Applications should include a curriculum vita, a teaching statement, and two letters

of reference that speak to the candidate's teaching ability.

Applications are being accepted online at *http://apply.interfolio.com/48652.* Applications will continue to be accepted until the position is filled.

Swarthmore College actively seeks and welcomes applications from candidates with exceptional qualifications, particularly those with demonstrable commitments to a more inclusive society and world. Swarthmore College is an Equal Opportunity Employer

Towson University

Tenure Track Assistant Professor

Tenure-track, 10-month Assistant Professor position in the Department of Computer and Information Sciences beginning August 2018. PhD, or comparable terminal degree, in Computer Science or a related field. Focus of position on Data Science and Analytics. Candidates with expertise in data mining, machine learning, deep learning and big data analytics are encouraged to apply.

https://www.towson.edu/ provostbudgetoffice/documents/3133_ fcsm_cosc_asst_prof.pdf

University at Albany

Professor of Practice and Lecturer Positions in Computer Science

The Computer Science Department at the University at Albany, SUNY, is seeking

a number of full-time Professors of Practice and Lecturers, to begin Fall 2018. Positions are three-year, renewable, 10 month appointments.

The Computer Science Department at University at Albany offers bachelors and masters degrees, a combined BS/MS, a computer science minor, and a doctoral program that prepares students for research careers as a creative scholar or industrial scientist. Professors of Practice and Lecturers are integral to the Department's teaching mission, which now includes a dual degree program just launched in Computer Science with Chongqing University of Posts and Telecommunications in the beautiful Yangtze River Valley of China. Successful applicants will teach in the program core both at UAlbany and, every second or third semester, at Chongqing – with additional compensation and all expenses covered. Courses at Chongqing may be from 6 to 12 weeks and may be taught entirely in the classroom, entirely online, or in some combination. All instruction in China will be in English and will include substantial TA support. A variety of courses must be covered including, but not limited to, programming and data structures, software engineering, programming languages, compiler design, operating systems, databases, data analytics, discrete math, and related topics. Professors of Practice and Lecturers are expected to commit to excellence in teaching, and to constant review and improvement of the pedagogy they use to engage and support student learning.

Requirements:

For the title of Professor of Practice (Lecturer), a minimum Ph.D. (MS) degree in Computer Science or a related discipline from a college or university accredited by the U.S. Department of Education or an internationally recognized accrediting organization is required. Prior college/university teaching experience is preferred. Responsibilities are predominantly teaching (base three-four teaching load), combined with university and department-level service. Professors of Practice may play an active role in ongoing program and course development.

Applicants must submit the following documents: Curriculum Vitae, cover letter, a statement of teaching philosophy, sample syllabi, and names and contact information for at least three references. Copies of university transcripts showing computer science courses taken are also requested.

To apply for this position please visit *https://albany.interviewexchange.com/candapply.jsp?JOBID=92227#pageTop*

Questions regarding the position may be addressed to *CSLecturerSearch@albany.edu*

For additional information about the department, please visit *http://www.cs.albany.edu/*

University of Amsterdam

Postdoctoral Bioinformatician-Understanding and Modulating Cancer Stem Cell Fitness

Position

This position is for an ambitious postdoctoral bioinformatician with a strong interest for next-generation sequencing data processing and analysis. You will work in an interdisciplinary team, to answer fundamental questions in cancer biology. In support to "wet-lab" scientists, you will implement existing or build custom pipelines to process NGS data, such as GROseq, HiC, RNAseq and ChIPseq.

Topics of study in our lab range from unravelling new regulatory molecules that modulate cancer stem cell functions (e.g. lincRNAs, eRNAs), studying the plasticity of cancer stem cells, the dynamics of stem cells during tumor development, and the development of improved therapies for colorectal cancers.

See for key publications: Léveillé N. et al. Nat. Commun. 2015, Melo CA et al. Mol Cell 2013, van der Heijden et al. Nat Commun. 2016, Vermeulen et al. Science 2013, De Sousa E Melo et al. Nature Medicine 2013, Guinney et al. Nature Medicine 2015, Bijlsma et al. Nature Reviews Gastroenterology and Hep. 2017. The position is financed by an ERC starting grant.

What we ask
- A PhD degree in Bioinformatics or equivalent

- A demonstrated ability to perform high-level biomedical research

- You are able to function well both in a team as well as independently, and possess good communication skills

- Experience with NGS data processing and analysis is a prerequisite

- You are ambitious and eager to perform top research!

What we offer

- A fulltime (36-hour/week) 4-year position as a Postdoc;

- Opportunity to supervise PhD students

- Terms of employment according to University Medical Center collective agreements (UMC-CAO);

- You will be employed by AMC Medical Research BV;

- A gross monthly salary in scale 10 ranging from EUR 3185,- to EUR 4194,- based on qualifications and experience;

- Vacation allowance of 8% and an allowance of 8.3% of the gross yearly salary payable at the end of the year.

Department

We are offering a position in the Laboratory for Experimental Oncology (LEXOR) within the Center for Experimental and Molecular Medicine at the Academic Medical Center, Amsterdam. In this laboratory, a team of over 30 scientists studies the biological aspects of cancer. A wide array of techniques and systems are used to better understand the mechanisms driving tumor development, -progression, and resistance against therapy.

Contact

For more information please contact Prof. Dr. Louis Vermeulen, *l.vermeulen@amc.uva.nl*.

University of Arkansas
Professor of Data Sciences

The University of Arkansas is seeking to fill the position of Professor of Data Sciences. This position leads research in the broad areas of big data, data analytics, data mining, visual analytics, and computational science. The position requires an excellent track record in scholarship and funding, and the ability to provide evidence of high scholarly productivity through publication and service, as well as having a strong interest in teaching, mentoring students, and supporting research and curricular development in the areas of data science.

For more information, please visit: *https://jobs.uark.edu/postings/25354*.

University of British Columbia, Vancouver
Lecturer – UBC Master of Data Science Program

The University of British Columbia invites applications for a Lecturer for the Master of Data Science Program, a collaborative effort of the *Department of Computer Science* and the *Department of Statistics*, within the *Faculty of Science*.

The Lecturer will:

- Be the primary instructor for a subset of modules within MDS and provide instructional support to other faculty instructors for other modules.

- Identify and develop instructional materials, including appropriate datasets, in collaboration with participating faculty.

- Work with MDS Directors and faculty to expand the MDS curriculum and keep it current.

- Mentor MDS students undertaking capstone projects and liaise with project partners.

- Foster a positive learning environment for MDS students and be the main continuous presence with the student cohort over the 10 months.

- Serve on the MDS admissions committee.

- Collaborate on Data Science education tasks with other groups at UBC such as the Undergraduate Program within the Department of Statistics, the Sauder School of Business' Master of Business Analytics program, etc.

- Supervise and assist in the recruitment of teaching assistants.

Applicants should hold a post-graduate degree (PhD preferred) in an area relevant to Data Science and have some background in Statistics. They should have experience in at least one of these areas and enthusiasm for all: practical data management and analysis; teaching at the postgraduate level; curriculum

development; R/Python/SQL; version control and other practices related to collaborative and reproducible scientific work.

We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority.

Apply to *info-mds@science.ubc.ca* with the contact information of 3 references by March 20, 2018.

Please see *https://www.stat.ubc.ca/lecturer-ubc-master-data-science-program* for more details.

University of Central Florida

Instructor or Lecturer in Information Technology

The Department of Computer Science at the University of Central Florida is seeking outstanding candidates for two Instructor or Lecturer positions to teach Information Technology courses. An earned master's degree in Computer Science or a closely-related discipline from an accredited institution is required. A Ph.D. from an accredited institution and college-level teaching experience are highly preferred. These are nine-month non-tenure-earning positions commencing August 8, 2018. A supplemental summer appointment may

be made following an assessment of performance and the teaching needs of the program.

A master's degree from an accredited institution in Computer Science or a closely related discipline is required for instructor rank. For the lecturer rank, a Ph.D. degree from an accredited

institution in Computer Science, Information Technology or a closely related discipline is required. The required degree must be earned by the time of the appointment.

The responsibilities of the Instructor or Lecturer will be to teach a full time academic load, which consists of up to four courses per

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UNIVERSITY OF SOUTH FLORIDA — COLLEGE OF ENGINEERING

The University of South Florida invites applications for faculty positions in
Computer Science and Engineering

Applications are invited for multiple tenure-track positions at all ranks in the Department of Computer Science and Engineering starting Fall 2018. Preference will be given to candidates in strategic research areas that have high funding potential from federal funding agencies including NSF, NIH, DARPA, etc. Research expertise in Artificial Intelligence including Machine Learning, Natural Language Processing, and Computer Vision, Augmented Reality, Big Data, Cloud and Distributed Computing, Neuromorphic Computing, or their intersection with security and privacy of computer systems is desired. Outstanding candidates in other areas may be considered. Truly outstanding senior candidates will be considered. Candidates should have an established record of outstanding-quality research publications and with potential for excellence in teaching. Candidates must have completed, or be near completion of, a Ph.D. in computer science, computer engineering, or a related discipline.

The Department of Computer Science and Engineering (http://www.usf.edu/engineering/cse/) has 25 tenure-track/tenured faculty members, ten instructors, five staff members/advisors, and offers B.S., M.S., and Ph.D. degrees, serving more than 800 undergraduate, 120 masters, and 85 PhD students. The department has a strong working relationship with the Florida Center for Cybersecurity. Currently CSE is leading a collaborative effort to establish a BS in Cybersecurity. Department ranks include ten NSF CAREER awardees, one National Academy of Inventors (NAI) Fellow, four IEEE Fellows, four IAPR Fellows, three AAAS Fellows, and three AIMBE Fellows. The Computer Engineering graduate program was ranked 48th among US public universities by US News and World Report (2016). USF CSE faculty members have 31 issued patents, own seven copyrights, and have executed eight license/option agreements between FY12-FY16.

The University of South Florida System is a high-impact, global research system dedicated to student success. The USF System includes three institutions: USF; USF St. Petersburg; and USF Sarasota-Manatee. The institutions are separately accredited by the Commission on Colleges of the Southern Association of Colleges and Schools. All institutions have distinct missions and their own detailed strategic plans. Serving over 48,000 students, the USF System has an annual budget of $1.6 billion and an annual economic impact of $4.4 billion. USF is a member of the American Athletic Conference.

With over 230 degree programs at the undergraduate, graduate, specialty and doctoral levels, including the doctor of medicine, there's something for everyone at USF. We believe in creating a talented, engaged and driven workforce through on-going development and career opportunities. We also offer a first class benefit package that includes medical, dental and life insurance plans, retirement plan options, tuition program and generous leave programs and more.

An application package should include a cover letter, curriculum vitae, statements describing research and teaching experience and goals, and the names and contact information of at least three references. Applicants must electronically submit the application packet to the following website: http://www.usf.edu/administrative-services/human-resources/careers/ (**Applicants search Job Opening ID# 14416**). Applications will be considered starting immediately until the positions are filled.

The University of South Florida is an Equal Opportunity/Equal Access/Affirmative Action Institution. Women and minorities are strongly encouraged to apply. Dual career couples with questions about opportunities are encouraged to contact the Department chair. To request disability accommodations in the application and interview process, please notify Khoa Dinh, the EOL Coordinator at (813) 974-9272.

UNIVERSITY OF SOUTH FLORIDA
COLLEGE OF ENGINEERING

The University of South Florida invites applications for instructor positions in

Computer Science and Engineering

The University of South Florida is creating the first BS in Cybersecurity program in Florida. This program will be centered in the Department of Computer Science and Engineering in collaboration with multiple other Departments and Colleges in the USF System. We are seeking full-time Instructor positions who can teach a broad range of core and elective courses at the undergraduate and graduate levels as part of this new program. This is an exciting opportunity to be part of the creation of a new program in a high-demand area. Candidates must have past experience in teaching in Computer Science or Information Technology. The University offers a promotion path for instructors. Salary will be commensurate with qualifications and experience. Candidates must have completed a PhD in computer science, computer engineering, information technology, or a related engineering area. Special emphasis is on candidates who can teach in areas related to cybersecurity. Experience in teaching online is desirable. Successful candidates are expected to start in spring 2018 or fall 2018.

The Department of Computer Science and Engineering (http://www.usf.edu/engineering/cse/) has 25 tenure-track/tenured faculty members, ten instructors, five staff members/advisors, and offers B.S., M.S., and Ph.D. degrees, serving more than 800 undergraduate, 120 masters, and 85 PhD students. The department has a strong working relationship with the Florida Center for Cybersecurity. Department ranks include ten NSF CAREER awardees, one National Academy of Inventors (NAI) Fellow, four IEEE Fellows, four IAPR Fellows, three AAAS Fellows, and three AIMBE Fellows. The Computer Engineering graduate program was ranked 48th among US public universities by US News and World Report (2016). USF CSE faculty members have 31 issued patents, own seven copyrights, and have executed eight license/option agreements between FY12-FY16.

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With over 230 degree programs at the undergraduate, graduate, specialty and doctoral levels, including the doctor of medicine, there's something for everyone at USF. We believe in creating a talented, engaged and driven workforce through on-going development and career opportunities. We also offer a first class benefit package that includes medical, dental and life insurance plans, retirement plan options, tuition program and generous leave programs and more.

An application package should include a cover letter, curriculum vitae, statement describing teaching experience and goals, and the names and contact information of at least three references. Applicants must electronically submit the application packet to the following website: http://www.usf.edu/administrative-services/human-resources/careers/ (**Applicants search Job Opening ID# 14647**). Applications will be considered starting immediately until the positions are filled.

The University of South Florida is an Equal Opportunity/Equal Access/Affirmative Action Institution. Women and minorities are strongly encouraged to apply. Dual career couples with questions about opportunities are encouraged to contact the Department chair. To request disability accommodations in the application and interview process, please notify Khoa Dinh, the EOL Coordinator at (813) 974-9272.

one-page statement of teaching interests and philosophy; and a list of at least three references, with addresses, phone numbers, and email addresses. When applying, have all documents ready to attach, as the system does not allow resubmittal or update.

Screening of applications will begin as soon as possible. For full consideration, please submit your application no later than March 8, 2018.

UCF is one of the nation's largest universities. An economic engine, UCF attracts and supports vital industry to Orlando. UCF's is at the center of the Florida High Tech Corridor, where industries include software, defense, space, simulation & training, and entertainment. Next to UCF is a thriving research park that conducts over $2 billion in funded research. Great weather, easy access to the seashore, one of the largest convention centers in the nation, and one of the world's best airports are just a few features that make Orlando an ideal location. Learn more about UCF at *http://www.ucf.edu/faculty.*

As an equal opportunity/affirmative action employer, UCF encourages all qualified applicants to apply, including women, veterans, individuals with disabilities, and members of traditionally underrepresented populations.

Candidates can direct any questions regarding these positions to *itsearch@ cs.ucf.edu.*

semester. The courses may include a variety of topics in our undergraduate Information Technology programs.

Other responsibilities include holding office hours, conducting required academic performance assessments, and

development of instructional content for course enhancement.

Applications must be submitted online at h*ttp://www.jobswithucf.com/ postings/52314* and should include a cover letter; a complete CV/resume; a

University of Central Florida, Orlando, FL.

Department of Computer Science Tenure-Track Faculty Position in Deep Learning at the Center for Research in Computer Vision (CRCV)

University of Central Florida is among the largest universities in the United States with a diverse student body of more than 64,000 students. The university offers more than 200 degree programs at its main campus in Orlando and more than a dozen satellite locations (*http://www.ucf.edu/faculty/*). The Center for Research in Computer Vision (CRCV) at UCF (*www.ucf.edu*) solicits applications for a tenure-track Assistant Professor position in the area of **Deep Learning.** CRCV (*http://www.crcv.ucf.edu*) is the world class leader in the computer vision research and related disciplines, including but not limited to the algorithmic aspects of deep learning and their applications in computer vision.

Qualifications

Candidates must have a Ph.D. degree from an accredited institution in an area appropriate to this position at the time of appointment. Candidates must have a strong research publication record, high potentials to initiate and obtain funding for their research programs, and the ability to effectively communicate with students in both large and small audiences.. Preferred candidates will have accomplishments showing the relevance of their research to deep learning. Faculty hired at CRCV will be tenured in the Department of Computer Science (*www.cs.ucf.edu*), College of Engineering and Computer Science (CECS)

at UCF and will be required to teach a maximum of two courses per academic year. The faculty at CRCV are expected to have vigorous programs of graduate student mentoring and are encouraged to involve undergraduates in their research.

This is a full-time, 9-month tenure-track position. Employment is conditional upon the timely completion of an approved I-9 (Employment Eligibility Verification Form). Candidates are expected to begin to work on August 8, 2018. Salary and a start-up package will be commensurate with qualifications. Candidates **must apply online** at *https://www.jobswithucf.com/postings/51488* and provide (a) cover letter, (b) curriculum vitae, (c) teaching statement, (d) research statement, (e) contact information of three professional references, and (f) three selected papers describing the candidate's original contribution in deep learning.

As an equal opportunity/affirmative action employer, UCF encourages all qualified applicants to apply, including women, veterans, individuals with disabilities, and members of traditionally underrepresented populations (*http://eeo.ucf.edu/documents/PresidentsStatement.pdf*). As a Florida public university, UCF makes all application materials and selection procedures available to the public upon request. For more information about this position, **please contact via** *facultysearch@crcv.ucf.edu.* Apply online at: *https://www.jobswithucf.com/postings/51488*

Note: Department of Mathematics (www.math.ucf.edu) and CRCV are coordinating in hiring individuals with research focus

in Deep Learning. The related positions in Department of Mathematics are in the following (https://www.jobswithucf.com posting ID: 37381)

University of Chicago

Lecturer

This position is still open as of February 8, 2018

The Department of Computer Science at the University of Chicago invites applications for the position of Lecturer. Subject to the availability of funding, this would be a two year position with the possibility of renewal. This position involves teaching in the fall, winter and spring quarters. The successful candidate will have competence in teaching and superior academic credentials, and will carry responsibility for teaching computer science courses and laboratories. Completion of all requirements for a Ph.D. in Computer Science or a related field is required at the time of appointment and candidates must have experience teaching Computer Science at the College level.

The Chicago metropolitan area provides a diverse and exciting environment. The local economy is vigorous, with international stature in banking, trade, commerce, manufacturing, and transportation, while the cultural scene includes diverse cultures, vibrant theater, world-renowned symphony, opera, jazz and blues. The University is located in Hyde Park, a Chicago neighborhood on the Lake Michigan shore just a few minutes from downtown.

Applicants must apply on line at the University of Chicago Academic Careers website at *http://tinyurl.com/kps37nl.*

To be considered an applicant, the following materials are required:

- Curriculum vitae with a list of publications

- One page teaching statement

- Three reference letters, one of which must address the candidate's teaching ability

Reference letter submission information will be provided during the application process.

Review of complete applications, including reference letters, will begin June 9, 2017, and continue until the position is filled.

The University of Chicago is an Affirmative Action/Equal Opportunity/ Disabled/Veterans Employer and does not discriminate on the basis of race, color, religion, sex, sexual orientation, gender identity, national or ethnic origin, age, status as an individual with a disability, protected veteran status, genetic information, or other protected classes under the law. For additional information please see the University's Notice of Nondiscrimination at *http:// www.uchicago.edu/about/non_ discrimination_statement/.* Job seekers in need of a reasonable accommodation to complete the application process should call 773-702-0287 or email *ACOppAdministrator@uchicago.edu* with their request.

University of Delaware

Computational Scientist

Location: Newark, Delaware
Deadline: Open until filled

Context of job:

The University of Delaware is leading a major node in the Rapid Advancement in Process Intensification Deployment (RAPID) Manufacturing Institute led by the American Institute of Chemical Engineers (AIChE) focusing on catalysis and reactors. Institutionally, RAPID reports to the Vice President for Research, Scholarship & Innovation.

Under limited supervision of the Director, the Computational Scientist will work with an interdisciplinary team of researchers who will integrate existing software components and build missing ones from available prototypes, build the cyber-infrastructure-enabled data hub and software to accelerate the petroleum, chemicals, energy, and food industries, and be responsible for providing infrastructure to enable modularization of RAPID applications and more broadly the chemical industry.

Major responsibilities:

- Deploy open-source software development environments supported by Agile SE methodology, open-source software tools and repositories, and code and documentation licenses and distribute it under the GNU license.

- Design standard interfaces and protocols for data and code integration and management by relaying on document creation, execution, data provenance, (re) usability, and reproducibility.

- Integrate new technologies such as Containers (i.e., Docker and Shifter); Cloud services (i.e., open-source XSEDE jetStream and commercial IBM Bluemix, AWS, and MS Azure); In-situ and in-transit data analysis (i.e., DataSpaces).

- Establish standard procedures with training opportunities e.g., data Carpentry and software

Carpentry; Software services and solutions.

- Leverage statistical modelling and programming skills to derive actionable insights out of large and/or structured, semi and unstructured datasets.

- Establish scalable, efficient, automated processes for model development, model validation, model implementation and large scale data analysis for deployment in the business

- Architect, build and prototype new data models and pipelines

- Work with distributed teams in developing predictive and personalized systems and create efficient algorithms to draw intelligence from existing data

- Collaborate with business and data owners to identify and provide technical solutions for key business use cases and POCs

- Independently execute data and analytics projects

- Research and evaluate new analytical methodologies and approaches

- Help expand organizational knowledge on analytics and machine learning techniques through training and mentoring.

- Perform miscellaneous job-related duties as assigned.

Qualifications:

- Master's degree with six years' experience in application programming and data analytics, or equivalent combination of education and experience. Degree in computational sciences, physics, applied mathematics, computer science, or a related scientific discipline preferred.

- Experience with numerical methods, parallel algorithms, MPI, a common scientific computing programming language (i.e. Fortran, C, and/or C++).

- Experience with parallel software development on large-scale computational resources.

- Excellent interpersonal skills, oral and written communication skills, organizational skills, and strong personal motivation.

- Ability to manage tasks within deadlines with high standards.

- Ability to work individually, as well as proactively partner with small teams of scientists during all stages of projects, including planning and execution.

- Advanced knowledge and experience in applying several modelling techniques which may include: solution of ordinary differential equations and algebraic equations, linear algebra, segmentation & clustering, mixed effect models,

response & lift modelling, experimental design, Bayesian statistics, text analytics, SVM, Neural Nets, Random Forest, Optimization Algorithms, Multivariate testing.

- Proven ability to sift through data, identify critical information, develop hypotheses, identify appropriate data science techniques and perform rigorous analyses to deliver new insights and solve business problems.

- Excellence in at least one of the common data science toolkits – R or Python. Experience in areas like Deep learning, AI, and NLP is a plus.

- Familiarity with relational databases and intermediate level knowledge of SQL.

- Experience using data visualization tools, such as D3.js, GGplot, etc is a plus.

- Experience with one or more prominent simulation codes (e.g. NWCHEM, ANSYS Fluent, GAMESS, Quantum Espresso, GROMACS, AMBER, VASP) is a plus.

- Experience with general purpose graphics processing units (GPGPUs), vectorization, developing and debugging massively parallel algorithms, and code performance profiling is a plus.

Equal Employment Opportunity
The University of Delaware is an Equal Opportunity Employer which encourages applications from Minority Group Members, Women, Individuals with Disabilities and Veterans. The University's Notice of Non-Discrimination can be found at http://www.udel.edu/aboutus/legalnotices.html

To Apply: http://www.udel.edu/faculty-staff/human-resources/careers/

University of Houston

Department of Computer Science Instructional Faculty Position

The Department of Computer Science at the University of Houston (*www.cs.uh.edu*) invites applications for a full-time Instructional Assistant Professor to begin in the 2018-19 academic year. Responsibilities will involve coordinating and teaching undergraduate lecture and laboratory courses in Computer Science along with engagement in curricular and instructional innovation, scholarship of teaching, student recruitment, advising and service.

The Department of Computer Science at the University of Houston is a vibrant unit with a growing stature offering undergraduate (B.S.) and graduate degrees (M.S. and Ph.D.) in Computer Science. The department has 26 tenured and tenure-track faculty members, 5 instructional faculty members and over 1200 students across its degree programs. Our department is committed to offering a stimulating program with strong emphasis on high quality, state of the art education and research in the highly diverse and cosmopolitan environment that the University of Houston and the city of Houston provide. Computer Science seeks outstanding candidates who hold a graduate degree in Computer Science, Computer Engineering, or a closely related field, and preference will be given to

candidates with a doctoral degree and who have innovative ideas for lecture and laboratory instruction. A proven teaching record at the university level is highly desirable.

The University of Houston is a Carnegie-designated Tier One research institution and is the flagship campus of a state-assisted system. As the fourth largest city in the U.S. and the most ethnically diverse city in the country, Houston is a vibrant city to live and work. It has multi-national industries, commercial centers, the largest medical center in the world, a robust arts community, professional sports, an entrepreneurial approach to new technologies and, is considered the world capital for petroleum exploration and energy. The Chronicle of Higher Education has named the University of Houston as one of the best places to work, and U.S. News & World Report listed UH as the No. 2 most racially/ethnically diverse university in the nation.

Candidate screening will begin on January 31, 2018 and to ensure full consideration applications must be received by February 28, 2018. Applications should be submitted electronically. Instructions can be found at: *http://jobs.uh.edu/postings/FAC000399*

The University of Houston is an ADVANCE institution, one of a select group of universities to receive NSF funds in support of our commitment to increase diversity and the participation and advancement of women in STEM. The department is seeking outstanding candidates with the potential for

exceptional research, excellence in teaching, and a clear commitment to enhancing the diversity of the faculty, graduate, and undergraduate student population. The University of Houston is an Equal Opportunity/Affirmative Action institution. Minorities, women, veterans and persons with disabilities are encouraged to apply.

University of Memphis

Assistant Professor Tenure Track

The Department of Computer Science at the University of Memphis is seeking candidates for multiple Assistant Professor positions beginning Fall 2018. Exceptionally qualified candidates in all areas of computer science are invited while candidates with core expertise in systems, architecture, data science, security & privacy, and software engineering and an interest in emerging and interdisciplinary applications such as smart health, smart cities, smart transportation, smart energy, and CS education are particularly encouraged to apply. Successful candidates are expected to develop externally sponsored research programs, teach both undergraduate and graduate courses and provide academic advising to students at all levels.

Applicants should hold a PhD in Computer Science, or related discipline, and be committed to excellence in both research and teaching. Salary is highly competitive and dependent upon qualifications.

The Department of Computer Science (*www.cs.memphis.edu*) offers B.S., M.S.,

and Ph.D. programs as well as graduate certificates in Data Science and Information Assurance, and an M.S. program in Bioinformatics (through the College of Arts and Sciences). The Department has been ranked 55th among CS departments with federally funded research. The Department regularly engages in large-scale multi-university collaborations across the nation. For example, CS faculty lead the NIH-funded Big Data "Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K)" and the "Center for Information Assurance (CFIA)". In addition, CS faculty work closely with multidisciplinary centers at the university such as the "Institute for Intelligent Systems (IIS)".

Known as America's distribution hub, Memphis ranked as America's 6th best city for jobs by Glassdoor in 2017. Memphis metropolitan area has a population of 1.3 million. It boasts a vibrant culture and has a pleasant climate with an average temperature of 63 degrees.

To apply, please visit *https://workforum.memphis.edu/.* Include a cover letter, curriculum vitae, statement of teaching philosophy, research statement, and three letters of recommendation. Direct all inquiries to Corinne OConnor (*cconnor2@memphis.edu*).

A background check will be required for employment. The University of Memphis is an Equal Opportunity/Equal Access/Affirmative Action employer committed to achieving a diverse workforce.

University of Virginia

Open Rank Teaching Faculty – Lecturer, Assistant, Associate, or Professor

The Department of Computer Science at the University of Virginia seeks applications for multiple non-tenure-track teaching faculty positions to begin in August 2018. Candidates can apply for these long-term positions at one of three professorial ranks or at one of three lecturer ranks. We seek applicants who share our interest and enthusiasm for excellence in computing science education.

The department is committed to creating and benefiting from an environment where a diversity of capable, inspired individuals interact and collaborate to learn and advance knowledge without barriers.

Candidates for a General Faculty position at the rank of Assistant, Associate or full Professor must have a PhD or equivalent experience in computer science or a related discipline. They must have an interest in and ability to teach a broad set of courses in our undergraduate curriculum. Course load will be two to three sections per semester consisting of a mix of upper- and lower-division courses. Graduate-level teaching will possibly be included. Faculty in professorial positions will have service responsibilities, and scholarship in computing or in CS education is expected for promotion. The department strongly values scholarship activities by General Faculty that have potential to advance computing education.

Candidates for a General Faculty position at the Lecturer, Senior Lecturer or Distinguished Lecturer rank must have a Master's degree or equivalent experience in computer science or a related discipline. Lecturers will usually teach two to three sections of core undergraduate courses but will also have the opportunity to teach more specialized upper-level courses. Lecturers may have fewer expectations for service activity, and will not be required to be engaged in scholarship.

These positions will have renewable three-year contracts. University policies insure that these positions benefit from opportunities for professional development. General Faculty receive departmental support for their teaching and scholarship activities.

The University of Virginia is annually ranked as one of the premier public institutions in the United States and is located in Charlottesville, a picturesque and vibrant small city perennially ranked as one of the best places to live in the U.S. More information about town, the school, faculty benefits, and other topics can be found at *http://uvacharge.virginia.edu/guide.html.*

To apply, visit *https://jobs.virginia.edu* and search on Posting Number 0621850. Complete a Candidate Profile online, attach a CV, a cover letter stating your interest in the position and your interests and experience in computing education, a statement of teaching philosophy, and contact information for 3 references.

Review of candidates will begin on November 15, 2017 and will continue until positions are filled.

For additional information about the positions or the application process, please contact Tom Horton via email at *horton@cs.virginia.edu* or by phone at 434 982-2217.

With one of the highest graduation rates of minority undergraduate students and one of the highest percentages of women engineering students among public universities, the University of Virginia is fundamentally committed to increasing the diversity of its faculty and staff. UVA is an affirmative action and equal opportunity employer. We welcome nominations of and applications from women, members of minority groups, veterans and individuals with disabilities. We also welcome others who would bring additional dimensions of diversity to the university's research and teaching mission. We believe diversity is excellence expressing itself through every person's perspectives and lived experiences.

University of Waterloo

Chair, Department of Management Sciences, Faculty of Engineering

Nominations and applications are invited for the position of Chair of the Department of Management Sciences at the University of Waterloo, home to 340 undergraduate students, 210 graduate students, and 26 faculty members. The Department offers a co-operative education undergraduate degree in management engineering, an option in management sciences for students enrolled in other engineering undergraduate programs, as well as Master of Applied

Science (with course-based, thesis-based, and online options) and Ph.D. programs, attracting the best and brightest students from across Canada and around the world. Our faculty members conduct research in diverse areas, including applied operations research, information systems and management of technology. The Department is growing, and several new faculty hires over the past few years have rejuvenated the Department's research agenda with emerging research areas such as healthcare, data analytics, large-scale data processing, human computer interaction, and energy markets. The Department has been taking several new initiatives such as a new graduate diploma program in data analytics. The new Chair will have the opportunity to guide future hiring and plan new initiatives that the Department will take in education and research. The Department has ambitions to advance its position and profile, in educating first rate engineers and high calibre researchers in management sciences.

The University of Waterloo is located at the heart of Canada's Technology Triangle, just west of Toronto; researchers benefit from close connections with Canada's highest concentration of high-technology and manufacturing companies, as well as University of Waterloo's unique intellectual property policy, which vests the rights with the inventor. The Faculty of Engineering was recently recognized as the top engineering school in Canada by Business Insider, and is ranked among the top engineering programs internationally by the ARWU Shanghai Rankings.

The Chair will lead the Department in implementing its strategic plan for education and research in the next four years, and will play a crucial role in shaping the direction of the Faculty of Engineering. The successful applicant will have: a PhD and the academic qualifications required for an appointment as a tenured full professor in the Faculty of Engineering; a distinguished record of teaching, research and university service; and demonstrated leadership ability. The successful applicant is expected to have or apply for an engineering license with the Professional Engineers of Ontario immediately upon appointment.

The salary range for the position is $150,000 to $200,000. Negotiations beyond this salary range will be considered for exceptionally qualified candidates.

Applications and nominations should include a detailed curriculum vitae, a brief statement of administrative, teaching and research experience, and references. The successful candidate is expected to take office by September 1, 2018. The committee will begin to review complete applications upon receipt, however, to ensure full consideration, applications must be received by March 31, 2018. The Search Committee is committed to respecting the confidentiality of applicants. Send applications and nominations to: Dr. Pearl Sullivan, Dean, Faculty of Engineering, University of Waterloo, 200 University Avenue West, Waterloo, Ontario, Canada N2L 3GI, *eo.eng@uwaterloo.ca*

The University of Waterloo respects, appreciates and encourages diversity and is committed to accessibility for persons with disabilities. We welcome applications from all qualified individuals including women, members of visible minorities, Aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority in the recruitment process.

Three reasons to apply: *http://uwaterloo.ca/fauw/why*. For more information about the Department of Management Sciences at the University of Waterloo, see *https://uwaterloo.ca/management-sciences/*.

University of Wisconsin-Milwaukee

Assistant Professor

The University of Wisconsin-Milwaukee (UWM) College of Engineering & Applied Sciences and School of Information Studies, invites applications for an *Assistant Professor position in Data Science*. The selected applicant will be interested in research and pedagogy in data science where information technology and computer science meet and interact. Possible research and teaching areas might include but are not limited to: machine learning, data mining, text mining, neural networks, visualization, factor analysis, structured prediction, heterogeneous data integration, cyber security, and network analysis.

For complete details, please go to: *http://jobs.uwm.edu/postings/27072*

Professional Opportunities

University of Virginia

Faculty, Simulation Engineering & Precision Learning

The School of Engineering and Applied Science & the Curry School of Education at the University of Virginia seek applicants for an open rank tenure-track/tenured faculty position in the area of simulation science, precision learning, adaptive learning systems, and associated technologies.

To apply, visit *jobs.virginia.edu/applicants/Central?quickFind=83738* and submit a cover letter, CV, statement of research interests, statement of teaching philosophy, and contact information for at least three references. These positions remain open until filled.

The University of Virginia is an equal opportunity and affirmative action employer. Women, minorities, veterans, and persons with disabilities are encouraged to apply.

Wellesley College

Instructor in Science Laboratory, Computer Science

Wellesley College invites applications for a full-time Instructor in Computer Science Laboratory, starting in the fall of 2018. Applicants should have a broad background in computer science and strong teaching, writing, and interpersonal skills. A Bachelor's degree in Computer Science or a related field is required (Master's degree preferred). Responsibilities include preparing and teaching laboratory sections in introductory and intermediate computer science courses. The position provides ample opportunity for curriculum development, exploration of new pedagogies, and student mentorship. We are especially interested in candidates whose teaching or service has prepared them to contribute to our commitment to diversity, inclusion, and equity within an academic setting. Information about the department can be found at *http://www.wellesley.edu/cs.*

Applicants should submit a cover letter, curriculum vitae, and statement about teaching experience and interests at *http://career.wellesley.edu/postings/1849.* The names/email addresses of three references are requested (the online application will request names/email addresses so that recommenders may submit the letters directly). Applications will be reviewed starting March 1, 2018.

Williams College

Visiting Professor of Computer Science

The Department of Computer Science at Williams College invites applications for two one-year visiting faculty positions beginning in the fall of 2018. Candidates should have a commitment to excellence in teaching and should have a Ph.D., or made significant progress towards completing a Ph.D., in computer science or a closely related discipline by September 2018. Successful candidates will teach a total of three courses with associated labs during the academic year.

This position is open to all areas of computer science. Visiting faculty will join eleven current members of the department in supporting a thriving and diverse undergraduate computer science major. The Department of Computer Science offers a congenial working environment, an excellent student body, and state-of-the-art facilities. Many opportunities exist for collaboration across disciplines, particularly with other faculty in the sciences.

Application Instructions
We welcome applications from members of groups traditionally underrepresented in the field, and applicants are encouraged to state in their cover letter how they will enhance the diversity of offerings and educational experiences if hired. Applications should also include a curriculum vitae, teaching statement, and three letters of reference, at least one of which speaks to the candidate's promise as a teacher. Application materials must be submitted electronically via Interfolio: *https://apply.interfolio.com/48557.*

Materials may be addressed to:

Professor Jeannie Albrecht, Chair
Department of Computer Science
Williams College
Williamstown, MA 01267

Review of applications will begin immediately and will continue until the positions are filled. Please direct all correspondence to *hiring@cs.williams.edu.* All offers of employment are contingent upon completion of a background check. Further information is available at *http://dean-faculty.williams.edu/prospective-faculty/background-check-policy.*