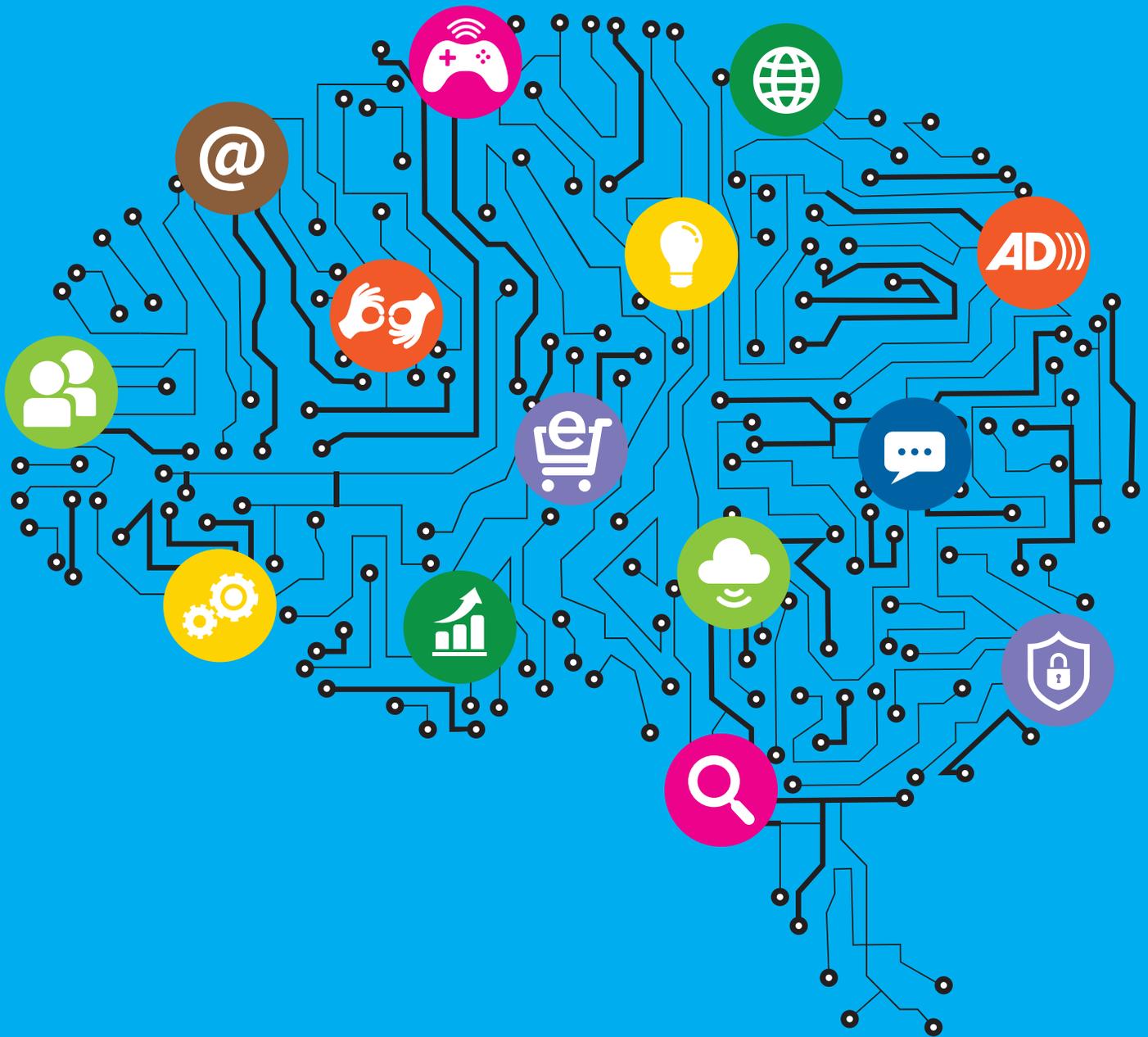


2017 ACM RICHARD TAPIA

CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

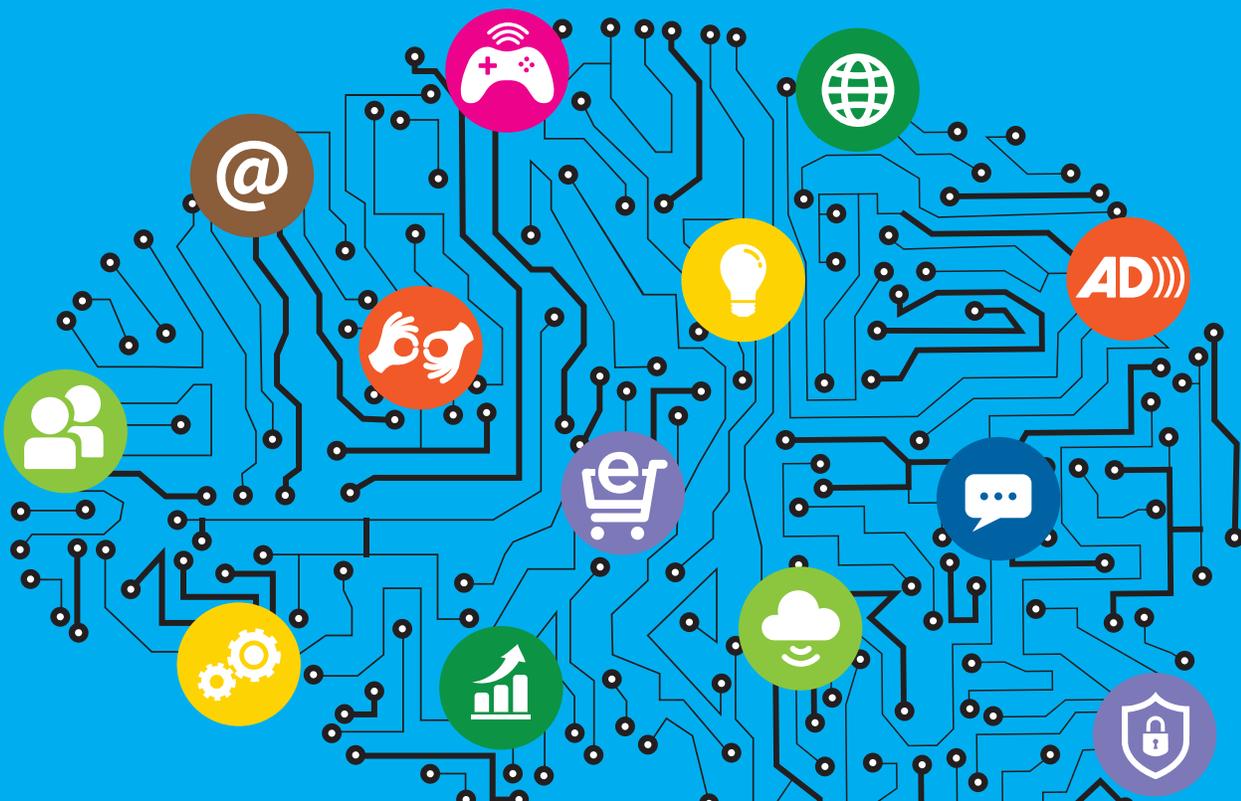
DIVERSITY: SIMPLY SMARTER!



PRESENTED BY CMD-IT | SEPTEMBER 20-23, 2017 | ATLANTA, GA

TABLE OF CONTENTS

2017 Tapia Conference Welcome	2
Featured Speakers	3
Meet Dr. Richard A. Tapia	4
2017 Richard Tapia Achievement Award	5
Schedule at a Glance	6
Daily Schedules	
Wednesday, September 20, 2017	10
Thursday, September 21, 2017	12
Friday, September 22, 2017	24
Saturday, September 23, 2017	34
Conference Organization	36
Tapia 2017 Conference Committees	37
Tapia 2017 Sponsors	39
Tapia 2017 Exhibitors	44
Exhibitor Map	45
Hyatt Regency Atlanta Site Map	46



2017 ACM RICHARD TAPIA

CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

SEPTEMBER 20–23, 2017 | ATLANTA, GA

The **2017 ACM Richard Tapia Celebration of Diversity in Computing Conference** is sponsored by the Association for Computing Machinery (ACM) and presented by the Center for Minorities and People with Disabilities in Information Technology (CMD-IT).

This year's conference, the eleventh meeting in a conference series that began in 2001, celebrates the technical contributions and career interests of diverse people in computing fields. Additionally, the conference strives to help all attendees—especially students—build vital connections that will serve them well both professionally and personally. The conference aims to provide an educational and supportive networking environment for underrepresented groups across the broad range of computing and information technology, from science to business to the arts to infrastructure.

Diversity: Simply Smarter! This year's conference evokes the basic yet irrefutable concept that diversity is simply the smarter choice. Whether we seek innovation, intelligence, creativity, strength or beauty of ideas, the best outcomes will come from a diverse set of perspectives, a diverse set of experiences, and a diverse set of people.

TAPIA



WELCOME

FROM THE GENERAL CHAIR AND PROGRAM CHAIR

From the 2001 inaugural edition of the **Richard Tapia Celebration of Diversity in Computing** in Houston, Texas, “Tapia” (as the conference has come to be known) has been the premier conference venue to celebrate the innovation, creativity and richness that abound when we engender participation from broad communities, diverse in every possible dimension. With each edition, the conference has grown: the technical, professional and civic offerings have grown; the number of attendees has grown; and most importantly, the impact the conference has on all fields of computing has grown! Hoping to preserve these important legacies, with the deepest senses of honor, obligation, commitment and passion, we present to you the Tapia '17, the 11th edition of the conference series.

Our theme for Tapia '17 is **“Diversity: Simply Smarter!”**. This year’s conference evokes the basic yet irrefutable concept that diversity is simply the smarter choice. Whether we seek innovation, intelligence, creativity, strength or beauty of ideas, the best outcomes will come from a diverse set of perspectives, a diverse set of experiences, and a diverse set of people. Computing has become an invariably critical instrument in every field, from the natural sciences to engineering, from health sciences to social sciences, from agricultural sciences to the humanities. Therefore, the health and viability of science and technology depend upon a strong, smart computing community — a diverse computing community.

Each year the number of submissions to the conference has grown, and Tapia '17 is no different. Thanks to record setting numbers of submissions, we hope you find this year’s offerings as exciting, educational, inspiring and diverse, as ever. We received a total of 71 Birds-of-a-Feather (BoFs), Workshop and Panel submissions. With the help of our Technical Program Chairs and committee members, we selected 17 BoFs, 18 Workshops and 5 Panels. Our popular Poster Reception will showcase 46 student posters (selected from 72 submissions). For the first time, alongside our poster program, Tapia hosts an ACM Student Research Competition (SRC), sponsored by Microsoft Research; 18 of the 46 student posters are participating in this ACM SRC. Our distinguished and inspirational lineup of plenary and banquet speakers remind us that it is important to pay attention to the role models amongst us and those that have come before us. Finally, we complement these program activities with a series of professional and development panels, and the Saturday Doctoral Consortium.

Tapia '17 is only made possible through the commitment, hard work and financial support of an appropriately diverse set of people and organizations. We are deeply grateful to the Tapia '17 Infrastructure and Technical Program Committees: these task forces that comprise volunteers from academia, research labs and industry form the heart and soul of the conference. We wish to acknowledge all sponsors of Tapia '17, especially our Platinum Sponsors and Gold Sponsors. In part, this sponsorship supported the attendance of over 200 scholarship recipients and 10 Doctoral Consortium participants.

We close this welcome address with a few sincere wishes. We wish that the Tapia '17 program meets and exceeds your every expectation; we wish that your conference experiences provoke and stimulate new thoughts and ideas that positively impact your professional and personal lives; we hope that you form connections, peer connections, mentor connections, protégé connections, connections that help you establish a powerful network of colleagues and friends. Lastly, we wish that each and every one of you realize your dreams and aspirations and help to render a brilliant, inventive, diverse new world of computing. Happy Computing!



Dorian Arnold
Tapia 2017
General Chair
Associate
Professor,
Department
of Computer
Science, Emory
University



Tao Xie
Tapia 2017 Program
Chair
Professor and Willet
Faculty Scholar,
Department of
Computer Science,
University of
Illinois at Urbana-
Champaign

Dorian Arnold
Tapia 2017 General Chair
Associate Professor, Department of
Computer Science, Emory University

Tao Xie
Tapia 2017 Program Chair
Professor and Willet Faculty Scholar,
Department of Computer Science, University
of Illinois at Urbana-Champaign

FEATURED SPEAKERS



FIRESIDE CHAT PLENARY PANELISTS



Fredrick Lee
Head of Information Security, Square



Catherine Kromkowski
Staff Technical Product Manager, GE



Rico Malvar
Microsoft Distinguished Engineer and the Chief Scientist, Microsoft Research

PLENARY KEYNOTE SPEAKERS



Edward Castillo
Research Scientist, Radiation Oncology Department, Beaumont Health Research Institute



Adrienne P. Felt
Staff Software Engineer, Chrome Metrics and Usable Security Team, Google



James Mickens
Associate Professor of Computer Science, Harvard University



Oyekunle Olukotun
Professor, Electrical Engineering and Computer Science, Stanford University



Avani Wildani
Assistant Professor, MathCS and Neuroscience, Emory University

BANQUET KEYNOTE SPEAKER



Randal Pinkett
Founder, Chairman and CEO, BCT Partners



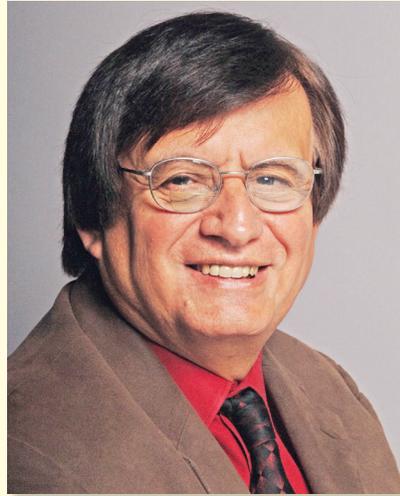
MEET DR. RICHARD TAPIA

Richard Tapia is a mathematician and professor in the Department of Computational and Applied Mathematics at Rice University in Houston, Texas. He is internationally known for his research in the computational and mathematical sciences and is a national leader in education and outreach.

Tapia's current Rice positions are University Professor (only the sixth individual afforded this title in the 100-year history of Rice University), Maxfield-Oshman Professor in Engineering, Director of the Center for Excellence and Equity in Education.

Tapia was born in Los Angeles to parents who separately emigrated from Mexico as young teenagers in search of educational opportunities for themselves and for future generations. The first in his family to attend college, Tapia went on to receive B.A., M.A. and Ph.D. degrees in mathematics from the University of California, Los Angeles. In 1967 he joined the Department of Mathematics at UCLA and then spent two years on the faculty at the University of Wisconsin. In 1970 he moved to Rice University where he was promoted to associate professor in 1972 and full professor in 1976. He chaired the department from 1978-1983. He is currently an adjunct faculty member of both Baylor College of Medicine and the University of Houston. Tapia has authored or co-authored two books and more than 100 mathematical research papers.

Among his many honors, Tapia was the first Hispanic elected to the National Academy of Engineering. In 1996 President Clinton appointed him to the National Science Board, where he served until 2002, and from 2001 to 2004 he chaired the National Research Council's Board on Higher Education and the Workforce. He has received the National Science Foundation's inaugural Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring; the Lifetime Mentor Award from the American Association for the Advancement of Science; the Distinguished Service



to the Profession Award from the Society for Industrial and Applied Mathematics; the Distinguished Public Service Award from the American Mathematical Society; the Distinguished Scientist Award from the Society for the Advancement of Chicanos and Native Americans in Science in addition to seven honorary doctorates. He was also the first recipient of the Computing Research Association's A. Nico Habermann Award for outstanding contribution to aiding members of underrepresented groups within the computing research community; named one of 20 most influential leaders in minority math education by the National Research Council; listed as one of the 100 most influential Hispanics in the U.S. by Hispanic Business magazine; and given the "Professor of the Year" award by the Association of Hispanic School Administrators, Houston Independent School District, Houston,

TX. In 2005, Tapia was recently honored with the 2017 American Association for the Advancement of Science's Public Engagement with Science Award for his remarkable career blending world-class scholarship, admirable mentoring and profound contributions to science, technology, engineering and mathematics education and public engagement. In 2014 Tapia was awarded the National Science Board's Vannevar Bush award for his extraordinary leadership, inspiration, and advocacy to increase opportunities for underrepresented minorities in science, distinguished public service leadership in science and engineering, and exceptional contributions to mathematics in the area of computational optimization. In 2011 President Barack Obama presented the National Medal of Science to Tapia for his pioneering and fundamental contributions in optimization theory and numerical analysis and for his dedication and sustained efforts in fostering diversity and excellence in mathematics and science education.

While at Rice, Tapia has directed or co-directed more underrepresented minority and women doctoral recipients in science and engineering than anyone in the country, and has led several programs that have brought recognition to the university's commitment to diversity. Tapia recently established the Rice Summer Tapia Camps for high school students and teachers that offer campers an opportunity to work alongside STEM students, interact with renowned scientists, and participate in project based collaborative learning activities.

Two professional conferences have been named in Tapia's honor, recognizing his contributions to diversity: Richard Tapia Celebration of Diversity in Computing conference and the Blackwell-Tapia Conference, whose founders described Tapia as a seminal figure who inspired a generation of African-American, Native American and Latino/Latina students to pursue careers in mathematics.

TAPIA ACHIEVEMENT AWARD



RICHARD A. TAPIA ACHIEVEMENT AWARD FOR SCIENTIFIC SCHOLARSHIP, CIVIC SCIENCE AND DIVERSIFYING COMPUTING

Manuel Pérez Quiñones was born and raised in San Juan, Puerto Rico. Born to a family of educators and public servants his high school year book called him a future lawyer. Life had other plans.

Manuel's research area of focus is in human-computer interaction. He has devoted almost 30 years of research in government labs (Naval Research Laboratory) and public academic institutions including University of Puerto Rico-Mayaguez, Virginia Tech, University of North Carolina, Charlotte and is a visiting professor at the US Naval Academy. Most recently he is the Associate Dean, College of Computing and Informatics and Professor, Department of Software and Information Systems at the University of North Carolina, Charlotte where his research has been in Personal Information Management where, with his students, he has studied how people manage email, how people re-find information, how to provide for prospective memory in daily information management tasks, and how people use calendars to keep track of structured and ill-defined information. He has published over 150 papers in leading journals, conference proceedings, magazines and book chapters. He has also published over 30 technical reports.

In addition to his research work, Manuel's focus has been in creating a more diverse culture in technology and academia. His work in diversity started as a Multicultural Fellow at Virginia Tech, a group that served in an advisory capacity to university administration in issues of diversity and equity. From there, he was involved in starting the Hispanic/Latino Faculty and Caucus at VT, co-author of the Graduate Student section of the Race and the Institution Task Force Report and eventually became director of the Office of Diversity Initiatives and Associate Dean of the Graduate School at Virginia Tech. In that office, MPQ became closely involved with different groups on campus, supporting events for African-Americans, Latinos, LGBTQ, Native American, and Women student organizations. He led the reorganization of the office of Diversity initiatives and hired the Director for the office. Many of the activities designed are still in place. Academically, Manuel created a course at Virginia Tech called GRAD5984 Topics on Diversity and Inclusion for a Global Society. This course was part of the Graduate Education Development Institute



(GEDI) certificate and was intended to train students from all disciplines to explore diversity and inclusion from many different professional lenses and perspectives. He offered the course three years in a row.

This background in diversity and inclusion led him to be engaged in diversity efforts in computing. As such he attended the Tapia Conference in 2005 and innocently joined a lunch time meeting for the Coalition to Diversify Computing. This meeting changed his professional career. He joined CDC, lead the CREU project, eventually was elected chair of CDC, co-directed the NSF BPC Alliance

in collaboration with CRA-W, participated in the initial conversations that created the CERP, was Program co-chair for the Technical program for Tapia 2009, and chair for 2013, is a member of the Steering committee for Tapia. He co-created and still co-manages the Hispanics in Computing listserv, a list that today has close to 400 members.

In 2015, Manuel moved to administration full time as he became Associate Dean of the College of Computing and Informatics at UNC Charlotte. But his work in diversity has not stopped. He is now a member of the Advisory Board for CMD-IT and chairs the new University Award committee recognizing universities with exceptional retention efforts. At UNC Charlotte, he created the Corporate Mentoring Program for female freshmen students where around 30 female computing major students are paired for a yearlong mentoring effort with female corporate representatives. The program has been a success and is now in its third year. In addition, he is Vice-President of the Latinx Faculty/ Staff Caucus on campus. Manuel Perez Quinones is frequently invited to speak on topics relating the perils of underrepresentation in computing.

Manuel's favorite quote is "Cuando tienes la oportunidad de mejorar cualquier situación, y no lo haces, estás malgastando tu tiempo en la Tierra." "Any time you have an opportunity to make a difference in this world and you don't, then you are wasting your time on Earth." Roberto Clemente.

WEDNESDAY

SEPT. 20, 2017

10:00 AM – 9:00 PM

Conference Registration

Location: Terrace Foyer

12:00 PM – 6:00 PM

Exhibitor Set-Up

Location: Grand Hall

1:00 PM – 5:00 PM

**Industry Professional Development Workshop:
Building Relationships That Take You to the Next Level**

Professional attendees only

Location: Regency VII

**CMD-IT Student Professional Development Workshop
Sponsored by Microsoft**

Pre-registration required

Location: Centennial I

5:00 PM – 6:00 PM

Scholarship Orientation & Newcomer Session

Location: Centennial I

6:00 PM – 7:30 PM

**Welcome Reception & Fireside Chat: Future Visions of
Artificial Intelligence and Machine Learning**

Fredrick Lee, Head of Information Security, Square

Catherine Kromkowski, Staff Technical Product Manager, GE

Rico Malvar, Microsoft Distinguished Engineer and the Chief
Scientist, Microsoft Research

Location: Centennial II-IV

7:30 PM – 9:30 PM

Dessert & Career Fair

Location: Grand Hall

THURSDAY

SEPT. 21, 2017

7:00 AM – 5:00 PM

Conference Registration

Location: Terrace Foyer

7:00 AM – 8:00 AM

General Breakfast

Location: Centennial Foyer & Centennial II-IV

Student Breakfast: Who Tells Your Story?

Sponsored by Asana

Pre-registration required

Location: Regency V

Student Breakfast: Careers @ Lyft

Sponsored by Lyft

Pre-registration required

Location: Regency VI

8:00 AM – 8:30 AM

Welcome & Announcements

Location: Centennial II-IV

8:30 AM – 9:15 AM

Plenary Speaker

**Making a Mathematical Diagnosis: How Combining Medical
Imaging with Computational Science can Improve Patient
Outcomes**

Edward Castillo, Research Scientist, Radiation Oncology
Department, Beaumont Health Research Institute

Location: Centennial II-IV

9:15 AM – 9:30 AM

Break

9:30 AM – 10:15 AM

Plenary Speaker

Building a Browser for Everyone

Adrienne P. Felt, Staff Software Engineer, Chrome Metrics and
Usable Security Team, Google

Location: Centennial II-IV

10:00 AM – 5:00 PM

Career Fair & Exhibits

Location: Grand Hall

10:15 AM – 10:45 AM

Refreshment Break

Location: Grand Hall

10:45 AM – 12:15 PM

Panels & Workshops

**Accessibility Research – Change Individuals and Change the
World**

Location: Hanover A

How to Use and Customize Free Interactive Ebooks

Location: Hanover B

Code Crafters Do Art and Code

Location: Chicago A-B

Increasing Diversity in Computing: Sharing of Good Practices

Location: Hanover E

How to Build Your Resume for a Career in Tech by Google and Pandora

Location: Centennial I

Entrepreneurial Skills & Thinking

Location: Hanover F

AI and Social Responsibility

Location: Hanover C

12:15 PM – 1:30 PM

Networking Lunch

Location: Centennial Foyer/Centennial II-IV

1:30 PM – 2:30 PM

Birds of a Feather Sessions

Opportunities in Cyber Security – Education To Employment

Location: Hanover A

Online Education through Massive Open Online Courses

Location: Hanover C

The Relevance of Data Science at Minority Serving Institutions

Location: Hanover D

How Can Digital Degrees Make Higher Education More Accessible?

Location: Hanover F

Using Advanced Computing to Affect Social Change

Location: Hanover G

Disability: Celebrating a Face of Diversity

Location: Hanover E

Keras, Deep Learning Made Easy

Location: Kennasaw

Visualization Research and Careers

Location: Hanover B

Women of Color in Computing

Location: Centennial I

2:30 PM – 3:30 PM

**Ken Kennedy Distinguished Lecture
Making Parallelism Easy: A 25 Year Odyssey**

Oyekunle Olukotun, Professor, Electrical Engineering and Computer Science, Stanford University
Location: Centennial II-IV

3:30 PM – 4:00 PM

Refreshment Break

Location: Grand Hall

4:00 PM – 5:00 PM

Private Poster Presenter Reception

By invitation only

Location: Chicago A-D

Birds of a Feather Sessions

Things I wish I knew about High Performance Computing when I started

Location: Hanover B

Learning Communities for Underrepresented Students in Computer Science

Location: Hanover C

Introducing Data Science and Analytics into Computing Curriculum

Location: Hanover E

Addressing Diversity & Inclusion Issues in Computer Science through Contributions to Free and Open Source Software

Location: Hanover F

To Disclose or Not to Disclose: A Question of Accommodations in the Technical Workplace

Location: Hanover G

Empower the Campus by Bringing Your “XX” Factor Out

Location: Hanover D

Hispanics in Computing Community

Location: Centennial I

5:00 PM – 7:00 PM

Reception & Tapia Student Poster Competition/ACM Student Research Competition (SRC)

Sponsored by Tapia 2017 Silver Sponsors

Location: Regency Foyer & Regency Ballroom

7:00 PM – 9:00 PM

ABI Community Meetup

Sponsored by the Anita Borg Institute

Location: Centennial I

FRIDAY

SEPT. 22, 2017

7:00 AM – 5:00 PM
Conference Registration
 Location: Terrace Foyer

7:00 AM – 8:00 AM
General Breakfast
 Location: Centennial Foyer & Centennial II-IV

Square Student Breakfast
Sponsored by Square
Pre-registration required
 Location: Regency V

Hispanics in Computing Breakfast
Sponsored by IBM & EquitableTech
By invitation only
 Location: Regency VI

8:00 AM – 8:30 AM
Announcements
 Location: Centennial II-IV

8:30 AM – 9:15 AM
Plenary Speaker
New Interfaces in Neural Computing

Avani Wildani, Assistant Professor, MathCS and Neuroscience,
 Emory University
 Location: Centennial II-IV

9:15 AM – 9:30 AM
Break

9:30 AM – 10:15 AM
Plenary Speaker
Leveraging Fine-grained Data Flows in Web Applications

James Mickens, Associate Professor of Computer Science,
 Harvard University
 Location: Centennial II-IV

10:00 AM – 5:00 PM
Exhibit Hall Open for Interviews
 Location: Grand Hall West

10:15 AM – 10:45 AM
Refreshment Break
 Location: Centennial Foyer

10:45 AM – 12:15 PM
SRC Round II
 Location: Kennesaw

Panels & Workshops
Faculty Workshop Part I: NSF Funding Opportunities
 Location: Regency VI

Computation in Chemistry
 Location: Hanover A

The Art of the Demo: How to Create Engaging 15 Minute Outreach Activities
 Location: Hanover B

Made in the Machine: New Cultural Practices, Critical Analyses, and Techniques in Digital Fabrication, Making, and Manufacturing
 Location: Hanover F

Maximizing Your PhD: Preparing for Academia or Industry
 Location: Hanover D

Taking on the Technical Interview
 Location: Centennial I

Managing Career Transitions
 Location: Hanover C

Befriending Failure is Simply Smarter!
 Location: Hanover E

Grassroots Mentoring: Creating Communities to Succeed in Technology
 Location: Chicago A-D

12:15 PM – 1:30 PM
General Lunch & Networking
 Location: Centennial II-IV

Faculty Luncheon
By invitation only
 Location: Regency V

1:30 – 3:00 PM
Panels & Workshops

Faculty Workshop Part II: Student Retention
 Location: Regency VI

Machine Learning at Pinterest
 Location: Hanover A

Lessons from a Developer in DevOps
 Location: Hanover B

Discovering Careers with Code - Engage & Retain Diverse Students with CS + X Career Resources
 Location: Regency VII

The Art of Innovation and “The Pitch”
 Location: Hanover D

Graduate STEM Degrees: Preparing an Effective Application
 Location: Hanover F

What No One Ever Told You About You About Searching for a Post-Grad School Job
 Location: Hanover C

Strategies for Human-Human Interaction
 Location: Hanover E

Data Challenges for the Internet of Things
 Location: Hanover G

SATURDAY

SEPT. 23, 2017

Global Impact of Technology

Location: Chicago A-D

3:00 PM – 3:30 PM**Refreshment Break**

Location: Centennial Foyer

3:30 PM – 5:00 PM**Panels & Workshops****Using “Why” to Build a Better “What”: A Human Centered Approach to Systems and Data**

Location: Hanover A

Using Learning and Engagement Strategies in Software Engineering and Programming Courses (LESSEP17-3)

Location: Hanover B

Guiding Students to Discover CS Concepts & Develop Process Skills using POGIL

Location: Hanover F

National-Scale Committee: The Process and The Requirements

Location: Regency VI

Fairness, Accountability and Transparency in Algorithmic Decision Making

Location: Hanover C

From Research to Startup

Location: Hanover E

Distributed Systems Unplugged: Sustainability & Energy Efficiency at the Edge

Location: Hanover G

Tech Tales: The Silicon Valley Tech Experience for People of Color

Location: Centennial I

Finance and Technology

Location: Chicago A-D

5:00 PM – 6:00 PM**Birds of a Feather Session****Reach Forward, Reach Back – Using Peer Based Programs to Broaden Participation in Computer Science**

Location: Chicago A-D

VIP Reception*By invitation only*

Location: Executive Conference Suite 226

(Executive Conference Suites are located on the 2nd Floor in the Atrium Tower above Sway Restaurant)

6:00 PM – 11:00 PM**Banquet & Dancing****Keynote Speaker****Randal Pinkett**, Founder, Chairman and CEO, BCT Partners

Location: Centennial II-IV

8:00 AM – 12:00 PM**Bloomberg CodeCon****Sponsored by Bloomberg***Pre-registration required*

Location: Learning Center

Learn about Big Data with Microsoft!**Sponsored by Microsoft and edX***Pre-registration required*

Location: Hanover A

High Performance Computer Networking: Moving Data Fast, Easily, and Securely**Sponsored by the Department of Energy National Labs & presented by Los Alamos National Labs***Pre-registration required*

Location: Hanover E

Computation on a GPU Environment**Sponsored by the Department of Energy National Labs & presented by Oak Ridge National Labs***Pre-registration required*

Location: Hanover F

8:00 AM – 5:00 PM**Doctoral Consortium****Sponsored by the National Science Foundation***By invitation only*

Location: Cortland

Computation on an Intel Xeon Phi (aka Knights Landing or KNL) Platform**Sponsored by the Department of Energy National Labs & presented by the National Energy Research Scientific Computing Center at Lawrence Berkeley National Laboratory****Pre-registration required***Pre-registration required*

Location: Hanover D

8:30 AM – 4:30 PM**BWiC Pathways to STEM Gaming Workshop for High School Students****Sponsored by Black Women in Computing (BWiC), CMD-IT and Motorola Solutions Foundation***By invitation only*

Location: Hanover C



WEDNESDAY PROGRAM SCHEDULE

1:00 PM – 5:00 PM

CMD-IT Student Professional Development Workshop

Sponsored by Microsoft

Pre-registration required for this session

Location: Centennial I

The CMD-IT Student Professional Development Workshop will provide undergraduate and masters level computer science students with the unique opportunity to receive coaching and development from Industry professionals. Students will learn the best practices for resume writing and preparing for the rigors of the interview (technical and behavioral) process.

Industry Professional Development Workshop: Building Relationships that Take You to the Next Level

Professional Conference attendees only

Location: Regency VII

Workshop Facilitator: **Sabrina Coleman**, President & Founder, Mahoghany Coaching and Development

Organizations are comprised of two interdependent systems, the technical system and the social system. And, nowhere is this more evident than in the tech sector. Your exceptional technical skills got you in the door, but your social skills will help you climb the ladder. Research tells us you won't be successful without both skill sets and one of the most important is relationship-building.

Building influential relationships that take us to the next level is anything but straight-forward. This dynamic process actually requires intentionality, focus and planning. And in today's competitive environments, how we are viewed by our colleagues many times, can make or break us. And, if we believe our behavior teaches others how to treat us, then we want to ensure that we're sending the right messages. In this workshop, we will explore some of the key relationship-building strategies that help us build sustainable relationships that take us to the next level. And then, we will take it a step further by learning some simple tools and skills that you can leverage across these critical relationships, that will help to ensure you achieve your desired results.

5:00 PM – 6:00 PM

Scholarship Recipient Orientation & Newcomers Session

Location: Centennial I

Tapia Conference Scholarship Recipients and attendees who are first time Tapia Conference participants are invited to join conference leadership at this session to welcome and introduce you to the conference.

6:00 PM – 7:30 PM

Welcome Reception & Fireside Chat: Future Visions of Artificial Intelligence and Machine Learning

Location: Centennial II-IV

Fredrick Lee, Head of Information Security, Square

Catherine Kromkowski, Staff Technical Product Manager, GE

Rico Malvar, Microsoft Distinguished Engineer and the Chief Scientist, Microsoft Research

Moderator: **Charles Isbell**, Professor and Senior Associate Dean, College of Computing, Georgia Institute of Technology

With the advance in computing technology, artificial intelligence and machine learning are widely used to bring about insights and deep learning from the abundance of data. Such examples include the research on automated cars and the deep learning in science to bring about new discoveries. The Fireside Chat will provide an opportunity to hear from industry leaders about some of the current and future applications of artificial intelligence and machine learning and the technical issues to be addressed in this area.

BIOGRAPHIES:

"Flee" is the Head of Information Security at Square. He has a history of solving security problems for a range of



organizations all the way from large enterprises (Bank of America, NetSuite) to small startups (Twilio, Fortify). He's experienced in building and leading global security teams and specializes in application security. He's passionate about all things security, but finds time to indulge in other hobbies including road cycling, mountain biking, rock climbing, snowboarding, backpacking, and photography.

WEDNESDAY PROGRAM SCHEDULE



Catherine Kromkowski is a Digital Thread Analyst and Technical Product Manager at GE. She leads the digital thread portfolio for engineering and supply chain across GE's Power division. She partners with functional experts to identify digital technology solutions that optimize how people, process, and technology interact with data analytics and innovative strategy. Catherine earned her B.S. in Mathematics from the University of Notre Dame and is a graduate of GE's Digital Technology Leadership Program.



Rico Malvar is a Microsoft Distinguished Engineer and the Chief Scientist for Microsoft Research. He joined Microsoft Research in 1997, founding the signal processing group, which developed new technologies such as new media compression formats used in Windows, Xbox, and Office, and audio technologies used in Windows, Xbox, Kinect, and HoloLens. Currently he also heads the MSR Enable group, which develops technologies for people with disabilities. Rico was a key architect for the WMA and JPEG XR formats, and made key contributions to the H.264 video format (used by Netflix, YouTube, etc.). Prior to Microsoft, Rico was Vice President for Research at PictureTel Corp. Rico received a Ph.D. from MIT (1986) and is a Member of the US National Academy of Engineering and the Brazilian Academies of Science and Engineering. He has over 120 issued US patents and over 160 publications. He is an IEEE Fellow and has received many awards, including an IEEE Technical Achievement Award. He was involved in a few startups, and is currently a member of the Alliance of Angels in Seattle.



Dr. Charles Lee Isbell, Jr. received his B.S. in Computer Science in 1990 from the Georgia Institute of Technology and his Ph.D. in Computer Science from the Massachusetts Institute of Technology in 1998. After four years at AT&T Labs/Research, he returned to Georgia Tech to join the faculty of the College of Computing. Charles' research interests are varied, but recently he has been building autonomous agents that engage in life-long learning when in the presence of thousands of other intelligent agents, including humans. His work has been featured in the popular media, including the New York Times and the Washington Post as well as in technical collections. Charles also pursues reform in computing education. He was a developer of Threads, Georgia Tech's new structuring principle for computing curricula and one of the key developers in Georgia Tech's new MOOC-supported Masters of Science in Computer Science, the first of its kind in the world. He assumed the role of the Senior Associate Dean for the College and recently, was promoted to the role of Executive Associate Dean. He has also been named Georgia Tech's Faculty Athletic Representative.



7:30 PM – 9:30 PM

Career Fair & Dessert

Location: Grand Hall

The Career Fair includes representatives from our supporters from industry, academia, government and non-profit organizations supporting individuals in computing.



THURSDAY PROGRAM SCHEDULE

7:00 AM – 8:00 AM

General Breakfast

Location: Centennial Foyer & Centennial II-IV

Student Breakfast: Who Tells Your Story?

Sponsored by Asana

Pre-registration required

Location: Regency V

Who Tells Your Story? is a panel that explores how people from underrepresented groups articulate the issues that are important to them in the workplace, whether they're related to identity or not. The event will focus on how interns (or anyone new to tech) own their story and their brand throughout their professional career. We'll discuss how we should evaluate companies based on what's important to us and highlight what companies have done to support and celebrate folks from underrepresented groups. The discussion will focus on: - The pros and cons of being "the [insert ethnicity/gender/etc.] engineer" versus "the engineer who happens to be [insert ethnicity/gender/etc.]" - How do I approach the lack of representation of [insert ethnicity/gender/etc.] to a workplace full of [the opposite]? - How can we work with allies to help identify and change things we see in the workplace? - Does assimilating to workplace culture help or hurt me? (before panic sets in, the lesson here is "You don't have to minimize your identity to be palatable or approachable to potential employers.")

Student Breakfast: Careers @ Lyft

Sponsored by Lyft

Pre-registration required

Location: Regency VI

If it's broken, fix it. If it doesn't exist, invent it. At Lyft, we challenge convention, take risks, and are here to make an impact. The challenges our team takes on are changing the face of transportation — in cities, in our app, and beyond. We invite you to join our team Thursday, September 21st to meet with leaders, engineers and recruiters of Lyft. We know it's early, so we're here to provide some much-needed caffeine, fuel the long day ahead and offer a great networking opportunity to meet some of the awesome employees of Lyft. Come early, come hungry, and come with questions.

8:00 AM – 8:30 AM

Welcome & Announcements

Location: Centennial II-IV

8:30 AM – 9:15 AM

Plenary Speaker

Location: Centennial II-IV

Making a Mathematical Diagnosis: How Combining Medical Imaging with Computational Science can Improve Patient Outcomes

Edward Castillo, Research Scientist, Radiation Oncology Department, Beaumont Health Research Institute

Medical imaging is essential for diagnosing and treating many diseases. While imaging modalities such as magnetic resonance imaging (MRI) and computed tomography (CT) provide a visualization of internal anatomy, functional imaging modalities provide information on physiological activity. For instance, positron emission tomography (PET) quantifies metabolic activity and pulmonary ventilation scans measure breathing. However, in comparison to CT imaging, functional imaging requires a longer acquisition time, has a lower spatial resolution, and is often susceptible to motion artifacts, particularly in the lungs. With the goal of addressing these shortcomings, my research team and I developed 4DCT-derived functional imaging (CT-FI). CT-FI is an image processing based modality that uses numerical optimization methods to quantify pulmonary function from dynamic computed tomography (often referred to as 4DCT). In this talk, I will present the mathematical derivation and numerical implementation of CT-FI, as well as how its application within cancer radiotherapy, diagnostic imaging, and emergency room medicine can improve patient outcomes.

BIOGRAPHY:

Edward Castillo is currently a Research Scientist in the Radiation Oncology Department at the Beaumont Health Research Institute. He is also an Adjunct Assistant Professor in the Computational and Applied Mathematics Department at Rice University, as well as an Adjunct Assistant Professor of Medical Physics at Oakland University (Rochester Hills, MI). Dr. Castillo is originally from San Antonio, TX, where in 2001 he graduated as an Honors Scholar from St. Mary's University with a B.S. degree in mathematics. He went on to earn M.A. (2005) and Ph.D (2007) degrees from the Computational and Applied Mathematics department at Rice University for his

THURSDAY PROGRAM SCHEDULE



work on medical image processing and then continued this line of research as a postdoctoral scholar in the Mathematics Department at the University of California, Irvine. In 2009, Dr. Castillo joined the department of Radiation Oncology research staff at the University of Texas MD Anderson Cancer Center and in 2012 was promoted to Assistant Professor. During this time, Dr. Castillo became well known for his work on medical image processing and, in collaboration with his research team, for pioneering the CT-derived ventilation imaging modality.

In 2014, Dr. Castillo joined the Beaumont Health Research Institute where he continues his work on the mathematical development, numerical implementation, and clinical application of novel methods for medical image analysis. His current research projects include radiotherapy dose response modeling, numerical methods for computing CT-derived functional imaging, and computer-aided diagnostics. During his career, Dr. Castillo has coauthored over 35 research publications and over 30 conference abstracts. He is a co-investigator and principal investigator on numerous funded projects, including grant awards from the National Institutes of Health, the University of Michigan MTRAC for Life Sciences, and the Beaumont Research Institute's Nederlander Family Seed Grant Award for Cancer Research.

9:15 AM – 9:30 AM
Break

9:30 AM – 10:15 AM
Plenary Speaker
Location: Centennial II-IV

Building a Browser for Everyone

Adrienne P. Felt, Staff Software Engineer, Chrome Metrics and Usable Security Team, Google

Chrome is used by all kinds of people from all over the planet. We build software that is used by Swedish factory workers, American stay-at-home parents, and Indian artisans alike. We can't design by instinct because our own needs and experiences don't generalize to our users. Instead, we use data-driven design: we run user studies, perform A/B experiments, and measure how well Chrome is working for real people. In this talk, I'll give examples of how data-driven design helped Chrome meet the needs of our diverse user base. Our work is interdisciplinary, crossing the boundaries of user research, product, and engineering.

BIOGRAPHY:

Adrienne Porter Felt makes software more usable, helpful, and secure for 2+ billion Chrome users. She leads Chrome's metrics and usable security teams. One of her major initiatives has been promoting HTTPS across the web: measuring HTTPS adoption hurdles, incentivizing adoption among developers, and explaining its value more clearly to end users. Previously, Adrienne was a research scientist on Google's security research team. Adrienne earned a PhD and MS in Computer Science from UC Berkeley, and a BS in Computer Science from the University of Virginia.

10:00 AM – 5:00 PM
Career Fair & Exhibits
Location: Grand Hall

The Career Fair includes representatives from our supporters. Take an opportunity to discuss career and graduate school options with representatives from industry, academia, government and non-profits supporting individuals in computer science.

10:15 AM – 10:45 AM
Refreshment Break
Location: Grand Hall

10:45 AM – 12:15 PM
Panels and Workshops

Increasing Diversity in Computing: Sharing of Good Practices
Location: Hanover E

This panel will provide an opportunity for representatives from the NSF-funded Broadening Participation in Computing Alliances and other organizations to share their good practices about increasing diversity in computing. The panel will begin with an introduction to the following NSF BP Alliances and other organizations: AccessComputing, CAHSI, CMD-IT, CRA-W, ECEP, IAAMCS, NCWIT, and STARS. The panelists will share information about their organization and how their program programs have broadened participation in computing via a world cafe setting. The session will include sufficient time for questions and discussions.

Panel Organizers: **Valerie Taylor**, CMD-IT; Richard Ladner, AccessComputing; **Ann Gates**, CASHI; **Nancy Amato**, CRA-W; **Mark Guzdial**, ECEP; **Juan Gilbert**, IAAMCS; **Terry Morreale**, NCWIT; **Jamie Payton**, STARS



THURSDAY PROGRAM SCHEDULE

Entrepreneurial Skills & Thinking

Location: Hanover F

This session will discuss some of the benefits and drawbacks of pursuing entrepreneurial opportunities. It will describe what skills are critical for such ventures, how to identify entrepreneurial opportunities, and how you might first start with intrapreneurship. Even if you don't aspire to become an entrepreneur, this workshop will illuminate that you probably already think like one (or you should!).

Panel Moderator: **Jamika D Burge**, Capital One

Panelists: **Ayanna Howard**, Georgia Institute of Technology; **Juan F. Sequeda**, Capsenta; **Zayira Jordan**, Polytechnic University of Puerto Rico

AI and Social Responsibility

Location: Hanover C

Society is now entering an era in which computational power will not simply increase our understanding of the world, but autonomously develop synthetic "expertise" in a range of domains. The age of pervasive artificial intelligence will yield much-needed innovations in domains such as safety, health, and commerce. However, unwanted societal consequences will occur unless researchers, practitioners, and policy-makers take responsibility to proactively address relevant challenges.

Panel Moderator: **Joel Branch**, ESPN

Panelists: **Meg Pirrung**, Pacific Northwest National Lab; **Stephane Motuo-Fotso**, Square; **Chris Crawford**, University of Alabama

How to Build Your Resume for a Career in Tech by Google and Pandora

Location: Centennial I

Unsure of your resume or looking for guidance in develop it? Come learn resume prep tips and tricks from Google and Pandora recruiters to help you prepare for your future technical career. Don't forget to bring a copy of your resume to the session as this is an interactive opportunity to receive coaching on how to improve your resume.

Workshop Organizers: **Anita Stokes**, Pandora; **Melissa Arguinzoni**, Google

Accessibility Research – Change Individuals and Change the World

Location: Hanover A

Accessibility research is an exciting field that employs the techniques of human-computer interaction (HCI) with the support of the complementary fields of computer vision, signal processing, robotics, artificial intelligence, natural language processing, machine learning, and ubiquitous computing to design, develop, and evaluate technologies to enhance the lives of people with disabilities. Historically, solving accessibility problems has led to major mainstream technologies such as telephone, speech recognition, speech synthesis, and optical character recognition. Working on HCI problems at the extremes of human abilities is challenging and very creative. HCI research that is concerned with average human abilities can have a lot of impact, but accessibility research that is concerned with improving the lives of the more than one billion people in the world can be personally very rewarding. While accessibility research targets smaller groups of people than some other HCI research, it usually results in a transformative impact on those target individuals' lives. This workshop will bring alive accessibility research by listening to and interacting with three of the leading accessibility researchers in the world.

Workshop Organizers: **Richard Ladner**, University of Washington; **Shiri Azenkot**, Cornell Tech; **Shaun Kane**, University of Colorado at Boulder

How to Use and Customize Free Interactive Ebooks

Location: Hanover B

The Runestone Interactive website contains more than ten free interactive ebooks that can be used in introductory computer science and web development courses. Several of these ebooks have been designed to improve learning based on research from educational psychology, such as worked examples with interleaved practice problems. Instructors can create a custom course from one of the existing ebooks and have their students register for that custom course. Instructors can then use an instructor dashboard to track how their students are doing, create assignments from the existing material in the ebooks, and author new material. The ebooks allow learners to execute and modify Python and/or Java code in a browser window, step through code execution in a visualizer, and receive immediate feedback from practice questions. The ebooks contain several types of practice questions including multiple-choice questions, fill in the blank questions, clickable code questions, mixed up code questions, and write code questions. In an early study with the "How to

THURSDAY PROGRAM SCHEDULE



Think Like a Computer Scientist: Interactive Edition” ebook, the majority of the undergraduate students (61%) wanted to use another ebook like that one in their future courses. This workshop will give the attendees a hands-on introduction to the interactive features of the ebooks, help them create at least one custom course from an existing ebook, and introduce them to the instructor interface.

Workshop Organizer: **Barbara J. Ericson**, Georgia Tech

Code Crafters Do Art and Code

Location: Chicago A-D

Broadening participation in computing is usually viewed as inviting a diverse constituency into well-established computing culture. This workshop takes a different approach, suggesting that perhaps the story of computing and coding isn’t necessarily the one you usually hear. The ‘Code Crafters’ curriculum will be introduced. Students learn about patterns, codes and primitives by first learning how to crochet. They then move on to programming an embroidery machine using ‘TurtleStitch’ an enhancement of Snap! A variety of coding concepts are introduced through embroidery and then ‘remixed’ for quilting. Finally, students consider 2D by learning how to weave on a backstrap loom. Coding and concepts get serious: with an introduction to Java through a Processing version of TurtleStitch. Students learn how file formats work, and program the embroidery machine directly in machine code. This workshop will take participants through the basics and share curricular and planning materials.

Workshop Organizers: **Ursula Wolz**, Riversound Solutions and **Samuel Rebelsky**, Grinnell College

12:15 PM– 12:30 PM

General Lunch & Networking

Location: Centennial Foyer & Centennial II-IV

12:30 PM – 1:30 PM

Birds of a Feather Sessions

Opportunities in Cyber Security – Education To Employment

Location: Hanover A

This BoF will focus on graduate education in engineering and computer science considering opportunities in cyber security, applying, funding, internships and post-graduate employment. There is a high demand for qualified candidates. Reports in tech news point to shortages in key cybersecurity

skills including engineers and analysts with organizations being both understaffed and under-skilled. “The problem is that cybersecurity professionals—who combine broad technical skills with specific security expertise and an understanding of business risk—are hard to find.” (Indeed.com/Jan. 17, 2017: Indeed Spotlight: The Global Cybersecurity Skills Gap). Obtaining a graduate degree can increase your marketability. Join round-table discussions with current graduate students to learn about pursuing a technical graduate degree, creating an effective application, types of funding available, and employment (pre- and post-graduation).

BOF Organizers: **Lisa Currin**, Carnegie Mellon University; **Alfredo Cruz**, Polytechnic University of Puerto Rico; **Jeff Duffany**, University of Turabo, Puerto Rico

Online Education through Massive Open Online Courses

Location: Hanover C

Ever wanted to create an Android application, get started in Machine Learning, or utilize social media marketing but don’t know where to start? With massive open online courses (MOOCs), the task has become easier than ever before. We often experience the lack of hands-on projects to supplement university-level courses. However, it is no secret that many tech companies value “real-world” skills. The purpose of our talk is to bring attention to affordable online resources, bridging the gap between theoretical knowledge and practical knowledge.

We will share our favorite online courses, discuss ways to navigate MOOC providers, and tips to stay motivated throughout the self-paced learning process. We will also address the challenges that we faced while pursuing these courses, and offer some interesting ideas that we used. By the end of the session, attendees will leave with a list of MOOC resources, and confidence in self-paced online learning.

BOF Organizers: **Harshita Kasera**, University of Southern California; **Karen Wang**, University of Southern California

The Relevance of Data Science at Minority Serving Institutions

Location: Hanover D

The need for a STEM professional to analyzing and interpreting massive amounts of data (Big Data) generated by the synergistic confluence of pervasive sensing, computing, and networking, has increased exponentially. This data is heterogeneous and the volumes are unprecedented in scale and complexity. Big data is the next frontier for innovation,



THURSDAY PROGRAM SCHEDULE

and productivity. Big data is interesting because it has the potential to reveal emergent phenomena that do not manifest in small and medium-scale data. However, the sheer volume and heterogeneity of data brings with it a multitude of problems. Algorithmic techniques and technologies spanning computer science, computational science, statistics, and applied mathematics are needed to address data science problems. However, very few minority serving institutions have the curriculum and faculty expertise to train the next generation of data scientists. Data scientists play critical roles in enabling organizations to improve their services based on the data-oriented information the organizations collect.

BOF Organizers: **Leonardo Vieira**, Jackson State University; **Robin Ghosh**, Jackson State University

How Can Digital Degrees Make Higher Education More Accessible?

Location: Hanover F

Higher education has entered a new moment, one in which student demographics are changing and universities are struggling to meet these changing demands for accessible education. First, MOOCs (or massive open online courses) appeared on the scene. A polarizing wave of learning opportunities and challenges arrived along with this new format and it threw educators into a spiral, trying to determine ways that their “traditional” degrees might still provide the greatest market value. Now, industry and higher education have begun to partner to produce a hybrid of “traditional” and MOOC learning – the digital degree. Join in on a discussion with Charles Isbell, a founding faculty member of Georgia Tech’s trailblazing online Master of Science in Computer Science (OMS CS) program, Tia Pope, a current OMS CS student and Cryptographic Engineer for Cisco Systems, and Jassimran Kaur, a former OMS CS student and Immersion Program Teacher for Girls Who Code, as they unpack the current impact of digital degrees on the accessibility of higher education and work towards outlining ways in which digital learning can provide avenues towards greater diversity in computing education.

BOF Organizers: **Charles Isbell**, Georgia Institute of Technology; **Tia Pope**, Cisco; **Miguel Morales**, Lockheed Martin and Georgia Institute of Technology

Using Advanced Computing to Affect Social Change

Location: Hanover G

In 2016, the Texas Advanced Computing Center in collaboration with Southeastern Universities Research Association launched the Advanced Computing for Social Change Institute. The student cohort experience engages undergraduate and graduate students- majority first-generation college students and students historically underrepresented in STEM- in a socially relevant challenge using advanced visualization, data analytics, and computational thinking. Curriculum applications include economic segregation, food security, natural hazards, and cybersecurity to name a few. This BOF introduces a novel informal training approach that prepares our future scientific workforce using advanced cyberinfrastructure (CI) resources, and develops leadership and communication skills. This BOF aims to engage a collective team of stakeholders including students, faculty, and industry professionals in the recruitment of future ACSCI cohorts. Members of the ACSCI project management team and program participants will share a unique opportunity that is helping reverse the underrepresentation of minorities who access, develop, and make significant contributions in advanced computing.

BOF Organizers: **Rosalia Gomez**, Texas Advanced Computing Center, The University of Texas at Austin; **Linda Akli**, Southeastern Universities Research Association; **Lorna Rivera**, Georgia Institute of Technology; **Roberto Camacho**, The University of Texas at El Paso

Disability: Celebrating a Face of Diversity

Location: Hanover E

There is great diversity among individuals with disabilities, but there are also many common experiences. This Birds of a Feather session will bring together people who have a disability or who are interested in supporting individuals with disabilities. The goal of the session is to learn from each other about strategies for achieving success and ensuring that computing is welcoming and accessible to individuals with disabilities. Topics discussed will include: accessibility in computing education, disclosing disability in interviews, and recruiting and retaining employees and interns with disabilities. The session will include information about internships, mentoring, and career development opportunities available from AccessComputing, a NSF-funded Broadening Participation Alliance.

BOF Organizers: **Richard Ladner**, University of Washington; **Brianna Blaser**, University of Washington

THURSDAY PROGRAM SCHEDULE



Keras, Deep Learning Made Easy

Location: Kennesaw

Quoting from the source: Keras is a high-level neural networks library, written in Python and capable of running on top of either TensorFlow or Theano. It was developed with a focus on enabling fast experimentation. <https://keras.io/#keras-deep-learning-library-for-theano-and-tensorflow> The session will include an in depth analysis of how Keras improves performance over TensorFlow or Theano, the two most popular libraries for Deep Learning. Keras makes it easier to convert ideas into implementations even for beginners in the field. The session will start from covering the basics of Deep Learning, its performance enhancements, the problems it can solve. Popular projects and implementations will be discussed. An introduction into customization of Keras library and its various models will conclude the session to curate to the needs of the advanced audience. The session will be end with a summary of benefits of Keras and the urge to spread awareness about the same.

BOF Organizer: **Chhavi P. Gupta**, Google

Visualization Research and Careers

Location: Hanover B

Visualization plays a significant role in the exploration of data across all disciplines. Visualization tools and techniques have the ultimate goal of understanding the complex relationships that exist within data. Join us at this Birds of Feather session to learn about Information and Scientific Visualization. We'll go over useful topics such as learning resources, design principles, applications (Gephi, ParaView), languages (D3, Processing), conferences (IEEE VisWeek, XSEDE, VIZBI, BioVis), and public data resources. Come learn about the computational visualization skills that can prepare you for careers as a researcher or practitioner in areas such as Human Computer Interaction, High Performance Computing, bioinformatics, imaging, data science, analytics, and more. We will also describe diversity in visualization opportunities such as Research Experience for Undergraduates as well as the Broadening Participation in Visualization (BPViz) Workshop.

BOF Organizers: **Alberto Roca**, DiverseScholar; **Ronald Metoyer**, University of Notre Dame

Women of Color in Computing

Location: Centennial I

Women of Color are a segment of the population that is one of the least represented in computing, and increasing their representation is further challenged by the lack of positive messages in media that celebrate their contributions to computer science and technology. In an effort to combat this lack of awareness, it is important to amplify the voice of women of color in computing and technology. In the one hour session there will be three sub topics discussed:

- Strategies to support the community of women of color in computing
- Importance and practices to develop skills in leadership, communication
- Themes in the intersection of race and gender in computing

BOF Organizers: **Quincy Brown**, AAAS; **Jakita O. Thomas**, Auburn University; **Jamika Burge**, Capital One

1:30 PM – 2:30 PM

Ken Kennedy Distinguished Lecture

Location: Centennial II-IV

Making Parallelism Easy: A 25 Year Odyssey

Oyekunle Olukotun, Professor, Electrical Engineering and Computer Science, Stanford University

In this talk, I will trace my involvement with high-performance computing and parallel programming over the last 25 years. I will relate my experience with the challenges of developing computer architectures and system software to make parallelism easy to use for application software developers. I will touch on message passing machines, the genesis of chip-multiprocessors (CMP), speculative parallelism, commercial throughput processor design, and my most recent work in domain specific programming languages for parallelism.

BIOGRAPHY:

Kunle Olukotun is the Cadence Design Systems Professor of Electrical Engineering and Computer Science at Stanford University. Olukotun is well known as a pioneer in multicore processor design and the leader of the Stanford Hydra chip multiprocessor (CMP) research project. Olukotun founded Afara Websystems to develop high-throughput, low-power multicore processors for server systems. The Afara multicore



THURSDAY PROGRAM SCHEDULE

processor, called Niagara, was acquired by Sun Microsystems. Niagara derived processors now power all Oracle SPARC-based servers. Olukotun currently directs the Stanford Pervasive Parallelism Lab (PPL), which seeks to proliferate the use of heterogeneous parallelism in all application areas using Domain Specific Languages (DSLs). Olukotun is a member of the Data Analytics for What's Next (DAWN) Lab which is developing infrastructure for usable machine learning. Olukotun is an ACM Fellow and IEEE Fellow for contributions to multiprocessors on a chip and multi-threaded processor design. Olukotun received his Ph.D. in Computer Engineering from The University of Michigan.

3:30 PM – 4:00 PM **Refreshment Break**

Location: Grand Hall

4:00 PM – 5:00 PM **Private Student Poster Presenter Reception**

By invitation only

Location: Chicago A-D

Birds of a Feather Sessions

Things I Wish I Knew About High Performance Computing When I Started

Location: Hanover B

This BoF will foster a conversation about the technical and social hurdles that can impede progress during entry into the world of High-Performance Computing. The organizers, as part of the XSEDE project, have a wide array of experience with people in this phase of their careers. A major part of our mission is providing software toolkits and knowledge to groups without access to pre-existing HPC resources. We discuss ways of getting and using resources available for computational science, through nationally funded projects or on-campus resources. Discussion topics will range from useful things to know when approaching an HPC system and where to learn more (Linux, schedulers, user etiquette), imposter syndrome (almost everyone in HPC experiences some form of this!), to moral support in asking questions, and more! We will encourage attendees to share any of their experiences as or with people in the early stages of learning about HPC.

BOF Organizers: **Richard Knepper**, Indiana University; Resa Reynolds, Cornell University; **Barbara Hallock**, Indiana University; **Carrie Ganote**, Indiana University; **Eric Coulter**, Indiana university

Learning Communities for Underrepresented Students in Computer Science

Location: Hanover C

As a first-year at Pomona College, I noticed the lack of diversity, mentorship, and community within the computer science department. I struggled both inside and outside the classroom setting because I felt out of place and struggled with imposter syndrome. In order to overcome these issues, I reached out to the few Latino students that had either taken the introductory courses or majored in CS. They expressed their concerns regarding diversity and representation in the department and shared their experiences with me. I was fortunate enough to find mentors that were willing to share their experiences with me in order to help me see that I was not alone in the department. In an attempt to provide support and community to other students, I created a learning community for underrepresented students in the intro classes in CS. The idea for the learning community originated from Pomona College's math department, in which they assign a mentor to a small group of students in a class. The goal for the learning community I created in the CS department is to offer students a space in which they can feel comfortable asking their peers questions without judgment. The sessions consist of peer-to-peer mentoring as well as department TAs giving one-on-one help. I want students to know they do belong in computer science and that there are students with similar experiences. I hope that with the proper support system in the introductory courses, more underrepresented students will be motivated to major in CS.

BOF Organizer: **Alejandro A. Vasquez**, Pomona College

Introducing Data Science and Analytics into Computing Curriculum

Location: Hanover E

The need for a STEM professional to analyzing and interpreting massive amounts of data (Big Data) generated by the synergistic confluence of pervasive sensing, computing, and networking, has increased exponentially. This data is heterogeneous and the volumes are unprecedented in scale and complexity. Big data is the next frontier for innovation,

THURSDAY PROGRAM SCHEDULE



and productivity. Big data is interesting because it has the potential to reveal emergent phenomena that do not manifest in small and medium-scale data. However, the sheer volume and heterogeneity of data brings with it a multitude of problems. Algorithmic techniques and technologies spanning computer science, computational science, statistics, and applied mathematics are needed to address data science problems. However, very few minority serving institutions have the curriculum and faculty expertise to train the next generation of data scientists. Data scientists play critical roles in enabling organizations to improve their services based on the data-oriented information the organizations collect.

BOF Organizers **Nannette Napier**, Georgia Gwinnett College; **Evelyn Brannock**, Georgia Gwinnett College

Addressing Diversity & Inclusion Issues in Computer Science through Contributions to Free and Open Source Software

Location: Hanover F

Diversity and inclusion (D&I) has long been identified as a problem within computer science. Even groups who have been the subject of significant outreach initiatives, such as women, still are highly underrepresented. This BOF will explore curricular approaches in higher-ed in which participation in and contribution to Free and Open Source Software (FOSS) communities and projects are used to help overcome underlying challenges that may be preventing or discouraging minority groups from pursuing computer science. Participating in FOSS projects helps students place themselves within the context of the computing community, addressing feelings of isolation and separation. Additionally, FOSS communities provide opportunities for students to find mentors, role models, and direct support. Lastly, students' confidence grows as their contributions are incorporated into the projects, allowing students to see that their contributions actually have "real world" impact – particularly in Humanitarian FOSS projects – providing further motivation to continue in this field.

BOF Organizers: **Christian Murphy**, University of Pennsylvania; **Judy Weng**, University of Pennsylvania; **Jan Pearce**, Berea College; **Nanette Veilleux**, Simmons College

To Disclose or Not to Disclose: A Question of Accommodations in the Technical Workplace

Location: Hanover G

Disclosing a disability is a personal and, oftentimes, a confusing choice. If you are still a student with a disability, are you taking all necessary steps to ensure your academic success? Do your professors understand their obligations pursuant to the ADA? If you are preparing to enter the workforce, what are some of the "unwritten rules" about disclosure? How do you bring up the subject of accommodations to a potential employer? Are there certain times when you should always or never disclose? These are some of the pressing questions that will be on the table during this BOF. I want the target audience to leave more confident and informed about how they will confront this personal matter. Hopefully, members from the Federal and private sectors will attend as well. The input from employers would be invaluable as another viewpoint to consider when they make their decision with an employer.

BOF Organizer: **Christopher J. Ware**, University of Delaware

Empower The Campus By Bringing Your "XX" Factor Out

Location: Hanover D

The aim of the session is to inspire the exceptional students (be it technical, management or leadership) OR just want to discover and venture into a new direction. We want to lay the groundwork for development of student communities that can evolve, support, sustain and grow - all by itself. The motto is 'Give back to the community by elevating your own skills'. In the first half, the agenda would be to appeal and provide guidance on how they can give back to the community. Being coders that we are, we understand best when we build things ourselves. Keeping this spirit in mind, in the second half, there will be a working session where tools and organizational packages, will be provided with focus on holding zero budget events on and around their campus. The aim of working session would be to help audience brainstorm, plan and come up with the first prototype of their own activity. Some of the examples of such events would be - open source hackathon, Night coding contests in hostels, Blind coding contest,



THURSDAY PROGRAM SCHEDULE

Competitive coding groups, Code-labs - Android, Progressive Web Apps, Design sprint, Discussion Sessions, Go beyond your college - bring business online, Train basic tech to elderly women - docs, drive, gmail, blog etc. Most of these ideas have proven instrumental in bringing out initiatives to create impactful communities over the globe. A website containing further information was created: <https://womenleadweb.wordpress.com/>

BOF Organizer: **Chhavi P. Gupta**, Google

Hispanics in Computing Community

Location: Centennial I

The Hispanics in Computing community was founded a few months before the Tapia 2009 Conference. Since then, the group has been meeting at this annual conference. The group has grown in numbers and online presence (Facebook, LinkedIn, and <http://www.hispanicsincomputing.com/>). The impact of this gathering in our community has been tremendous. Several members of the community that attended our BoF as young graduate students are now in tenure track positions or employed in research organizations. This BOF will allow many of us to meet face to face and to welcome new members to our group. The goal for this year's gathering is to explore how to do virtual mentoring to help increase ties within the community. Bringing us together allows us to continue nurturing and sponsoring younger Hispanics to succeed in computing.

BOF Organizers: **Manuel A. Pérez Quiñones**, University of North Carolina at Charlotte; **Jose Andre Morales**, Carnegie Mellon University; **Daniel Garcia**, UC Berkeley EECS; **Patricia Ordoñez Rozzo**, Universidad de Puerto Rico, University of Puerto Rico, Río Piedras

5:00 PM – 7:00 PM

Poster Reception

Location: Regency Foyer & Regency Ballroom

Student Poster Competition & ACM Student Research Competition (SRC)

Location: Regency Ballroom

The Tapia technical student poster session provides an opportunity for undergraduate and graduate students to present their latest research results and methodologies to a wide conference audience. Winners of the top posters

(1st, 2nd, & 3rd place) will be recognized at the conference banquet.

For the first time Tapia 2017 is hosting an ACM Student Research Competition (SRC), sponsored by Microsoft Research. The ACM SRC consists of two phases: (1) poster presentation (being part of the traditional research poster session), and (2) research talk. In Phase 2, selected students will give a short presentation of their research before a panel of judges in a special session at Tapia 2017. The winners of the ACM SRC competition at Tapia will be invited to participate in the ACM Student Research Competition Grand Finals.

Graduate Posters

1. *A Real-Time Sign-Language Learning Tool*

Presenter: Fathima Nuzla Ismail (Asia Pacific Institute of Information Technology)

2. *Privacy-Preserving Coordination in Smart Communities*

Presenter: Parisa Kianmajd (University of California, Davis)

3. *Communication in Prediction Games*

Presenter: Gabriel Dzodom (Texas A&M University)
Co-authors: Frank Shipman (Texas A&M University),
Meghanath Junnutula (Schlumberger)

4. *Knowledge Discovery, Integration and Communication for Extreme Weather and Flood Resilience Using Artificial Intelligence: Flood ai Alpha*

Presenter: Yusuf Sermet (University of Iowa)

5. *Personalizing Hospital-stay Summaries for Patients*

Presenter: Sabita Acharya (University of Illinois at Chicago)
Co-authors: Barbara Di Eugenio, Andrew D. Boyd, Richard Cameron, Karen Dunn Lopez, Pamela Martyn-Nemeth, Carolyn Dickens, Amer Ardati (all from the University of Illinois at Chicago)

6. *The Impact of Persuasive Principles on Shoppers' Continuance Intention In E-commerce*

Presenter: Ifeoma Adaji (University of Saskatchewan)

7. *Implementation of Active Learning Techniques in an Online Information Security Graduate Laboratory Course*

Presenter: Carlos Velez (Polytechnic University of Puerto Rico)
Co-author: Alfredo Cruz (Polytechnic University of Puerto Rico)

THURSDAY PROGRAM SCHEDULE



8. Forecasting Research Trends by Mining Literature Findings

Presenter: Alex Morales (University of Illinois at Urbana-Champaign)

9. Analysis of Real Estate Prices in Texas

Presenter: George Kurian (Florida A&M University)

10. Protein Secondary Structure Detection using Pattern Recognition and Modeling

Presenter: Tunazzina Islam (Old Dominion University)

11. AquaHaptic: Water Based Navigation System

Presenter: Larry Powell (Texas A&M University)

12. CUDA++: A Template-Based Meta-Programming Model for GPUs

Presenter: Nyalia Lui (Indiana University-Purdue University Institute)
Co-author: James H. Hill (Indiana University-Purdue University Institute)

13. Are you a Foodie? Detecting the Spiciness of Food Using Wearable

Presenter: Anamika Paul Rupa (University of Maryland, Baltimore County)
Co-author: Arpita Roy (University of Maryland, Baltimore County)

14. Growing Signatures of Knowledge Interactions with Hyperedge Replacement Grammars

Presenter: Salvador Aguinaga (University of Notre Dame)
Co-author: Tim Weninger (University of Notre Dame)

15. Preference Elicitation in DCOPs for Scheduling Devices in Smart Buildings

Presenter: Atena M Tabakhi (New Mexico State University)

16. An Approach for Preference-based Matching in Residential University Roommate Markets

Presenter: Onyeka Emebo (Montclair State University)

17. An Interactive Learning Tool for Early Algebra Education: Design, Implementation and Evaluation

Presenter: Adam Scharfenberger (The Ohio State University)
Co-authors: Siva Meenakshi Renganathan, Christopher Stewart, Arnulfo Perez, Rashmi Rao (all from The Ohio State University)

18. Assessing Learning Behavior and Cognitive Bias from Web Logs

Presenter: Bailey Braaten (The Ohio State University)
Co-authors: Rashmi Rao, Christopher Stewart, Arnulfo Perez, Siva Meenakshi Renganathan (all from The Ohio State University)

Undergraduate Posters

19. An Electronic Nose that can Detect Explosives

Presenter: Anisa Bici (University of Michigan-Dearborn)

20. Scrambler: Dynamic Layout Adaptation

Presenter: David Chang (Grinnell College)
Co-authors: Thu Nguyen, Niko Takayasu (all from Grinnell College)

21. Airbrb: Predicting Loyalty

Presenter: Louise Y. Lai (New York University)
Co-authors: Erica Ram (Adelphi University), Kaciny Calixte (SUNY Old Westbury), Jacqueline Curran (Manhattan College)

22. Network Installation and Recovery with Blackstart Nodes

Presenter: Kayla S. Cummings (Pomona College)
Co-authors: Janie L. Neal, Andi Chen, Tzu-Yi Chen (all from Pomona College)

23. Fare Share: Flow and Efficiency in NYC's Taxi System

Presenter: Marieme Toure (CUNY New York City College of Technology)
Co-authors: Abraham Neuwirth (Touro College), Jai Punjwani (Adelphi University), Fatima Chebchoub (CUNY New York City College of Technology)

24. caveGEOmap: Implementing the Use of Labels in Cave Mappings

Presenter: Yessebell Rios Correa (University of Puerto Rico-Arecibo)
Co-authors: Genesis R. Velazquez Reyes, Jose Candelaria (all from the University of Puerto Rico- Arecibo)

25. Using Deep Learning and Machine Learning Techniques to Teach Computer to Paint Masterpiece Art

Presenter: Gaston Seneza (Philander Smith College)



THURSDAY PROGRAM SCHEDULE

26. Robot Planning Graphs as Metabolic Pathways for Drug Target Identification in Biological Organisms

Presenter: Jonathan Mulhern (SUNY Albany)

27. Counting Magic Venn Diagrams

Presenter: Phillip Morris (University of West Georgia)

28. Encryption-Based Privacy Protection For Police Body-Worn Cameras

Presenter: Daniel T. Martinez (University of Maryland, Baltimore County)

Co-author: Clair Cochran (Temple University)

ACM SRC Competition Posters

29. Hardware Trust Model in Cloud Security {Graduate}

Presenter: Nevrus Kaja (University of Michigan - Dearborn)

30. A Gaze Gesture-Based Paradigm for Rich and Accessible Human-Computer Interaction {Graduate}

Presenter: Vijay Rajanna (Texas A&M University)

Co-authors: Tracy Hammond (Texas A&M University)

31. Improving Visual Accessibility of R STUDIO and GITHUB {Graduate}

Presenter: Thomas Hahn (University of Arkansas at Little Rock)

Co-authors: Richard Segall (Arkansas State University), Fusheng Tang (University of Arkansas at Little Rock)

32. Analyzing Experts' Low-level Perception Tasks While Doing 3D Image Segmentation {Graduate}

Presenter: Anahita Sanandaji (Oregon State University)

Co-authors: Cindy Grimm (Oregon State University), Ruth West (University of North Texas)

33. Tactile Access to Visualized Statistical Data Using R {Graduate}

Presenter: JooYoung Seo (The Pennsylvania State University)

34. SketchTivity: An Intelligent Tutoring System for Teaching Sketching Fundamentals {Graduate}

Presenter: Blake Williford (Texas A&M University)

35. Towards Personalized Performance Feedback by Mining the Dynamics of Facial Keypoint Data {Graduate}

Presenter: Christian E. Lopez (The Pennsylvania State University)

36. A Two Tier Recognition System for Recognizing Brushing Teeth {Graduate}

Presenter: Josh Cherian (Texas A&M University)

Co-author: Tracy Hammond (Texas A&M University)

37. Modeling Effects of Noise on Dynamics of Hodgkin Huxley Style Neuronal Model {Graduate}

Presenter: Thakshila Madushani Herath (Georgia State University)

Co-authors: Vadym Apalkov, Gennady Cymbalyuk, Naranjan Edirisinghe (all from Georgia State University)

38. Integrating Data Science into Cybersecurity Education via Hands-on Labs {Graduate}

Presenter: Temilola Aderibigbe (Florida A&M University)

Co-author: Hongmei Chi (Florida A&M University)

39. A Framework for Monitoring Privacy in Mobile Health Apps {Graduate}

Presenter: Anteneh Tefera (Florida A&M University)

Co-author: Hongmei Chi (Florida A&M University)

40. SmartStrokes: Evaluating Digital Cognitive Tests on Healthy Elderly Individuals {Graduate}

Presenter: Raniero Lara-Garduno (Texas A&M University)

Co-authors: Tracy Hammond (Texas A&M University), Nancy Leslie (Texas Brain and Spine Institute)

41. Improving Usability of Safety Critical Requirements Traceability {Graduate}

Presenter: Micayla Goodrum (University of Notre Dame)

Co-authors: Ronald Metoyer, Jane Cleland-Huang (all from the University of Notre Dame)

42. Detecting Mind Wandering During Film Viewing {Graduate}

Presenter: Angela Stewart (University of Notre Dame)

Co-authors: Sidney D'Mello, Nigel Bosch (all from the University of Notre Dame)

THURSDAY PROGRAM SCHEDULE



43. Myth, Mystery, and Patchwork: Designing for a Family Collective Memory Keeping {Graduate}

Presenter: Jasmine Jones (University of Michigan- Ann Arbor)

Co-author: Mark Ackerman (University of Michigan- Ann Arbor)

44. A Parallel Approximation Algorithm for Scheduling Parallel Identical Machines {Graduate}

Presenter: Laleh Ghalami (Wayne State University)

Co-author: Daniel Grosu (Wayne State University)

45. caveGEOmap: Developing a GUI that Unifies and Streamline a Speleology Data Analysis Software {Undergraduate}

Presenter: Elliot Lopez (University of Puerto Rico-Arecibo)

Co-author: Jose Candelaria (University of Puerto Rico-Arecibo)

46. Change from Cartesian to Speleologist Coordinates {Undergraduate}

Presenter: Gustavo Jose Rivera Roca (University of Puerto Rico-Arecibo)

Co-author: Jose Candelaria (University of Puerto Rico-Arecibo)

7:00 PM – 9:00 PM

ABI Communities Reception

Sponsored by the Anita Borg Institute

Location: Centennial I

Join Anita Borg Institute communities (Systems, Black Women in Computing, Latinas in Computing, and more) for an informal meetup to meet members, learn about their initiatives and how to engage. Our communities are engaged in open source social impact projects, professional and peer mentoring through programs like Google Summer of Code and Google Code In and technical conferences and meetups. ABI Communities are engaged in various programs, involved in their own tech initiatives to engage and impact their communities as well and teach others how to get involved. This is a great networking opportunity!



FRIDAY PROGRAM SCHEDULE

7:00 AM – 8:00 PM

General Breakfast

Location: Centennial Foyer & Centennial II-IV

Hispanics in Computing Breakfast

Sponsored by IBM & Equitable Tech

By invitation only

Location: Regency VI

Square Student Breakfast

Sponsored by Square

Pre-registration required

Location: Regency V

Come join us for breakfast with Squares! Learn about what opportunities we have and what challenges we're working on. We'll cover everything from how Square finds top talent and how to get started at a tech company. Attend this breakfast if you are interested in a potential career in tech, or just curious about how things work at Square!

8:00 AM – 8:30 AM

Announcements

Location: Centennial II-IV

8:30 AM – 9:15 AM

Plenary Speaker

Location: Centennial II-IV

New Interfaces in Neural Computing

Avani Wildani, Assistant Professor, MathCS and Neuroscience, Emory University

"Technology is the active human interface with the material world." -UK LeGuin

Computer science is the art of reducing complex, messy real-world problems to tractable abstractions. The layers of abstraction developed by computer scientists over the last fifty years have formed a diverse ecosystem of high level paradigms to create, understand, and distribute information with speed, reliability, and efficiency.

Neuroscience today is done at what we could consider the "transistor level," but the questions neuroscientists face are often identical to those asked by current frontiers of computing. These questions include "How should data be represented, and how do we decide what to keep?" or "How much power does it cost to build our network, and can we do better?" In this talk, we will explore the parallels

between problems involving power efficiency, redundancy, and structure between distributed computing and biologically plausible neural-networks, and in this translation demonstrate the power of an interdisciplinary approach to neural computing.

BIOGRAPHY:

Dr. Avani Wildani is an Assistant Professor in MathCS and Neuroscience at Emory University. Prior to that, she was a Pioneer Postdoctoral Fellow in computational neuroscience at the Salk Institute for Biological Sciences. She has worked as a systems administrator, video game tester, and lab animal wrangler as well as research internships at Google, IBM Almaden, and Sandia National Laboratories. She earned her B.S. in Computer Science and Mathematics at Harvey Mudd College and her Ph.D. in Computer Science at UC Santa Cruz under Dr. Ethan Miller. Her interests are centered around information storage and retrieval across different storage models, with application domains including access prediction, data deduplication, archival economics, power management, wireless mesh networks, auditory receptive field characterization, and pollution monitoring.

She is the co-PI of the SimBioSys lab at Emory, and her group focuses on information models in cloud and communication systems, particularly those with biological connections, with a long term goal of categorizing neural information. She was co-chair of the inaugural computer systems track at the 2016 Grace Hopper Celebration of Women in Computing, and is mad enough to do it again this year.

9:15 AM – 9:30 AM

Break

9:30 AM – 10:15 AM

Plenary Speaker

Location: Centennial II-IV

Leveraging Fine-grained Data Flows in Web Applications

James Mickens, Associate Professor of Computer Science, Harvard University

A modern web page contains megabytes of HTML, CSS, images, and JavaScript. Loading such a page requires a browser to evaluate a complex dependency graph involving

FRIDAY PROGRAM SCHEDULE



those resources; once the page is loaded, subsequent interactions between those resources and the user can lead to tricky-to-diagnose bugs. In this talk, I'll describe how tracking fine-grained data flows can allow us to reduce page load times by prioritizing the loads of the highest ancestors in the data flow graph. I'll also describe initial work in using data flows to assist with time-travel debugging (in which developers use a logging-and-replay framework to analyze buggy program executions).

BIOGRAPHY:

James Mickens is an associate professor of computer science at Harvard University. His research focuses on the performance, security, and robustness of large-scale distributed web services. Mickens received a B.S. degree in computer science from the Georgia Institute of Technology in 2001. In 2008, he received a Ph.D. in computer science from the University of Michigan. Before coming to Harvard, he spent six years as a researcher at Microsoft. He is also the creator of Mickens-do, a martial art so deadly that he refuses to teach it to anyone (including himself).

10:00 AM – 5:00 PM **Conference Exhibits**

Location: Grant Hall West

The exhibit hall is only open today for conference participants who are interviewing with Tapia 2017 sponsors

10:15 AM – 10:45 AM **Refreshment Break**

Location: Centennial Foyer

10:45 AM – 12:15 PM **SRC Competition Round II**

Location: Kennesaw

Faculty Workshop Part I: NSF Funding Opportunities

Location: Regency VI

This session will focus on various funding opportunities at the National Science Foundation (NSF). In particular, the session will feature Kamau Bobb, former Program Officer in the Directorate for Computer & Information Science & Engineering (CISE) and Amy Baylor, Program Officer in the Directorate for Education & Human Resources (EHR). Kamau and Amy will provide details about the programs in CISE and EHR and address questions from the audience.

Session Presenters: **Kamau Bobb**, Former Program Officer at NSF and **Amy Baylor**, Program Officer at NSF

Computation in Chemistry

Location: Hanover A

With the advancement of computational technology (computer modeling, parallel computing and machine learning) and the improvements of hardware, researchers have started to use computers more heavily in their work. These technologies are invaluable in providing a starting point for chemical studies, such as drug development and data analysis. Using these methods, it is possible to expand our comprehension of a variety of chemical processes and drug mechanisms. Therefore, we plan to give a short review of current chemistry software and a hands-on session of drug discovery process.

Workshop Organizers: **Neranjan Suranga Edirisinghe**, Georgia State University; **Mengyuan Zhu**, Georgia State University; **Kenneth Huang**, Georgia State University

The Art of the Demo: How to Create Engaging 15 Minute Outreach Activities

Location: Hanover B

You have just been invited to a STEM festival, Science Fair, or middle school classroom and given just 15 minutes to promote your outreach program. How can you best capture audience attention and excite them about technology? We have found great success in using hands-on technology demonstrations. These demos use compact, portable technologies such as tablets and alternative input devices like Leap Motion and Makey Makey. The focus is on audience participation and interaction with technology.

This workshop will provide tips on how to effectively create and use technology demonstrations at a variety of outreach events. After hearing a brief overview what makes an engaging demonstration, workshop participants will rotate through 3 separate hands-on demos using low-cost technologies.

Through this experience, workshop participants will learn how to implement the demos shown and how to adapt some of their existing work into a demo format. Educational resources will be available on a workshop web site.

Workshop Organizers: **Nannette Napier**, Georgia Gwinnett College; **Sonal Dekhane**, Georgia Gwinnett College; **Xin Xu**, Georgia Gwinnett College



FRIDAY PROGRAM SCHEDULE

Made in the Machine: New Cultural Practices, Critical Analyses, and Techniques in Digital Fabrication, Making, and Manufacturing

Location: Hanover F

What does the so-called “maker movement” and its embrace of open source hardware mean for the underlying politics and socioeconomics of small- and large-scale manufacturing? What are the implications for minorities as a new political regime attempts to “bring back manufacturing jobs” to the United States? Are new opportunities opening up for historically underrepresented groups? Do the same historical bigotries persist in a different guise? This workshop aims to explore these questions. It will focus on relevant hardware and software tools, an introduction to fabrication machines and culturally-aware methods for using and teaching these technologies, and basic considerations for structuring a culturally-aware engineering course. Participatory workshop activities include 1) Making and Meta-Making: Learning the Anatomy of Digital Fab Machines to Make What You Want; 2) Critical Examination: Considering the Sociopolitical, Demographic, Economic, and Ethical Histories of Digital Fabrication; 3) Synthesis: Digital Fabrication for the Community.

This workshop, by Professor Arlene Ducao, is based on her NYU graduate course. Listed in NYU’s catalog as “Digital Fabrication,” the course’s scope aims beyond the teaching and sharing of fabrication techniques; instead, the course is structured to provide opportunities for embodied learning, physical fabrication, self-reflection, historical examination, and critical synthesis.

Workshop Organizer/ Moderator: **Arlene Brigoli Duao**, New York University

Maximizing Your PhD: Preparing for Academia or Industry

Location: Hanover D

To maximize success as a graduate student there are several of best practices that students should follow. Students are rarely given clear goals and descriptions of what is expected along their path. In this workshop session we describe what it takes to be an attractive candidate for academic or industry positions. First, we discuss the benefits of choosing academia or industry. We describe traditional and nontraditional career opportunities available to doctoral graduates. Second, we provide well-defined criteria to be competitive in either academia or industry. We discuss the expected range of

publications, industry experience and teaching appointments to be a highly qualified candidate. At the conclusion of the workshop, undergraduate and graduate students will be able to design or improve their roadmap to maximizing ability to obtain an academic or industry position. One interesting aspect of the workshop is that we explicitly contrast the requirements for academia vs industry.

Workshop Organizers: **Corey E. Baker**, University of Kentucky; **Pierre St Juste**, Google; **Christan E. Grant**, University of Oklahoma

Taking on the Technical Interview

Location: Centennial I

The job search (be it for an internship or a full-time) for a software engineering position usually involves one or more technical interviews. We’d like to provide tips, tricks, strategies and practice to help you present your technical abilities during this often stressful process.

Workshop Organizers: **Eric Yurko**, Google; **Antoine Picard**, Google; **Cynthia Lee**, Stanford University; **Kaanon MacFarlane**, Pinterest

Managing Career Transitions

Location: Hanover C

Given the rate at which things change in the field of computing, it is expected that professionals will change careers at least once or possibly more. The change can be to different companies, institutions, or government agencies or between the different entities. The change often requires major time for adjustment to new environments and new responsibilities. This is especially the case underrepresented women in computing, where the numbers are very small. This panel will discuss effective strategies for managing the adjustments and insights as to when transitions may be advantageous to one’s career.

Moderator: **Cheryl Swanier**, Claflin University

Panelists: **Cheryl Seals**, Auburn University; **Felicia Doswell**, Norfolk State University; **Albanie Bolton**, Alcorn Sate University

FRIDAY PROGRAM SCHEDULE



Befriending Failure is Simply Smarter!

Location: Hanover E

Nobody likes to fail yet Women and minorities have learned that failures are to be avoided, at all costs, and there is evidence that they have learned this from the experience of facing and anticipating discrimination. Studies have shown that women are so averse to failure that they don't apply for jobs unless they feel 100 percent qualified. Minorities fear that failure will expose what they do not know and that the failure will be used to justify negative stereotypes in the culture. Women derive less confidence from positive feedback than men of the same caliber, and negative feedback takes a greater emotional toll. This panel is an effort to normalize failure. The panel shares failures that have been part of their personal and professional life. And not just those failures that had a happy ending, but also those that were just that, failures. What do we do with them? Do they all have silver linings? Can they be understood, embraced and let go? In addition to discussions and Q&A, we will use improvisational play to shift the focus away from failure avoidance towards building and learning as a group to accept, embrace and let go. In this interactive panel session, the audience and panel will play with failure.

Panel Moderator: **Bushra Anjum**, Amazon

Panelists: **Maria Patterson**, University of Washington;
Misbah Mubarak, Argonne National Laboratory; **Raquell Holmes**, improvscience

Grassroots Mentoring: Creating Communities to Succeed in Technology

Location: Chicago A-D

With the challenges that face the world, Technology has been at the forefront of innovation and change. The problem is that many communities don't have access to technology to become part of the innovation. While many are still trying to solve the diversity issues, many of us are working at the grassroots level to close the digital divide. This panel will site various efforts on how Grassroots Mentoring is helping communities to succeed in technology through innovative and creative initiatives at the local level. Many of us are collaborating, supporting and driving change in smaller more impactful local communities. Join Rose Robinson, Jose

Marquez-Leon, Darlene Gillard and Elizabeth Bautista in an engaging conversation about how true change happens at the local level.

Moderator: **Rosario Robinson**, Anita Borg Institute

Panelists: **Jose A. Marquez-Leon**, Latinos in Information Sciences and Technology Association (LISTA); **Darlene Gillard Jones**, digitalundivided (DID); **Elizabeth Bautista**, Lawrence Berkeley National Laboratory

12:15 PM – 1:30 PM

General Networking Luncheon

Location: Centennial Foyer & Centennial II-IV

Faculty Luncheon

By invitation only

Location: Regency V

1:30 PM – 3:00 PM

Panels & Workshops

Faculty Workshop Part II: Student Retention

Location: Regency VI

The second part of the faculty workshop will focus on student retention of underrepresented students, as it is recognized that good retention is important to improve student graduation rates. The session will include a presentation from the recipient of the CMD-IT University Award for Retention of Minorities and Students with Disabilities in Computer Science. The presentation will be followed by engaging discussions about recruiting, yield, retention and graduation. The goal of this session is to provide an opportunity for participants to share good practices as well as learn about good practices related to student retention.

Machine Learning at Pinterest

Location: Hanover A

Pinterest aims to be the world's catalog of ideas. Our mission is to provide users with carefully personalized content that accurately targets their interests while providing new ideas from which to draw inspiration. In this sense, we work towards solving the unique problem of emulating human taste and preference in recommendations that simultaneously maximize relevance and accuracy. To this end, we use cutting-edge machine learning techniques on our vast dataset of over 300 million users and 50 billion pins. This talk



FRIDAY PROGRAM SCHEDULE

will give a general overview of such techniques and how they are used by different teams across the company. In addition, there will be a discussion on the different challenges posed by using machine learning to solve large-scale problems in the technology industry.

Workshop Organizer: **Javier Llaca Ojinaga**, Pinterest

Lessons from a Developer in DevOps

Location: Hanover B

DevOps, software developers working on or within operations teams, is becoming more common across the high-tech industries but remains mystifying to many technologists who haven't experienced Ops first hand. Joining Google's specialized team of engineers working on operations automation and tooling, the Site Reliability Engineers (SREs), I learned new skill sets that had been missing in my decade as a successful software engineer. The organizational best practices that allow SREs to keep Google-scale infrastructure running smoothly, and the hard laws of designing software systems that scale in real-world physical constraints.

Workshop Organizer: **Danielle H. VanDyke**, Google Inc.

Discovering Careers with Code - Engage & Retain Diverse Students with CS + X Career Resources

Location: Regency VII

Our 2014-2016 Google-Gallup study explored the state of computer science (CS) education for diverse students in the U.S. We found that despite high value of CS across demographics, underrepresented students in particular not only lack exposure to CS early on, they also lack access to computers and role models. Further, students rarely see relatable media portrayals of computer scientists [1]. Using Careers with Code, participants in this session will learn strategies to diversify portrayals and exposure to CS in classes and discussions. Recruit students to explore CS: Align introductory courses and outreach programs to engage diverse students. - Highlight computer scientists from all backgrounds: Learn about resources that highlight 80+ computer scientists and their career pathways. - Integrate CS+X concepts to broaden participation: Engage in strategies

to broaden perceptions that CS exists only in 'tech' careers; 67% of computing jobs are in retail, banking, transportation, entertainment, agriculture, manufacturing, government [2].

- Try out Careers with Code's Educator Guide: Explore ways to use Careers with Code resources in teaching. - Demo CS Career Expeditions: Try Google's 360° virtual reality (VR) career tours that showcase a day in the life of CS careers (and bust stereotypes). Careers with Code is a free magazine (also online at www.careerswithcode.com) that inspires students to use problem solving CS skills to create the future. Created in partnership with Google and Refraction Media, Careers with Code redefines stereotypes around computer science careers. It includes step-by-step checklists and inspiring ideas to help students create their CS pathway.

Workshop Organizers: **Abby B. Daniels**, Google; **Jennifer Wang**, Google; **Yvonne Melton**, Google

The Art of Innovation and "The Pitch"

Location: Hanover D

Do your innovative ideas get the attention they deserve? Would you like to refine those ideas and pitch them to a panel of technology experts, "Shark Tank" Style? In this interactive technology innovation accelerator workshop, you will have an opportunity to work with peers and experts to generate ideas to present, evaluate, refine, and ultimately transform into system concepts that solve relevant and challenging problems. We will discuss techniques and tools for brainstorming and concept development, provide technical presentation skills training. This is the perfect opportunity to practice innovation, to hone your skills for future innovative research and entrepreneurship, and to network. This workshop is being conducted in conjunction with MIT Lincoln Laboratory, Adobe and the National GEM Consortium. The "Sharks" will be senior leaders selected from attending technical companies.

Workshop Organizers: **William H. Kindred**, MIT Lincoln Laboratory; **Raoul Ouedraogo**, MIT Lincoln Laboratory; **Kevin Cohen**, MIT Lincoln Laboratory

FRIDAY PROGRAM SCHEDULE



Graduate STEM Degrees: Preparing an Effective Application

Location: Hanover F

This workshop is limited to 30 people.

This workshop will focus on graduate programs in engineering and computer science considering opportunities in STEM programs including cyber security, preparing an effective application, funding, and employment. There is a high demand for qualified candidates, but getting the job you want requires having the necessary skills. “Most cybersecurity bachelor’s programs don’t teach leadership skills or provide managerial training. As part of your master’s program, you’d be exposed to those important business tools and learn how to lead a team. These are essential qualities and skills if you want to advance in the cybersecurity field and land those senior positions.” (ClearanceJobs.com/Feb. 1, 2016: 8 Reasons to Get Your Master’s Degree in Cybersecurity).

Workshop Organizers: **Lisa Currin**, Carnegie Mellon University; **Alfredo Cruz**, Polytechnic University of Puerto Rico; **Jeff Duffany**, University of Turabo, Puerto Rico; **Miriam Pabón-González**, Polytechnic University of Puerto Rico

What No One Ever Told You About You About Searching for a Post-Grad School Job

Location: Hanover C

There are many career options available for individuals with graduate degrees in computer science and related fields. However, many graduate students only receive job search advice from their advisors and committee members —faculty members at research-focused institutions. This panel will allow you to hear the personal experiences and opinions of recent graduates who have survived this confusing job search process. The panelists have each volunteered to share the “behind the scenes” story of how they got to where they are today and answer audience questions such as: How did you decide which jobs to apply to? How many jobs did you actually apply to? How did you balance the needs of your family and your career? Did you manage to get any other work done while applying and interviewing for jobs? What would you do differently if you were going back and starting your search all over again?

Panel Moderator: **Madeline E. Smith**, Colgate University
Panelists: **Robin N. Brewer**, University of Michigan, Ann Arbor; **Nicholas Chen**, Microsoft; **Carolina Fuentes**, University of Nottingham; **Jeremy T. Barksdale**, Microsoft

Strategies for Human-Human Interaction

Location: Hanover E

This session will focus on strategies for productive interaction with colleagues (faculty/students, workplace), including the opportunities and challenges of being a woman and/or a minority in a computing technology career. Topics include inter-personal interaction dynamics, uncomfortable situations that might arise and how to react, the pros and cons of relationships with your fellow graduate students or department faculty, in the workplace, dealing with isolationism (i.e., “being the only one”), techniques for inclusion, and family-friendly policies to look for in a working environment.

Moderator: **Patty Lopez**, Intel Corporation

Panelists: **Rosa I. Arriaga**, Georgia Institute of Technology; **Nery Chapeton-Lamas**, Miracosta College; **Ana Medina**, Uber; **Palma Buttles-Valdez**, Carnegie Mellon University

Data Challenges for the Internet of Things

Location: Hanover G

The Internet of Things is anticipated to be the next major computing revolution, connecting billions of “Things” (and humans) and enabling many new applications. However, while there are some vendor-specific IoT offerings in some verticals, the realization of the more general vendor and sector agnostic Internet of Things will depend on overcoming several existing challenges. One major challenge is that of data management. It is clear that the volume of data in the era to IoT will significantly eclipse what is currently considered “Big Data”. But in addition to the issue of scale, other issues like data variety, interoperability, security and privacy, data ownership, policy and regulation management, real-time processing data management, etc., are all requirements that must all be met concurrently. This panel will discuss the data challenges in IoT, particularly how they differ from the traditional Big Data challenges and highlight open research questions and directions.

Moderator: **Kemafor Anyanwu Ogan**, North Carolina State University

Panelists: **Christopher Hall**, Bank of New York Mellon; **Dilma Da Silva**, Texas A&M University



FRIDAY PROGRAM SCHEDULE

Global Impact of Technology

Location: Chicago A-D

What role can, and should, companies play in tackling society's challenges on a local and global scale? In today's world, technology has transformed economies, cities, and daily life in unprecedented ways. With the emergence of AI, personal computing, biotech, machine learning, IoT and more, there has never been more uncertainty about what the future of humanity holds. Technology companies now have an opportunity, and perhaps an obligation, to be leaders of social progress. This session will dive deep into how leaders in technology are not only thinking about corporate social responsibility, but also challenging how their core businesses can be direct agents in driving progress through engineering-led solutions.

Moderator: **Clarice Chan**, Microsoft

Panelists: **Jim Wetzler**, Lyft; **Seema Singh**, GE

3:00 PM – 3:30 PM

Refreshment Break

Location: Centennial Foyer

3:30 PM – 5:00 PM

Workshops & Panels

Using “Why” to Build a Better “What”: A Human Centered Approach to Systems and Data

Location: Hanover A

Human-centered Design (HCD), a design framework that puts user's needs at the center of every stage of a process or product, is widely known for its impact on product development and customer experience design. This workshop explores the application of Human Centered Design concepts to systems and data analysis. The natural tendency is often to focus on the outcome or product and finding ways to sell people on it. HCD flips this and starts by focusing on what people really need, so the end result is a more desirable product. Obvious in theory, but harder in practice, coupling human centered design with Simon Senik's “Start with Why,” creates a holistic strategy to approaching both working life and processes and analysis that cuts through clutter. Perfect for this year's conference theme, these concepts inspire empathy and inclusiveness, and ensure a way of working that promotes aligning true needs and value proposition.

Workshop Organizer: **Nicole de Vries**, Georgia Institute of Technology

Using Learning and Engagement Strategies in Software Engineering and Programming Courses (LESSEP17-3)

Location: Hanover B

The Using Learning and Engagement Strategies in Software Engineering and Programming Courses (LESSEP) workshop introduces participants to various online learning and engagement strategies (OLESS) and how these strategies are used in SEP-CyLE (Software Engineering and Programming Cyberlearning Environment). These OLESS include collaborative learning, gamification, problem-based learning and social interaction.

Students pursuing STEM degrees, including CS/IT degrees, face several barriers towards the completion of their degrees including: (1) low passing rates in gateway courses, (2) lack of preparation for courses throughout the degree programs, and (3) a lack of student engagement, particularly when using online environments. Each of these barriers can be overcome through the use of online learning and engagement strategies (OLESS) as we present in this workshop.

The focus of the workshop will be to introduce participants to (1) using SEP-CyLE in the classroom, (2) using various combinations of OLESS in the classroom to improve student learning, and (3) forming a community of instructors that contribute to the use and development of digital learning objects (DLOs). At the end of the workshop participants should: (1) be able to use SEP-CyLE in their classes, e.g., setting up courses, accessing student reports, and assigning DLOs; (2) have an increased knowledge of OLESS and how they can be used to improve student learning; and (3) be able to create and review DLOs in SEP-CyLE.

Workshop Organizers: **Peter J. Clarke**, Florida International University; **Debra L. Davis**, Florida International University; **James Kiper**, Miami University; **Edward Jones**, Florida A&M University

Guiding Students to Discover CS Concepts & Develop Process Skills using POGIL

Location: Hanover F

This workshop introduces Process Oriented Guided Inquiry Learning (POGIL) to anyone who teaches CS or related subjects. POGIL is an evidence-based approach, and has been shown to significantly improve student performance. In a POGIL classroom, teams of 3-4 learners work on activities with a particular structure based on learning cycles. Students discover concepts and construct their own knowledge, while developing process skills and individual responsibility. The teacher is not a lecturer, but an active facilitator who helps all

FRIDAY PROGRAM SCHEDULE



students to be engaged and achieve the learning objectives. Workshop participants will work through POGIL activities as students, and work through POGIL meta-activities that are designed to help teachers learn core POGIL concepts, practices, and benefits. We will share POGIL materials for a variety of CS courses and concepts. For more information, see <http://cspogil.org> and <http://pogil.org>, including activities for CS1, CS2, and other courses. Laptops optional.

Workshop Organizer: **Helen H. Hu**, Westminster College

National-Scale Committee: The Process and The Requirements

Location: Regency VI

It is recognized that national-level policy and strategy are heavily influenced by committees to allow for broad input and engagement. Examples of such committees include the various Advisory Committees for the different directorates at the National Science Foundation or the American Association for the Advancement of Science's Committee on Opportunities in Science. This panel will discuss the process for board membership and the workload required when servicing as a board member.

Moderator: **Valerie Taylor**, Argonne National Laboratory

Panelists: **Ann Gates**, University of Texas at El Paso;

Shawndra Hill, Microsoft; **Charles Isbell**, Georgia Institute of Technology; **Patty Lopez**, Intel

Fairness, Accountability and Transparency in Algorithmic Decision Making

Location: Hanover C

Decision making, once the exclusive purview of human experts, is now often offloaded to artificial intelligence (AI) systems. The range of such applications is steadily increasing – from benign recommendations by Amazon, Netflix and Facebook, to credit approval decisions and law enforcement predictions. Algorithmic decision making systems promise data-driven predictions free from human bias. However, recent high profile cases such as modern face recognition systems which may be highly sensitive to skin color, and modern credit and loan decision systems that may be biased by race, remind us once again that artificial intelligence and algorithmic decision making systems are only as good as their design. How do AI decisions compare to the track records of the human experts they have replaced? What are the roles of systems designers, the law, and activists in the design, maintenance and oversight of these systems? The

panel will these issues with a focus on both the successes and failures of automated decision making systems, their current and future impact on society, and what can be done to ensure that such systems are fair, accountable, transparent and free of bias.

Moderator: **Sanmi Koyejo**, University of Illinois at Urbana-Champaign

Panelist: **Curtis Owens**, Fidelity Institutional; **Timnit Gebru**, Microsoft; **Ayana Howard**, Georgia Tech

From Research to Startup

Location: Hanover E

Traditional paths after graduate school is to continue in academia, do research at industry labs or work at big companies. However, another path that deserves more discussion is startups. This panel will address the question: what is the relationship between research and startups? Discussion will be centered around how research training from graduate school be an asset for startups. Additionally, what are the paths to turn research into a startup.

Moderator: **Juan F. Sequeda**, Capsenta

Panelists: **Rachel Miller**, Asana; **Andy Konwinski**, Databricks; **Oyekunle Olukotun**, Stanford University

Distributed Systems Unplugged: Sustainability & Energy Efficiency at the Edge

Location: Hanover G

Cool cyber-physical, smart city and edge computing products are ready to blow up consumer and B2B markets, but power and energy consumption get in the way. It is critical to design and program these products for sustainability and energy efficiency. These metrics should affect the user interface, data schemas, operating systems and processor architecture. This panel will ask participants to think outside of the box. How can we optimize for energy efficiency and sustainability across the lifetime of product? How can break tradition that focuses on just 1 aspect of computer systems at a time (e.g., OS vs networking vs user interface) and encourage holistic thinking.

Moderator: **Christopher Stewart**, The Ohio State University

Panelists: **Frank Brooks**, GE; **Dorian Arnold**, Emory University; **Dilma Da Silva**, Texas A&M University; **Beth Trushkowsky**, Harvey Mudd College



FRIDAY PROGRAM SCHEDULE

Tech Tales: The Silicon Valley Tech Experience for People of Color

Location: Centennial I

According to 2014 data from the U.S. Equal Employment Opportunity Commission in its Diversity in High Tech report, the high-tech sector was 7.4% Black and 8.0% Hispanic. These numbers are even lower for most Silicon Valley tech companies, with numbers of Blacks and Hispanics hovering closer to 1-2%. Because of numbers like these, attaining jobs in the Silicon Valley can seem daunting to students of color pursuing technical degrees with hopes of working in some of the world's most popular tech companies. This session will share insights into how professionals of color with various career pathways and diversity of backgrounds were able to navigate the Silicon Valley tech ecosystem. The goal of this session is to provide a window into these pathways into tech while giving attendees the freedom to ask pointed questions about the realities of the Silicon Valley tech experience. A moderated discussion will follow the panel presentation.

Moderator: **Tiffany Price**, Kapor Center for Social Impact

Panelists: **Lauren Frazier**, Super Heroic; **David Silva**, Techqueria; **Joy Dixon**, Mosaic Presence; **Anthony Velázquez**, Lyft

Finance and Technology

Location: Chicago A-D

As early as the 1950s, computer science, computer engineering and other have been applied to both theoretical and practical problems in finance. Today more than ever, computing related fields are critical elements of finance. This panel explores the obvious and not-so-obvious ways in which computing has been integrated into the finance field; current and emerging advances; and highlight why someone should consider careers in computing and finance.

Moderator: **Roderick Thomas**, BYN Mellon

Panelists: **Jerry Tierney**, BYN Mellon; **Nate Broyles**, Square; **Randy Lopez**, JP Morgan; **Lily Wang**, Goldman Sachs

5:00 PM – 6:00 PM

Birds of a Feather Session

Reach Forward, Reach Back – Using Peer Based Programs to Broaden Participation in Computer Science

Location: Chicago A-D

This session will focus on peer based programs designed to broaden participation in Computer Science. Faculty, staff, and students from UC Berkeley's department of Electrical Engineering and Computer Science will focus on peer led programs that have resulted in an increase in the number of women and underrepresented minorities in the department, including peer mentorship programs and implicit bias training. Participants will hear best practices for peer based programs in computer science with an emphasis on evaluation and training for peer leaders. Participants will also learn about how to replicate these programs on their own campuses.

BOF Organizers: **Armando Fox**, UC Berkeley; **Tiffany Reardon**, UC Berkeley; **Regina Eckert**, UC Berkeley; **Vasuki Narasimha Swamy**, UC Berkeley

VIP Reception

By Invitation Only

Location: Executive Conference Room 226

(Executive Conference rooms are located on 2nd Floor in the Atrium Tower above Sway Restaurant)

6:00 PM – 11:00 PM

Tapia Conference Banquet

Location: Centennial II-IV

2017 Banquet Keynote Speaker:

Dr. Randal Pinkett, Founder, Chairman and CEO, BCT Partners

Dr. Randal Pinkett has established himself as an entrepreneur, speaker, author and scholar, and as a leading voice for his generation in business and technology. He is the founder, chairman and CEO of his fifth venture, BCT Partners, a multimillion-dollar consulting, research, technology, and analytics firm headquartered in Newark, NJ.

Dr. Pinkett has received numerous awards for business and technology excellence including the Information Technology Senior Management Forum's Beacon Award, the National Society of Black Engineers' Entrepreneur of the Year Award,

FRIDAY PROGRAM SCHEDULE



and the National Urban League's Business Excellence Award. He has been featured on nationally televised programs such as The Today Show, Fox Business News, MSNBC, and CNN, and he has been recognized by USA TODAY newspaper as one of the top 20 scholars in the country. In 2009, he was named to New Jersey Governor Jon Corzine's official shortlist as a potential running mate for Lieutenant Governor of New Jersey. Dr. Pinkett has served as a brand ambassador for AMTRAK, Verizon Communications, and Outback Steakhouse, and as a national spokesperson for Autism Speaks, the National Black MBA Association, the MillerCoors Urban Entrepreneurs Series, New Jersey Reads, Junior Achievement of New York, and the Minority Information Technology Consortium. Most notably, Dr. Pinkett was the first and only African-American to receive the prestigious Rhodes Scholarship at Rutgers University. He was also the winner of NBC's hit reality television show, The Apprentice, having been selected as one of 18 candidates chosen from among 1 million applicants to compete for this opportunity.

Dr. Pinkett is a highly sought-after speaker for various corporations, colleges and universities, government agencies and community organizations. He is the author of *Campus CEO: The Student Entrepreneur's Guide to Launching a Multimillion-Dollar Business* and *No-Money Down CEO: How to Start Your Dream Business with Little or No Cash*. His latest book, *Black Faces in White Places: 10 Game-Changing Strategies to Achieve Success and Find Greatness*, presents the strategies African Americans and other emerging majorities use to successfully navigate today's rapidly changing professional landscape. *Black Faces in White Places* was named one of the "10 Best Books of 2010." Based on the book's "10 Game-Changing Strategies," Dr. Pinkett has launched the "Campaign to Redefine the Game," which represents a call to action for Americans to level the playing field in the 21st century workplace.

Dr. Pinkett is a proud member of Alpha Phi Alpha Fraternity Incorporated, the National Society of Black Engineers (NSBE), the National Black MBA Association (NBMBA), the Black Data Processing Associates (BDPA), and the Information Technology Senior Management Forum (ITSMF), as well as a member of the board of directors for the New Jersey Public Policy Research Institute (NJPPRI), the Nonprofit Technology Enterprise Network (NTEN) and the National Visionary Leadership Project (NVL). He is also a proud graduate of Leadership New Jersey and the Rockefeller Foundation's Next Generation Leadership program.



SATURDAY PROGRAM SCHEDULE

8:00 AM – 12:00 PM

Saturday Sessions

Bloomberg CodeCon

Sponsored by Bloomberg

Pre-registration required

Location: Learning Center

CodeCon is a programming contest developed in-house at Bloomberg. Push your programming and problem solving skills to the limit against the clock to win the title of Bloomberg CodeCon champion! All you need is your laptop, charger and your problem solving skills!

Learn about Big Data with Microsoft!

Sponsored by Microsoft and edX

Pre-registration required

Location: Hanover A

Microsoft Instructor led Training on Big Data available at Tapia! Would you like learn about Big Data? Data is being collected at ever increasing rates and is on its way to becoming the currency of the next generation of business. This makes it critical for companies to find people who can design the systems that capture, process and analyze data to create competitive advantage. In this post conference session, Microsoft will be providing half day instructor led introduction to Big Data training which is part of Microsoft Professional Program. Participants of this event will get credit (\$99 value) towards one of the courses in the Microsoft Professional Program. Students interested in this program should have the following:

- A high school level of mathematics knowledge.
- A basic familiarity with computers and productivity software such as Excel.
- A basic knowledge of programming concepts - such as variables, loops, and conditional logic.
- Some experience working with relational databases You will need to bring your laptop (with charger) and enthusiasm to learn.

High Performance Computer Networking: Moving Data Fast, Easily, and Securely

Sponsored by the Department of Energy National Labs & presented by Los Alamos National Labs

Pre-registration required

Location: Hanover E

High performance computing is a powerful tool that put into the hands of creative minds is helping humanity solve its hardest problems. Those problems span nearly every aspect of society and range from advanced manufacturing to

predicting the next superstorm and engaging disaster warning systems to improving medicine to fight the deadliest cancers and treat Parkinson's disease to routing 4 billion pieces of mail daily to combating credit card fraud and even to making better diapers. Supercomputers help us see structure in the chaos, find signals in the noise, and turn trillions of data points into answers to unlock radical innovation. This hands-on workshop will focus on the high-speed network - the nervous system that provides access to and unleashes the power of the supercomputer. After a brief introduction to HPC networking, including TCP/IP basics and networking technology, you will learn how HPC networking is the same and yet very different from networking in the wild. You will learn about advanced high speed networking fabrics, including InfiniBand and the Intel® Omni-Path Architecture and have an opportunity to play with both Ethernet and Infiniband network configuration and testing. Finally, you will have an opportunity to learn about how these technologies are deployed at Los Alamos National Laboratory in support of its world-class high performance computing platforms, which are used to research and solve national grand-challenge scientific problems.

Computation on a GPU Environment

Sponsored by the Department of Energy National Labs & presented by Oak Ridge National Labs

Pre-registration required

Location: Hanover F

In this GPU Accelerated Computing workshop, participants will gain access to Oak Ridge Leadership Computing Facility's Summit Early Access Development Platform, Summitdev, an IBM Power8 system with NVIDIA's Pascal GPUs.

Attendees will have the opportunity to build, profile, accelerate, and visualize an HPC application using OpenACC and/or OpenMP 4.5. No previous experience with GPUs is necessary, but attendees should be comfortable working in a Linux environment. Participants should bring a laptop and be ready to SSH into Summitdev.

8:00 AM – 5:00 PM

Computation on an Intel Xeon Phi (aka Knights Landing or KNL) Platform

Sponsored by the Department of Energy National Labs & presented by the National Energy Research Scientific Computing Center at Lawrence Berkeley National Laboratory

Pre-registration required

Location: Hanover D

SATURDAY PROGRAM SCHEDULE



This workshop introduces participants to computing on the newest platform within the DOE Facilities. The NERSC Cori system, named for American biochemist Gerty Cori, is comprised of both the Intel Xeon “Haswell” and Xeon Phi “Knight’s Landing” compute nodes and a Cray Data Warp burst buffer. Participants will learn about the Knight’s Landing processor, its capabilities, its computing environment, the slurm batch system, and the storage environment as part of the introduction. Next, they will then learn and practice with the new memory hierarchy, how to leverage different CPU cache levels and memory allocation to jobs. In the afternoon, they will learn how to use the new burst buffer and optimize codes on this new platform. Be one of the early group of researchers to experience computing on the Intel Xeon Phi platform.

This workshop will be presented by staff from the National Energy Research Scientific Computing Center at Lawrence Berkeley National Laboratory

Requirements: Participants must have a working log on to Cori at least 30 days prior to the workshop event. You will be given instructions on how to get an account. You should have some experience in programming, should have been able to write new code or edit an existing one. You should have some experience is submitting jobs to a batch system and receiving output.

8:00 AM – 7:00 PM

Doctoral Consortium

Supported by the National Science Foundation

By invitation only

Location: Cortland

The Doctoral Consortium is a one-day workshop that provides an opportunity for doctoral students to discuss and explore their research interests with a panel of established researchers in computing.

2017 Doctoral Consortium Research Topics

Thermal-aware High Performance Clusters

Shubbhi Taneja, Auburn University

A Gaze-Assisted Multimodal Approach to Rich and Accessible Human-Computer Interaction

Vijay Rajanna, Texas A&M University

Improving the Efficacy of Digital Forensics

Imani Palmer, University of Illinois at Urbana-Champaign

Building a Scalable Distributed Online Media Processing Environment

Shadi Noghabi, University of Illinois at Urbana-Champaign

Automated Generation of Semantic Data Models from Scientific Publications

Martha O. Perez-Arriaga, University of New Mexico

Runtime Solutions to Apply Non-volatile Memories in Future Computer Systems

Hoda Aghaei Khouzani, University of Delaware

Improving E-commerce Shoppers’ Experience using Personalization & Persuasive Technology

Ifeoma Adaji, University of Saskatchewan

Dynamically Accommodating Thread-Level Heterogeneity in Coupled Parallel Applications

Samuel Gutiérrez, University of New Mexico

Computational Framework to Assess the Risk of Global Epidemics at Mass Gatherings

Sultanah Alshammari, University of North Texas

Towards Pervasive Heterogeneous Wireless Access at the Edge

Shreyasee Mukherjee, WINLAB, Rutgers University

8:30 AM – 4:30 PM

BWiC Pathways to STEM Gaming Workshop for High School Students

Sponsored by Black Women in Computing (BWiC), CMD-IT and Motorola Solutions Foundation

By invitation only

Location: Hanover C

The Pathways to STEM workshop will consist of activities that expose families from historically under-served and underrepresented communities to the importance of careers in computer science. Parents will be provided information on how to keep their children on the path to college and a STEM career. Students will collaborate as a team to design a game to promote good cyber citizenship. Each team member must assume one of 3 roles: game developer, music composer, character artist. Workshop participants will learn how to use a range of rapid prototyping tools and programming techniques to create and showcase their game. The final deliverable will be a team presentation of their product.



CONFERENCE ORGANIZATION

2017 Tapia Conference

The 2017 ACM Richard Tapia Celebration of Diversity in Computing Conference is possible because of the tremendous dedication and contributions of many organizations and volunteers from the computing community. We very much appreciate the significant support, time, and excellent input. We extend a sincere thank you to everyone, including our attendees, for making this conference possible.

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Founded in 1947, ACM is a major force in advancing the skills of information technology professionals and students worldwide. Today, over 80,000 members and the public turn to ACM for the industry's leading Portal to Computing Literature, authoritative publications and pioneering conferences, providing leadership for the 21st century.

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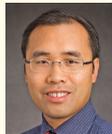
www.cmd-it.org

The Center for Minorities and People with Disabilities in Information Technology (CMD-IT) is a non-profit organization with a vision to contribute to the national need for an effective workforce in computing and IT through synergistic activities related to minorities and people with disabilities. The vision is realized through the mission to ensure that under-represented groups are fully engaged in computing and information technologies, and to promote innovation that enriches, enhances, and enables these communities, such that more equitable and sustainable contributions are possible by all communities. CMD-IT's projects are focused on professional development, community enrichment, and curriculum development.

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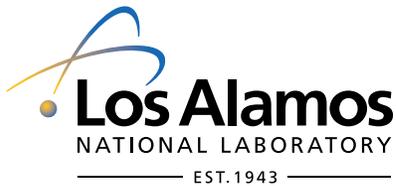


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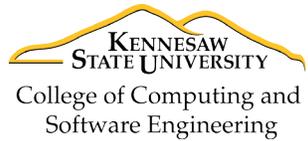
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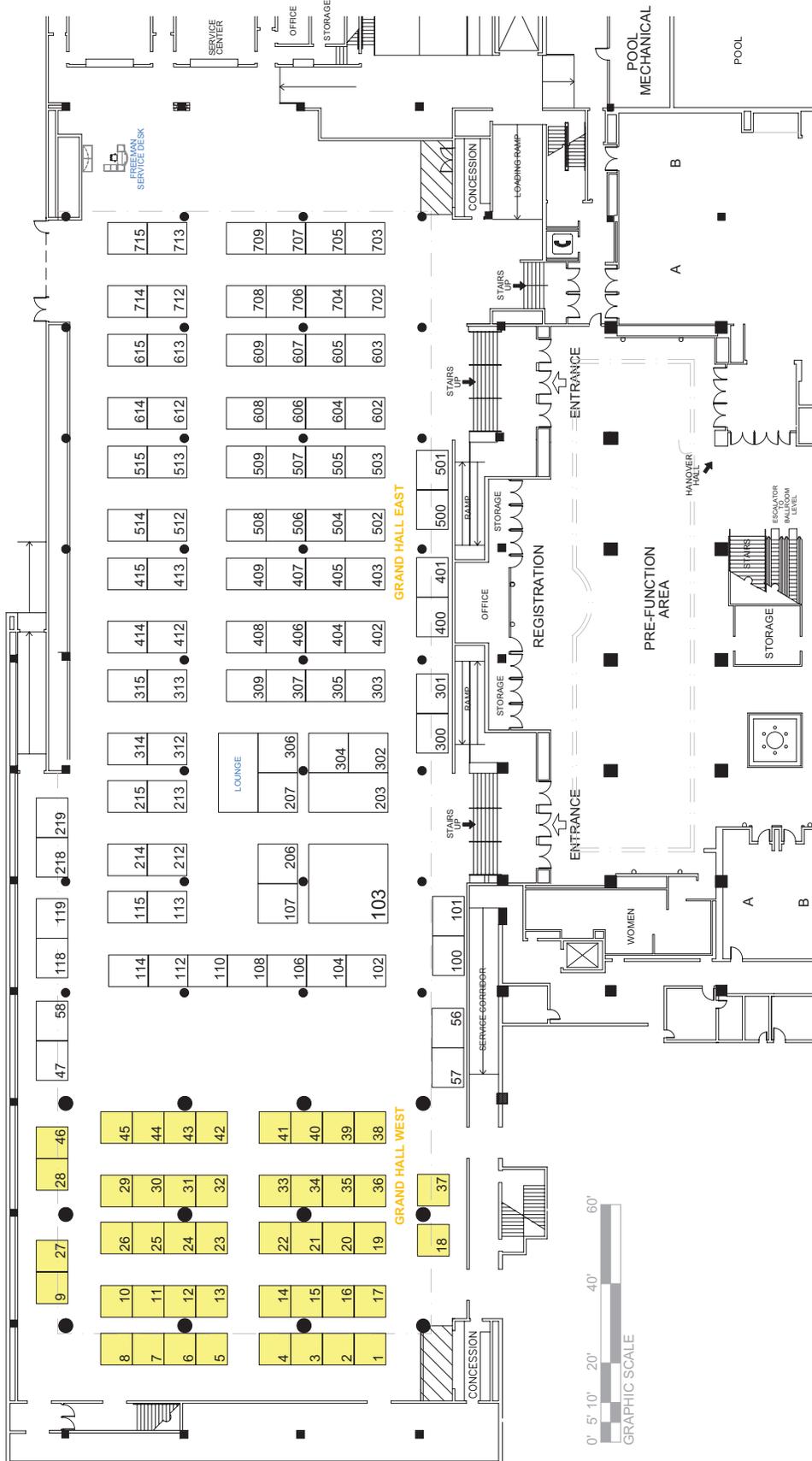
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AccessComputing	602	National Center for Atmospheric Research	507
ACM-W	115	National Center for Women & IT	215
Adobe	609	National Institute of Standards and Technology	307
Amazon.com	408	Nextdoor.com	413
Andreessen Horowitz	501	Northeastern University	219
Anita Borg Institute	212	Northrop Grumman Corporation	203
Argonne National Laboratory	303	NSF Graduate Research Fellowship Program	58
Asana	708	Oak Ridge National Lab	406
Bloomberg LP	613	Oberlin College	314
BNY Mellon	504	Outreachy	706
Brown University	605	Pacific Northwest National Laboratory	402
Capital One	407	Pinterest	313
Carnegie Mellon University, Information Networking Institute (INI)	713	Purdue University	506
Central Intelligence Agency	703	Rice University	100
CMD-IT	302	Rosetta Commons	500
Code2040	218	San Diego Supercomputer Center, Advanced Technology Lab	114
Computing Research Association	214	Sandia National Laboratories	409
Cornell University	104	SAP Americas	112
Coursera	312	Slack	704
Duke University	508	Software Engineering Institute - Carnegie Mellon University	101
eBay	301	Square	107
Emory University	614	Stanford University Engineering and Computer Science	404
Extreme Science and Engineering Discovery Environment (XSEDE)	118	STARS Computing Corps	119
Facebook, Inc.	513	Stony Brook University	414
Fidelity Investments	604	Texas A&M University - Department of Computer Science and Engineering	702
General Electric	206	Two Sigma	412
Georgia Tech College of Computing	108	UC Berkeley Electrical Engineering and Computer Sciences	305
Georgia Tech Research Institute	606	UC Irvine	401
GitHub	612	United Technologies Corporation	300
Goldman Sachs & Co	512	University of Illinois at Urbana-Champaign	502
Google	503	University of Illinois at Urbana-Champaign, School of Information Sciences	714
Gordon College	715	University of Kentucky School of Information Science	709
Harvard John A. Paulson School of Engineering and Applied Sciences	505	University of Michigan	315
Harvey Mudd College	707	University of Michigan School of Information	47
IAAMCS	400	University of North Carolina Charlotte, College of Computing and Informatics	607
IBM	207	University of North Texas	514
Indiana University	56	University of Notre Dame	615
Jopwell	405	University of Pittsburgh - School of Computing and Information	603
JP Morgan Chase	509	University of Washington-Paul G. Allen School of Computer Science & Engineering,	415
Kennesaw State University-College of Computing and Software Engineering	213	Vanderbilt University, School of Engineering	515
Lawrence Berkeley National Laboratory	102	Virginia Tech - Computer Science	113
Lawrence Livermore National Laboratory	110	Viterbi School of Engineering, University of Southern California	309
Los Alamos National Nuclear Laboratory	106	VMware	712
Lyft	306		
Microsoft Corporation	103		
MIT Lincoln Laboratory	705		

EXHIBIT HALL MAP

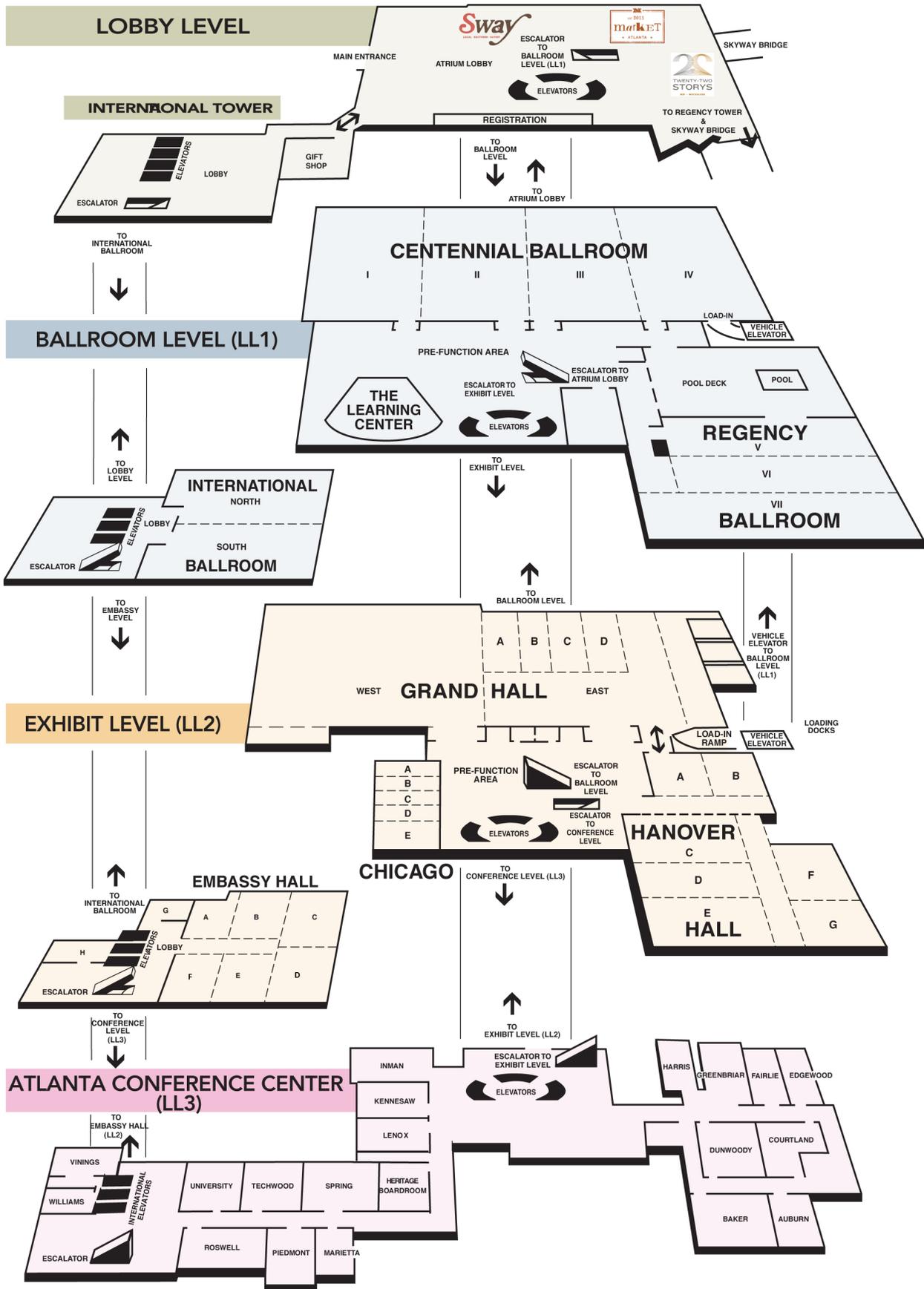


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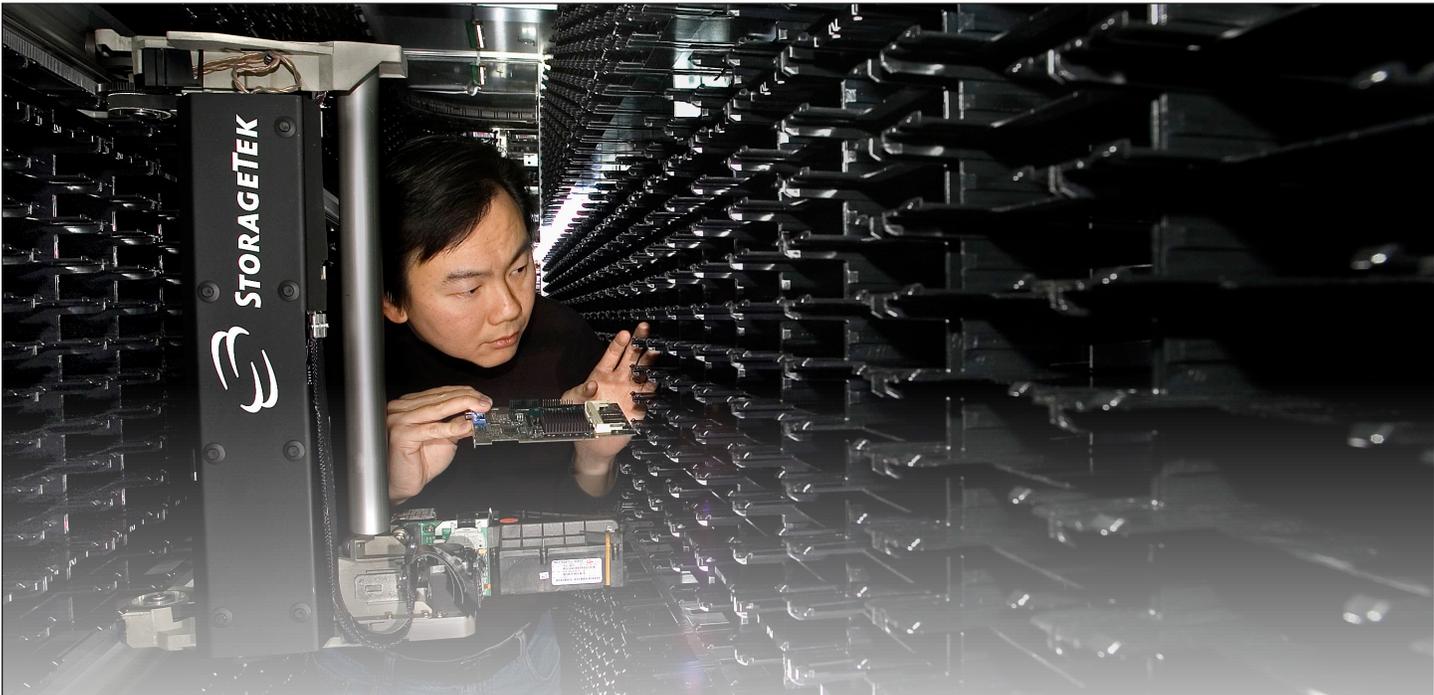
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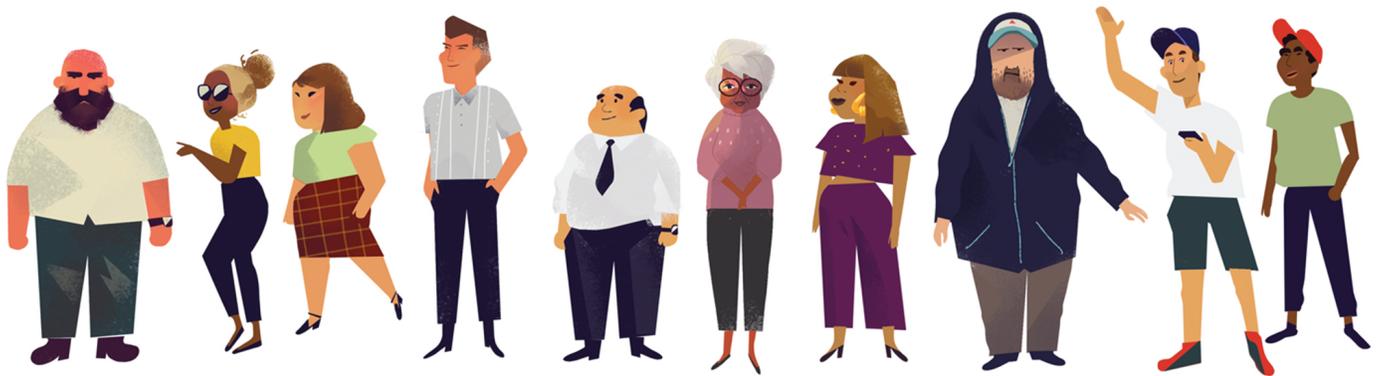
- Twelve members of the Object-Oriented Owls, a female computing organization at the KSU Marietta Campus, are volunteering their time at Girls Inc., a national organization that empowers girls to succeed.
- With support from Google's igniteCS initiative, a team of computer science students will be teaching young girls about programming to encourage them to pursue technology-focused careers.
- A Game Design Boot Camp offered through CCSE will teach young girls the concepts of game design and encourage pursuit in technology-focused fields.

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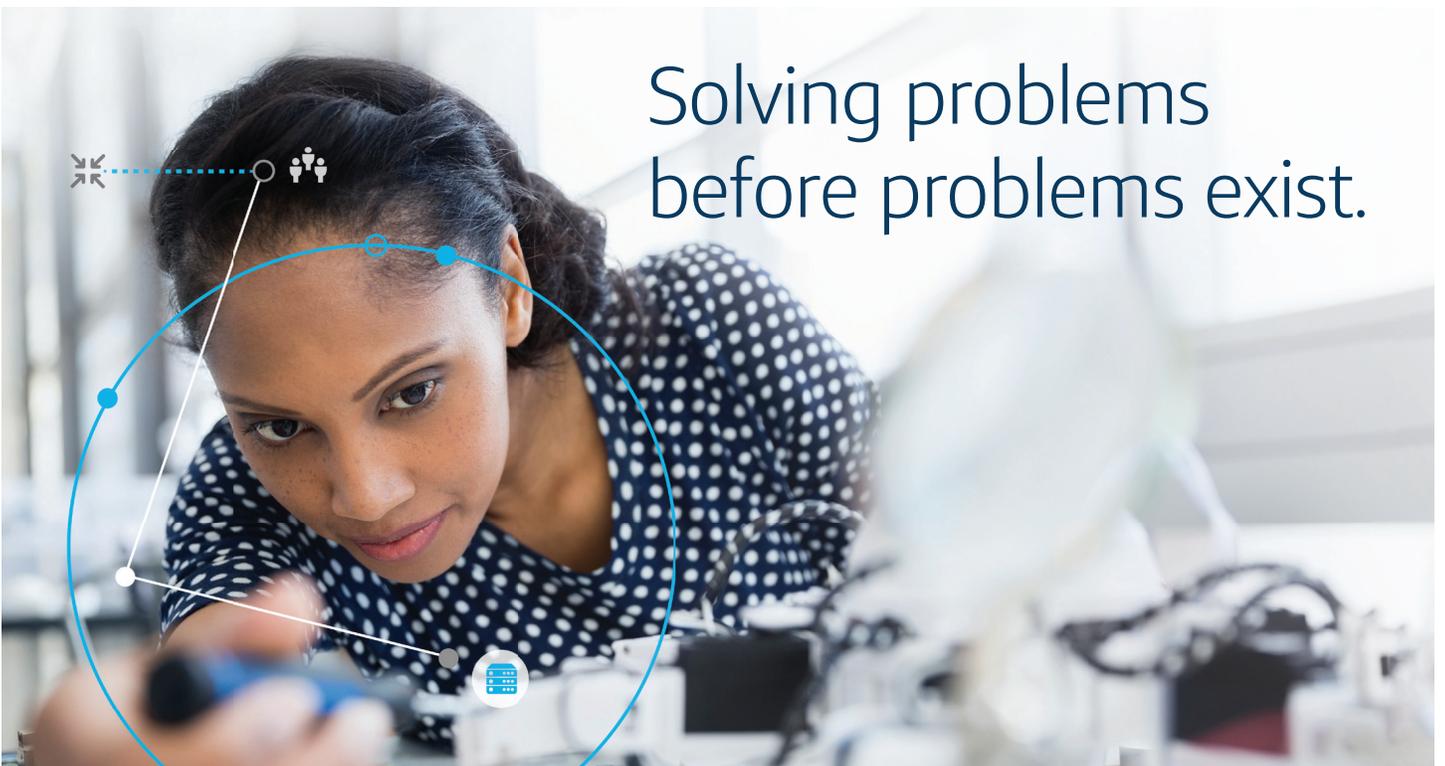
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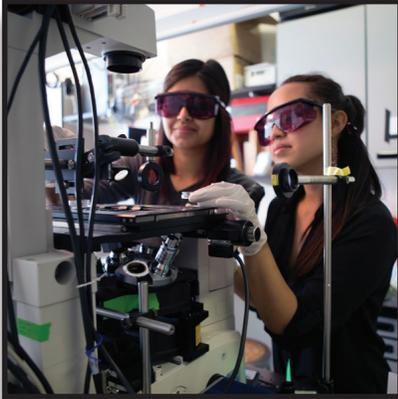
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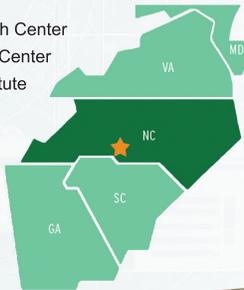
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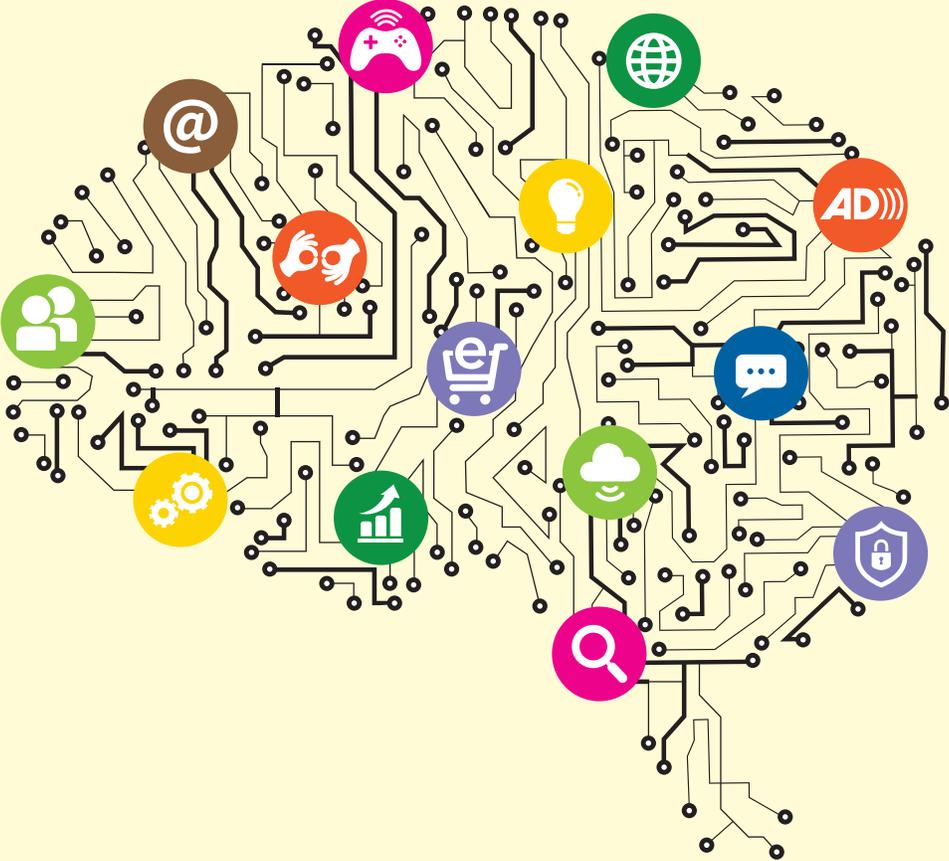
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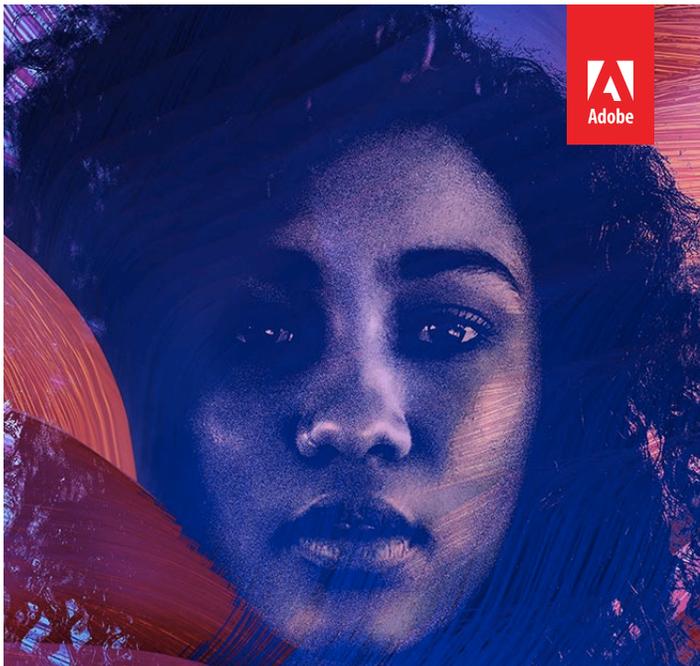
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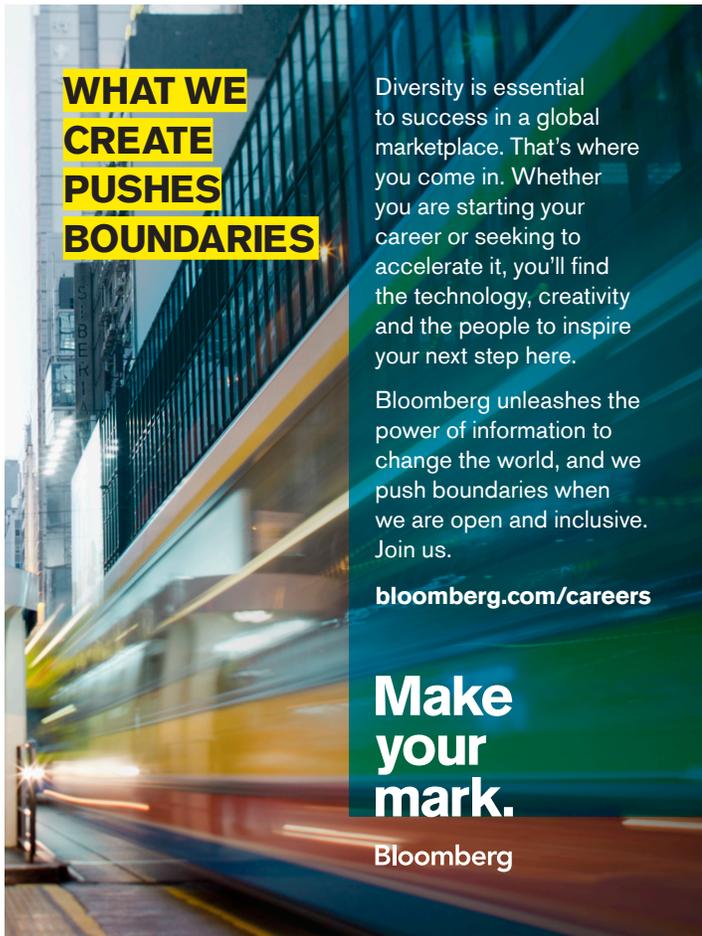


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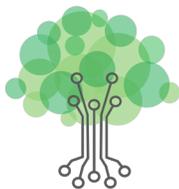


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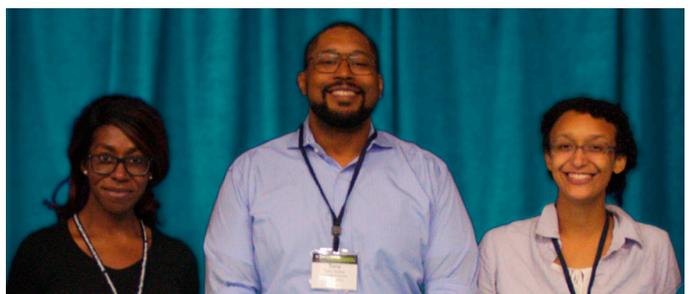


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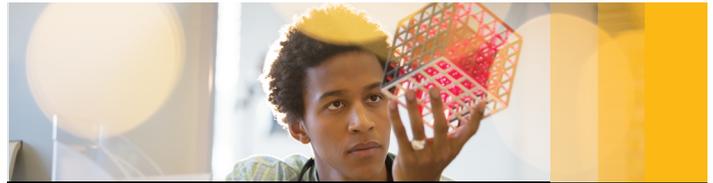




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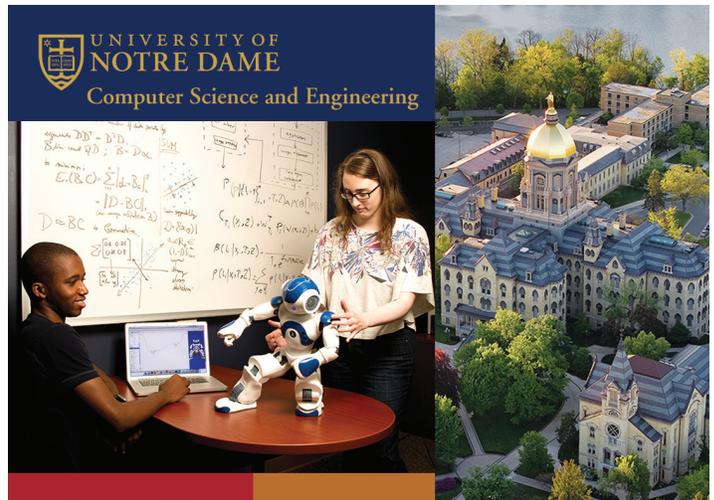
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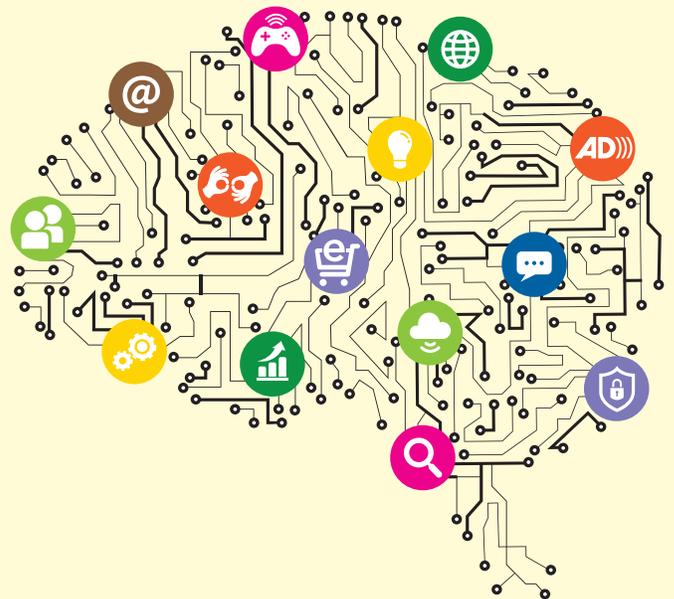
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