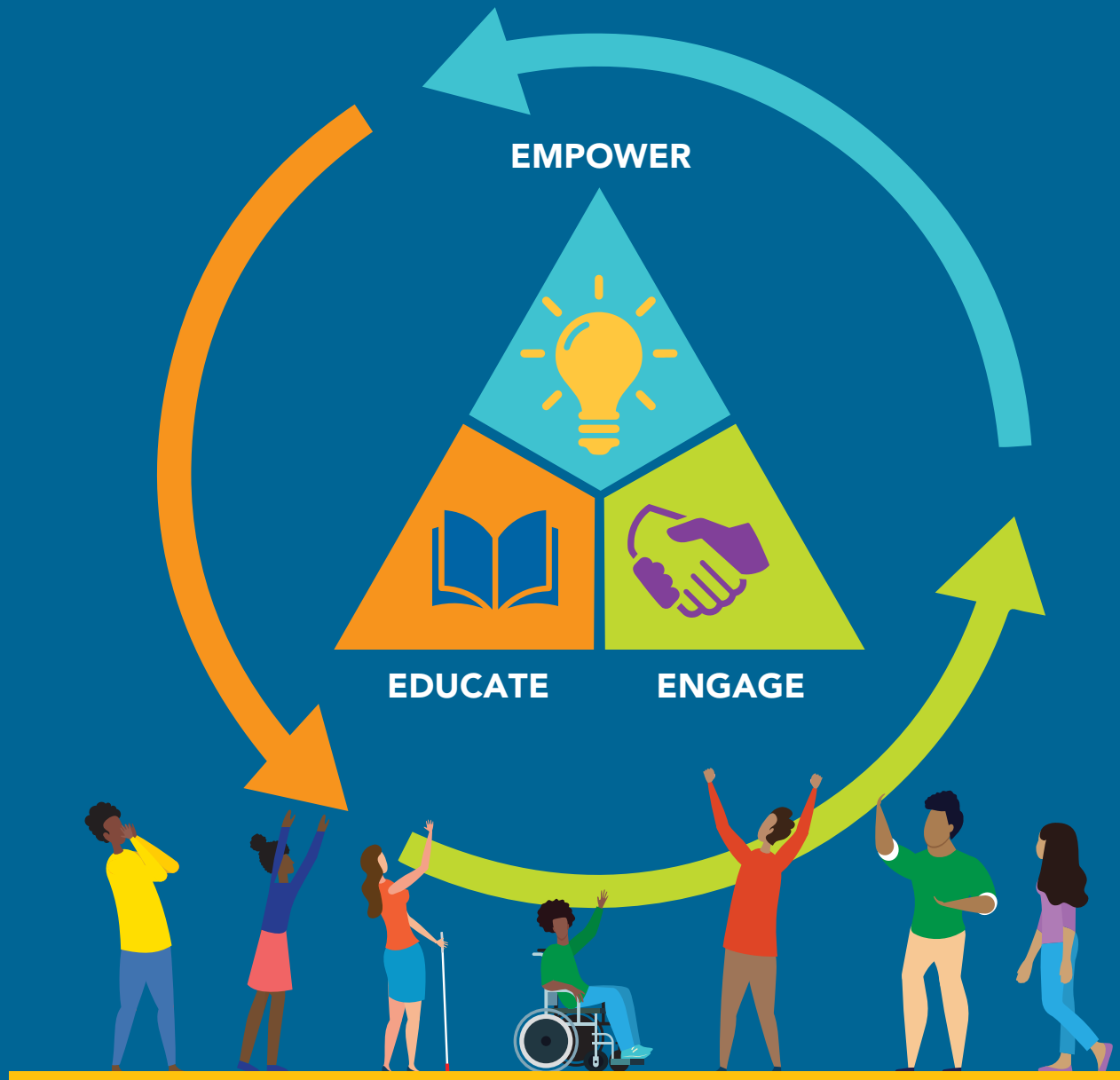
# 2023 CMD-IT/ACM RICHARD TAPIA

## CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

SEPTEMBER 13–15, 2023 DALLAS, TEXAS

## DIVERSITY IN TECH




tapiaconference.org

CMDiT
Center for Minorities and People with Disabilities in IT
*Fostering Innovation Through Inclusion*

acm
Association for Computing Machinery

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# 2023 CMD-IT/ACM RICHARD TAPIA

## CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

SEPTEMBER 13-15, 2023 WASHINGTON, D.C.

The **2023 CMD-IT/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).

The Tapia Conference is the premier venue to acknowledge, promote and celebrate diversity in computing. The goal of the Tapia Conference is to bring together undergraduate and graduate students, faculty, researchers, and professionals in computing from all backgrounds and ethnicities to:

- Celebrate the diversity that exists in computing
- Connect with others with common backgrounds, ethnicities, disabilities, and gender so as to create communities that extend beyond the conference
- Obtain advice from and make contacts with computing leaders in academia and industry
- Be inspired by great presentations and conversations with leaders with common backgrounds

This year marks the 17th conference since its inception in 2001. Our 2023 theme is ***"Diversity in Tech - Educate, Engage, Empower!"*** The 2023 program has been designed to embody our theme.

# CENTER FOR MINORITIES AND PEOPLE WITH DISABILITIES IN INFORMATION TECHNOLOGY (CMD-IT)

The **Center for Minorities and People with Disabilities in Information Technology (CMD-IT)** is a non-profit organization whose mission is to create and deliver programs, events, education and research that advance diversity in computing. CMD-IT fosters strong, long-lasting relationships between industry, academia, government, and the underrepresented communities they serve, which include Blacks/African Americans, Hispanics/Latinx, Native Americans and Persons with Disabilities. Through these initiatives CMD-IT increases awareness of the distinctive needs of each of its communities and advocates for the advancement of better environments and practices for the benefit of all. CMD-IT delivers its mission through outreach, collaboration, and financial responsibility.

CMDiT
Center for Minorities and People with Disabilities in IT
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CMD-IT is the presenter of the **CMD-IT/ACM Richard Tapia Celebration of Diversity in Computing Conference** and the organizer of the following programs:

### LEAP Alliance

The goal of the NSF BPC Alliance, LEAP (Diversifying Future LEAdership in the Professoriate) Alliance, is to address the broadening participation challenge of increasing the diversity of the future leadership in the professoriate in computing at research universities as a way to achieve diversity across the field. The LEAP Alliance includes four cohorts of universities, with each cohort having common strengths and a common agenda of strategies to increase the diversity in the computing professoriate.

### Academic Careers Workshops

The goal of the annual workshop is to mentor assistant- and associate-level faculty and senior doctoral students from our target communities about the academic career ladder. The workshop includes panels of diverse senior faculty talking about the tenure and promotion process, launching a research program, effective teaching, and a detailed session on proposal writing. In addition, the workshop includes a discussion about alternative career paths. The workshops are funded by NSF.

### University Award

The annual CMD-IT University Award for Retention of Minorities and Students with Disabilities in Computer Science recognizes US institutions that have demonstrated a strong commitment to increasing the computer science baccalaureate degree production of minorities and students with disabilities, through effective retention programs.

### Student Professional Development Workshops

The annual workshop provides undergraduate and masters level computer science students with the unique opportunity to receive coaching and development from industry and government professionals about the job application and interview processes. The workshops are held at the Tapia Conference.

# WELCOME

## FROM THE GENERAL CHAIR AND PROGRAM CHAIR

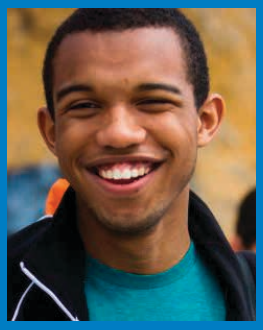
Welcome to the **2023 CMD-IT/ACM Tapia Celebration of Diversity in Computing Conference!** We are excited to be in Dallas, Texas this year. We are even more excited to connect with new and familiar faces, and once again convene some of the brightest minds in diversity and computing.

Our 2023 theme is "Diversity in Tech - Educate, Engage, Empower!" The 2023 program has been designed to embody our theme. This year, we offer over 50 presentations, panels, workshops, and Birds of a Feather discussions covering technical, broadening participation, and professional development topics across various tracks including Academic, Industry & Government, and Technical areas. Each day will include keynotes from guest speakers and fireside chats that are meant to inspire. We will also host an Industry Leadership & Networking Workshop and the Student Professional Development Workshop, where undergraduate and graduate students can gain valuable insights from industry and government professionals on resume writing and effective interviewing skills. There will be over 30 Student Poster/ACM Student Research Competition (SRC) presentations where undergraduate and graduate students will share their latest research results and methodologies, and 10 Doctoral Consortium presentations where PhD students will discuss their research efforts to a panel of established researchers and gain valuable feedback for their success. Lastly, we are very excited to provide over 160 scholarships to students and academic faculty/postdocs to participate in this year's event. We'll end with an Awards Banquet and party to celebrate who we are, what we've accomplished, and what we are yet to do in the future. With an amazing group of faculty, staff, students, and professionals attending every year, there's something at Tapia for everyone, and that includes you!

Our hope is that the Tapia 2023 Conference inspires everyone to truly **"Educate, Engage, and Empower"** those in our community to expand our impact on the world. Together, we are unstoppable and can make a difference. Please join us in celebrating computing, educating ourselves, engaging with our program, and empowering each other!

**Khalil Griffin**
*General Chair*

**Dr. Valerie Nelson**
*Program Chair*



**Khalil Griffin**
Tapia 2023 General Chair
Software Engineer
Google

**Dr. Valerie Nelson**
Tapia 2023 Program Chair
Senior Data Architect
E Cyber7 Technologies, LLC

# FEATURED SPEAKERS

## FIRESIDE CHAT PLENARY PANELISTS

**Dalain Williams**
Data & Insights Lead
Google

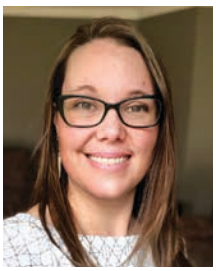
**Donald Stephens**
Managing Director
Modeling & Applied AI
JPMorgan

**Joel Branch**
Chief Data Scientist
Blattner Technologies

## KEN KENNEDY DISTINGUISHED LECTURER

**Armando Solar-Lezama**
Professor
Massachusetts Institute of
Technology (MIT)

## BANQUET KEYNOTE SPEAKER



**Tara Astigarraga**
Engineer and Master Inventor
IBM

# 2023 RICHARD TAPIA ACHIEVEMENT AWARD

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

**The Richard A. Tapia Award is given annually to an individual who is a distinguished computational or computer scientist or computer engineer and who is making significant contributions to civic areas such as teaching, mentoring, advising, and building and serving communities. The individual is also one who demonstrates extraordinary leadership in increasing the participation of groups who are underrepresented in the sciences.**

The 2023 Richard A. Tapia Award winner is **Dr. Charles Isbell.** He is the Provost and Vice Chancellor for Academic Affairs at the University of Wisconsin-Madison. Previously, he was the John P. Imlay Dean of the College of Computing at Georgia Tech. Throughout his career, Dr. Isbell has continued to focus on issues of broadening participation in computing and is the founding Executive Director for the Constellations Center for Equity in Computing. Dr. Isbell takes a data-driven approach to bring about his vision of broadening participation in computing. This approach provided motivation for launching the LEAP Alliance.

Dr. Isbell's varied research interests are unified by the theme of using machine learning to build autonomous agents who engage directly with humans. His work has been featured in the popular press, in congressional testimony, and in several technical collections. In addition, Dr. Isbell has pursued reform in computing education, including as the chief architect of Threads, Georgia Tech's structuring principle for computing curricula. He also led the creation of Georgia Tech's first-of-its-kind MOOC-supported M.S. in Computer Science, now the largest in the country.

Dr. Charles Isbell is a Fellow of the Association for the Advancement of AI (AAAI), a Fellow of the Association of Computing Machinery (ACM), and an elected member of the American Academy of Arts and Sciences. Isbell has received multiple awards for his efforts to diversify computing, including the recent Computing Research Association's A. Nico Habermann Award. He received his bachelor's degree in Information and Computer Science from Georgia Tech, and his M.S. and Ph.D. at the Massachusetts Institute of Technology's AI Lab. Upon graduation, he worked at AT&T Labs/ Research. In 2002, he returned to Georgia Tech to join the faculty as an Assistant Professor, where he has served many roles since.

**8:00 AM - 9:30 PM**

## Tapia Conference Check-In

*Location: Exh. Hall E*

**10:00 AM - 5:00 PM**

## Doctoral Consortium

*(Invitation Only)*
*Location: Fort Worth 3-4*

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

## 2023 Doctoral Consortium Research Topics

### The Impact of Wayfinding Wearable Assistive Technology on the Sense of Independence and Quality of Life for the Visually Impaired on Public Transit

**Presenter: Benjamin Corriette (Howard University)**

### High-Performance, Adaptive, and Scalable GPU-aware MPI Libraries for Next-Generation Heterogeneous Systems

**Presenter: Kawthar Shafie Khorassani (The Ohio State University)**

### Detecting Scattered and Tangled Quality Concerns in Source Code to Aid Maintenance and Evolution Tasks

**Presenter: Rrezarta Krasniqi (University of North Texas)**

### Leverage Language Models to Tackle Software Engineering Problems in Commercial Cyber-physical System Toolchain

**Presenter: Sohil Shrestha (University of Texas at Arlington)**

### Detection, Identification, and Resolution of Knowledge Gaps in Autonomous Agents

**Presenter: Goonmeet Bajaj (The Ohio State University)**

### Towards Resilient Rural Networking Infrastructure for Digital Agriculture

**Presenter: Gloire Rubambiza (Cornell University)**

**11:00 AM - 4:30 PM**

## Leadership and Network Workshop

*(Invitation Only)*
*Location: Grapevine D*

Industry and technical professionals from the CMD-IT community are looking for ways to continue to grow their leadership and networking skills, to support their career development and drive impact in their companies and their communities. In this half-day workshop, we provide insights and guidance in five key areas:

1. The importance of defining your "Hero's Journey" -- developing and following an aspirational plan to guide your career

2. The impact of a growth mindset on your personal and professional development

3. The need to invest in building an impactful network and evolving it over time, including mentors, colleagues, and mentees

4. Steps you can take to strengthen your work relationships and grow those outside of your current network

5. A call to action -- what to do next

The workshop utilizes a mix of speaker presentations, small group exercises, and an expert guest panel to engage participants over the course of a five-and-a-half-hour session. Two short activities are required as advance preparation for the breakout sessions. Instructors will be available for Q&A during and after the session.

**Presenters: Joe DiNunzio (University of California Davis Institute for Innovation and Entrepreneurship), Damon Tull (University of California, University of California, Davis)**

**1:00 PM - 3:45 PM**

## Student Professional Development Workshop

*(Invitation Only)*
*Location: Texoma 1-3*

The CMD-IT Student Professional Develop 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, preparing for the rigors of the (technical/behavioral) interview process and social media presence. The workshop includes a Resume Clinic where students can get 1:1 advice from professional industry volunteers on their resumes.

**2:00 PM - 5:00 PM**

## National Labs Workshop

*Sponsored by the Department of Energy and DOE National Laboratories*
*(Open Invitation)*

**2:00 PM - 3:00 PM**

### *Challenges and Myths in Recruiting/ Obtaining Employment at DOE National Laboratories*

*(Open Invitation)*
*Location: Texas 2*

What is a National Laboratory? Do National Laboratories offer internships? What is scientific computing? How can I learn more about supercomputing? This Student Opportunity Lab is an interactive discussion and information session for undergraduate and graduate students who are actively exploring and educating themselves about diverse career path options and looking for gems of opportunity in terms of internships (summer or other types), funding programs, and research or postdoc program opportunities. Presenters will discuss the importance of the student internship (and of including a broad set of internship experiences, if possible) in shaping a career path. The presenters will answer the "What is a National Laboratory?" (and other) questions and discuss how a National Laboratory experience can provide unique exposure, training, perspective, and skill development to help shape career path and direction with perhaps unexpected and amazing results.

**Presenters: Sumit Purohit (PNNL), Elijah MacCarthy (ORNL), Anna Pietarila Graham (LANL), Agbeli Ameko (NCAR), Ben Lenard (ANL/ALCF), Raul Viera-Mercado (LLNL)**

**3:15 PM - 3:45 PM**

### *The ACCESS Program: Research Computing Resources for All*

*(Open Invitation)*
*Location: Texas 2*

ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem Services and Support) is a new National Science Foundation (NSF) program which, starting September 1st, is managing a range of services that support a national federation of NSF supercomputers and related resources. This presentation will outline new and innovative changes to the allocations and resource management process putting diversity, equity, and inclusion center stage around a continuous improvement paradigm. The program vision states the NSF-funded national Cyber Infrastructure must be accessible and equitable for all researchers no matter the size of the institution, the scale of the planned work, the discipline of the research, or the demographics of the requestor. ACCESS Resource Allocations Management and Platform Services (RAMPS) aims to achieve these equity goals by implementing new programs and through community engagement. This includes introducing a new tiered system that opens opportunities for students to lead allocations as principal investigators, new innovative pilots that expand accessibility, intentional collaboration with minority-serving institutions (HBCUs, TCU, HSIs), taping the diversity of our community to serve as reviewers, and by actively responding to community feedback through a continuous improvement program. Faculty, staff, and students interested in learning how the ACCESS program is utilizing diversity, equity, and inclusion along with continuous improvement strategies to democratize the allocation process are encouraged to attend. Target audience: Faculty, staff, and students interested in learning

how the ACCESS program is utilizing diversity, equity, and inclusion along with continuous improvement strategies to democratize the allocation process are encouraged to attend.

**Presenter: Agbeli Ameko (NCAR)**

**3:15 PM - 4:45 PM**

### *Cyber Sleuths: Making Sense Out of Chaos Fusing Cyber Data and Intelligence Information*

*(Open Invitation)*
*Location: Texas 4*

Have you ever been curious about what a day in the life is like for a cybersecurity analyst? Do you like doing investigations, data analysis, and solving puzzles? This interactive workshop will provide participants with the opportunity to act and think like a cyber security analyst by participating in a tabletop scenario where they will investigate a data breach incident, form hypotheses, test them against new information, and defend their conclusions about the most likely explanation about who stole the data and why. Cyber security analysis provides insight into the motivations, intent, tactics, techniques, and procedures (TTPs) of cyber threat actors focusing on the "why" and not just the "how" of cyber operations. This insight allows organizations to prioritize their preemptive and mitigating actions to address vulnerabilities exploited by threat actors. It also supports decision-makers in making informed, strategic-level decisions to support the confidentiality, integrity, and availability of organizational assets. While the overall analysis workflow involves much more than the example this workshop will focus on, we will provide an environment that represents activities that a cyber security analyst will face on a regular basis, providing a window into the career of a cyber security analyst. Given the broad list of analysis elements, this session will focus on data fusion, investigative research, analytic rigor, and report production. The session is split into one or more phases, where participants are provided specific sets of information that mimic the information a cybersecurity analyst would encounter, including any data analysis a cybersecurity analyst would perform. Additionally, tangential information that may not be part of the real story may be provided. After each phase, participants will perform their investigative research, discuss in groups, and decide what they would advise their decision-makers based on the information available to them. Choices will be provided to which everyone provides their vote via a voting mechanism, and then gets an opportunity to defend their choice. The distribution of votes from the participants will be displayed for all to see. After the scenario is concluded, a discussion on careers in cybersecurity will ensue. No laptops will be required, as materials will be provided for this tabletop exercise. However, a phone or device will be needed to vote on choices. Participants with an interest in cyber security or analysis can use this session as a data point to determine their own career paths. Professionals in computing or related fields will be afforded an opportunity to understand how cyber analysis can benefit their own research and innovation goals. It is the hope that all participants will walk away with a positive and informed experience of the cyber security analyst profession. Target Audience: Students interested in cyber security or analysis, professionals in computing or related fields.

**Presenters: Stacey Hartley-McBride (PNNL), Hector Suarez (ORNL), Han Wei Lin (SNL), Vince Uria (SNL), Michael Gonzales (LANL)**

**4:00 PM - 4:45 PM**

### *Using Containers at National Laboratories for Scientific Computing*

*(Open Invitation)*
*Location: Texas 2*

DevOps is the combination of software development (Dev) and operations (Ops) to increase the efficiency and speed of software delivery. The DevOps practices,

among others, include continuous integration to find and address code issues quicker, continuous delivery to automatically release software, and infrastructure as code to automate system configuration. Containers have become a critical component of DevOps as they package up the code, dependencies, tools, and configuration making them portable across environments. This session gathers developers from the Department of Energy Laboratories to discuss their experience and current applications of containers in scientific computing. Target Audience: Faculty, students, and professionals interested in containerization and its applications in scientific computing at the Department of Energy National Laboratories.

**Presenters: Raul Viera-Mercado (LLNL), Elijah MacCarthy (ORNL), Patricia Grubel (LANL)**

**3:00 PM - 5:00 PM**

### *Graduate School Funding Opportunities & The GEM Fellowship*

*(Open Invitation)*
*Location: Texas 5-6*

"Show me the Money"... and then give it to me! During this workshop, you will find how to identify and apply for funding whether you are in graduate school or just finishing your first semester as an undergraduate. This information will give you insight on how much money is available, how to find it, how to apply for it, and how to secure it! Come find out why no one should pay for graduate school if they go about it correctly!

**Presenter: Marcus Huggans (The National GEM Consortium)**

**5:00 PM - 5:30 PM**

### Tapia 2023 Welcome & Reception

*Location: Texas Ballroom*

**5:30 PM - 9:30 PM**

### Career Fair

*Location: Exh. Hall E-F*

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

**7:00 AM - 7:00 AM**

## Tapia Conference Check-In

*Location: Exh. Hall E*

**9:00 AM - 9:30 AM**

## Welcome and Announcements

*Location: Texas Ballroom*

**9:30 AM - 10:30 AM**

## Fireside Chat

*Location: Texas Ballroom*

## How Artificial Intelligence Methods Are Being Leveraged In Various Sectors

Generative AI is a method that can produce various types of content, including text, audio, code, images, and synthetic data. Generative AI was introduced in the 1960s in chatbots. With the introduction of generative adversarial networks (GANs), generative AI can now create convincingly authentic content. Generative AI is a key technique used with large language models like GPT (generative pre-trained transformer), developed by OpenAI, and PaLM (Pathways Language Model), developed by Google. This panel will focus on how generative AI, in particular large language models, is being leveraged to make advances in various sectors in ethical ways.

**Moderator: Dr. Joel W. Branch (Blattner Technologies)**

**Speakers: Donald Stephens (JP Morgan Chase) & Dalain Williams (Google)**

### BIOGRAPHIES

**Donald Stephens** manages the Operations Modeling team within the Business Modeling Center of Excellence for Consumer and Community Banking (CCB). He and his team support operational modernization efforts by building cutting-edge artificial intelligence (AI) models and ecosystems for CCB Operations. In this role, Donald provides executive leadership on model development and deployment for a cross-line of business initiatives focused on Consumer Behavior, Consumer Interaction, Operational Efficiency, and Expense Reduction. He manages a team of quantitative modelers focused on applying advanced machine learning and artificial intelligence techniques to solve business problems supporting Cash Management, Debt Collection & Recovery, Account Servicing, Complaint Mitigation, and Transactional Disputes. Prior to JPMC, Donald worked at Moody's Corporation. During his 16-year tenure with Moody's, he worked in multiple Research teams and held a number of senior-level roles ultimately becoming the Head of Operations Research with responsibility over improving the operational efficiency of core firm functions with an emphasis on expense reduction. Donald also worked at Morgan Stanley in the Securitized Products Group of their Fixed Income division. There he developed real-time trading risk analysis solutions for residential mortgage-backed securities, mortgage pass-through securities, and other general fixed-income products. Donald holds a Masters in Quantitative Methods and Pure Mathematics from Columbia University and St. John's University, respectively. He completed graduate studies in Artificial Intelligence and Computational Natural Language Processing at Stanford University. Donald holds a Bachelor's in Computer Science from Sacred Heart University.

**Dalain Williams** is a Data & Insights Lead on the Central Product Inclusion and Equity team. In this role, he focuses on capturing and analyzing internal and external data across key Dimensions of Diversity, such as race, gender, age, and language to name a few. Prior to Google, Dalain was a Technical Program Manager responsible for leading Intel's SSDs Business Intelligence Team. He co-founded a LegalTech startup and worked as a Software Engineer at several startups such as Elevate Credit, Black Knight Financial Services, and FilesAnywhere. Dalain has an MBA from Prairie View A&M University. He earned a bachelor's degree in Computer Science from The University of Alabama. Dalain was selected as a 2023 Computer Science Distinguished Fellow for the University of Alabama. He's married with two kids and loves being outdoors.

**Dr. Joel W. Branch** is Chief Data Scientist at Blattner Technologies, where he leads AI services for major client engagements and contributes to company-wide innovation strategy. His previous roles at Blattner Technologies include developing technologies for enterprise ML development, MLOps, and federated ML. Dr. Branch has also held innovation roles in the media and research domains, including at ESPN and IBM Research. Dr. Branch also enjoys occasional stints in the classroom and has served as an adjunct professor at NYU Polytechnic Institute and Columbia University in New York City. In addition to being a technologist, he is also an elected council member in Metuchen, NJ. Dr. Branch received his B.S. in Systems and Computer Science from Howard University and his Ph.D. in Computer Science from Rensselaer Polytechnic Institute. He is passionate about the promotion of diversity and equality in the STEM community. Most importantly,

Joel enjoys life by helping his family and friends laugh and perfecting his BBQ, baking, and photography skills. He is a proud native of the Chicago area.

**10:30 AM - 4:30 PM**

## Career Fair

*Location: Exh. Hall E-F*

**10:45 AM - 11:45 AM**

## Private Student Poster Presenters' Luncheon

*(Invitation Only)*
*Location: Texas Ballroom Foyer*

**11:00 AM - 12:00 PM**

## Tech Talk

*Location: Texas 6*

### MIT Lincoln Laboratory - Minimizing Civilian Casualties: Blockchain Technology for Humanitarian Notification Processes in Armed Conflict

According to International Humanitarian Law, parties to a conflict must ensure the free movement of humanitarian activities and take all feasible precautions to avert or minimize loss of humanitarian personnel, facilities, equipment, and supplies. Humanitarian notification is the process by which humanitarians voluntarily notify militaries about their activities to assist militaries in ensuring humanitarian safety. Nevertheless, both accidental and deliberate attacks against humanitarians still occur. These attacks are in part due to the ad hoc nature of existing humanitarian notification processes, resulting in insufficient mechanisms to confirm the authenticity and integrity of submissions, inaccurate submissions of location coordinates, and processing delays induced by incompatible systems. As a result, trust and cooperation between humanitarians and militaries are further eroded with each new conflict. This talk will introduce a novel humanitarian notification system that allows mutually distrusting parties to securely share critical, geo-temporal notification data leveraging blockchain technology and cryptography and how the properties provided by permissionless, cryptocurrency blockchains can aid in minimizing civilian casualties during armed conflict.

**Presenter: Shamaria Engram (MIT Lincoln Laboratory)**

**11:00 AM - 12:15 PM**

## Panels, Workshops & Presentations

### The *Right* Way to Use Data to Inform and Improve Business Strategy

*Location: Texas 1*

Most professionals now know that taking advantage of available data is critical to the success of any strategy or effort. Despite attempts to use data to evolve practices around "people, processes, and technology", many organizations and/or their activities are left unchanged or worsened. For example, an organization might analyze and present personnel data to improve diversity outcomes, but new strategies resulting from the analysis do little to achieve diversity goals. But why? While Artificial Intelligence, Machine Learning, and general Data Science methods are being integrated into everyday workflows, golden nuggets of information screaming for change or innovation often remain hidden in the data due to the simple fact that the data owners simply don't apply the right approach to collect, process, analyze, and interpret their data to improve decision making and ultimately business outcomes. Instead, data is presented that may or may not be relevant to business use cases, recommendations are proposed that may not even be supported by the data, and valuable opportunities are lost in the process. In this talk, we discuss common misconceptions that currently drive an organization's data approach, identify key considerations to transform existing approaches into effective ones, and explore how to get the right data to get the right answers to direct strategy and improve business outcomes for any field.

**Presenter: Dr. Valerie Nelson (E Cyber7 Technologies, LLC; Training Keys)**

### Developing Large-Scale Parallel Programs in Python with Parsl

*Location: Texas 3*

Addressing grand science challenges increasingly relies on extreme-scale computing capabilities to solve big data problems, scale machine learning algorithms, and integrate multi-scale techniques. Such extreme-scale needs arise, for example, when using machine learning to screen billions of small molecules in the search for SARS-CoV-2 therapeutics, to understand the origins of the universe, and to to explore the brain's neuroanatomic connectome at extreme-scale resolution. This workshop will introduce Parsl, a Python library that allows the automated and reproducible

execution of many tasks (Python functions and external executables) concurrently using parallel and distributed computing systems ranging from multi-core laptops to clouds and supercomputers with thousands of nodes. It will also include hands-on activities to develop a real-world molecular science example using machine learning to demonstrate how Parsl enables large-scale execution of simulation and model training. Researchers can use Parsl to decrease the iteration time between asking questions and calculating answers, allowing qualitative differences in how the next set of questions are developed, and developers can use it to build scalable platforms. Parsl is an open-source project with many contributors, aiming to expand and diversify its user and developer communities.

**Presenters: Dr. Kyle Chard (University of Chicago), Dr. Valerie Hayot-Sasson (University of Chicago), Yadu Babuji (University of Chicago)**

## Do You Want an Internship? Here's How: How to Get an Internship/Job in Tech

*Location: Texas 2*

As a student, you are always told to "get an internship", but no one really shows you how. In this session, you'll learn how to set yourself up for success throughout the application process AND you will learn how to talk to recruiters during Tapia's Career Fair, including: * How to find an internship during any college year * How to make a plan to apply to and interview with companies * The secrets to successful interviewing and career fair prep * And more! You'll receive a handout with these and more tips If you are an early career professional who wants to get into tech, this is also for you.

**Presenter: Alejandro Davila (Palantir Technologies, InternMakers)**

## Effective Programs for Increasing Diversity in Computing: Learning and Engaging

*Location: Dallas 5-7*

This workshop provides an opportunity for representatives from the NSF-funded Broadening Participation in Computing Alliances and other organizations to share their effective programs about increasing diversity in computing. The workshop will begin with representatives sharing one effective program from each of the following NSF BPC Alliances and other organizations: AccessComputing, CAHSI, CMD-IT, CRA-W, ECEP, iAAMCS, NCWIT, and STARS. The attendees will have an opportunity to break up into eight groups, with each group having an opportunity to learn the details about the effective program such that information can be taken back to the institution for implementation or partnerships can be established. Participants will have an opportunity to learn about two effective programs.

**Presenters: Dr. Valerie Taylor (CMD-IT), Dr. Amanda Stent (CRA-WP), Dr. Wendy DuBow (NCWIT), Dr. Jamie Payton (STARS Computing Corps), Dr. Richard Ladner (AccessComputing), Dr. Carol Fletcher (ECEP/TACC), Dr. Kinnis Gosha (IAAMCS), Dr. Ann Gates (CAHSI/UTEP)**

## Taking on the Technical Interview

*Location: Texas 5*

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.

**Presenter: Eric Yurko (Google)**

**12:00 PM - 1:30 PM**

## Tapia Student Poster ACM Student Research Competition Round 1

*Location: Texas Ballroom Foyer*

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. Tapia 2023 is again hosting an ACM Student Research Competition (SRC).

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 2023.

## POSTERS

## GRADUATE STUDENT POSTERS

1. **Extracting Crosscutting Comment Discussions from Issue Tracking Systems in Support of Bug Repair.**
   Rrezarta Krasniqi (University of North Texas)

2. **Replicating Neural Efficient Coding in the Brain using Independent Component Analysis: An Update to a Jupyter Notebook Tool.**
   Saba Yousefian Jazi (University of North Texas)
3. **Autoencoder to Quantify Gait Quality Using Ground Reaction Force for Musculoskeletal Impairment.**
   Thasina Tabashum (University of North Texas)
4. **Understanding Users' Midair Gestures Preferences for Selection and Manipulation in Augmented Reality and Creating a Gesture Dataset for Machine Learning.**
   Jieqiong Li (Colorado State University)
5. **An evaluation of machine learning and deep learning applications in the context of public health and epidemiology.**
   Rubenia Borge (University of North Texas)
6. **Temporal Topic Modeling to Determine Trends in Artificial Intelligence.**
   Shreeti Upreti (University of North Texas)
7. **Modeling Wildfire Spread Using Deep Learning and Heterogenous Remote Sensing Data.**
   Syed Ali (University of North Texas)
8. **Transferable Adversarial Attack on 3D Object Tracking in Point Cloud.**
   Xiaoqiong Liu (University of North Texas)
9. **Improving Graph Property Computation in Large Dynamic Networks with CANDY.**
   Aashish Pandey (University of North Texas)
10. **Cross Dataset Analysis And Network Architecture Repair For Autonomous Vehicle Lane Detection.**
    Parth Ganeriwala (Florida Institute of Technology)
11. **Trustworthy Agent-Driven Particle Swarm Optimization for Communication-Efficient Federated Learning.**
    Saika Zaman (Southern Illinois University Carbondale)
12. **"Data-to-Text" Generation.**
    Ritika Dhiman (Carnegie Mellon University)
13. **Predicting the Occurrence of Déjà Vu using Eye Features.**
    Iliana Castillon (Colorado State University)
14. **Improving Vehicle Logo Classification Using Ensemble Voting Deep Classifiers on VLC-77, the Most Diverse Dataset for Logo Recognition.**
    Arefeh Yavary (University of California, Davis)

## UNDERGRADUATE STUDENT POSTERS

1. **Have a Heart: VR for Homelessness Education and Empathy.**
   Elijah Ballou (Morgan State University)
2. **Evaluating an Earliest Deadline First Algorithm for a Dial-a-Ride Problem.**
   Alejandro Medina (Southwestern University)
3. **Using Natural Language Processing to Detect Discrepancies in Linux Capability Systems.**
   Jazlyn Ilamni (University of Maryland, Baltimore County)
4. **AfriSenti-SemEval: Exploring The Viability of Pre-Trained Multilingual Language Models For Monolingual Sentiment Classification for Low-Resources African Languages.**
   Nathaniel Hughes (Auburn University at Montgomery)
5. **Gender Minorities in Computing and the Benefits of Mentorship.**
   Xin Yi Therese Xu (Pomona College)
6. **Reaching Out to Touch the Wall: A Pilot Study.**
   Madeline Thompson (Grinnell College)
7. **Distributed Anomaly Detection using Machine Learning Techniques in IOTs.**
   Emmanuel Alonge (DePauw University)
8. **Cogcues: Shifting Perception through Interactive Projected Cues in Still Life Drawing.**
   Bijisa Pyakurel (The University of Texas at Arlington)
9. **Using a Virtual Post-Baccalaureate Program to Train Black Software Engineers.**
   Trent Gaylord (Morehouse College)
10. **Agricultural Predictive Models in the era of Global Warming.**
    Hannah Anderson (Johnson C Smith University)
11. **Opinion Dynamics with Mesophilic Agents.**
    Anh Ngo (Berea College)
12. **Realtime ASL Recognition Using Computer Vision and AI.**
    Gabriel Serrano (Kean University)
13. **Ingesting and Analyzing Open Source Automatic Speech Data for African and Indian Languages.**
    Angela Busheska (Lafayette College)
14. **A Touchless Typing Approach Using Apple Augmented Reality Kit and Sequence-to-Sequence Learning.**
    Hung Ngo (Bucknell University)

**12:15 PM - 1:45 PM**

## BPC Accelerator Lunch

*(Invitation Only)*
*Location: Fort Worth 5-7*

**12:15 PM - 1:45 PM**

## General Lunch & Networking

*Location: Texas Ballroom*

**12:15 PM - 1:45 PM**

## LEAP Alliance Lunch

*(Private Event)*
*Location: Grapevine A*

**12:30 PM - 1:00 PM**

## Exhibitor Break

*(Career Fair Closed)*

**1:45 PM - 2:45 PM**

## Tech Talk

*Location: Texas 6*

## Capital One - A Practical Guide to Have a Thriving Career In An AI World

Machine learning is transforming the world as we know it - with new applications emerging every day in every sector. But what is machine learning and how does it work? And most importantly, what can you do to not just survive, but thrive, in this AI world? Join Capital One to learn the basics of machine learning and gain practical advice on how to hit the ground running in any AI environment, regardless of your role or experience. Don't miss this chance to boost your skills and confidence in machine learning and secure your future in an AI world.

**Presenter: Hunter Wixom (Capital One)**

**1:45 PM - 2:45 PM**

## Lightning Talks

## Efficient Parking Management at Large-Scale Vehicular Data Centers with an IoT-Based System

*Location: Texas 1*

By exploiting the ubiquitous nature of the Internet of Things (IoT) technology in smart cities, we propose a Vehicular Cloud-based Data Center's Auction-based Smart Parking (DASP) system for drivers as well as public and private Parking Facility Providers (PFP). In order to improve parking space allocation, the new idea in this paper is to incorporate an auction with highly influential factors such as the type of customer and parking, drivers' and PFP's preferences. DASP leverages real-time demand-based pricing of parking spots, thus charging demand-based prices to drivers while providing higher revenue to PFPs. The main contribution of this paper is the introduction of double auction through sophisticated software agents that are capable of quickly and seamlessly performing tasks such as parking lookup, negotiation, pricing, and reservation. Simulation results show that the proposed scalable and interactive agents of DASP enable efficient processing of a vast amount of data, providing cost savings in terms of time and fuel for drivers looking for parking, ultimately lowering traffic congestion, and improving the usability of public and private parking facilities.

**Presenter: Syed Rizvi (Old Dominion University)**

## Securing the Road Ahead: Tackling Security Issues in Vehicular Networks

*Location: Texas 1*

Vehicular networks have gained popularity as a technology for improving safety for drivers and passengers, as well as enabling access to various services. However, this popularity has also resulted in an increase in security vulnerabilities, attacks, and threats to inter-vehicular services and communications. The security of vehicular networks is crucial to ensure the safety and privacy of the stakeholders. Effective and reliable security solutions and services are necessary to defend against these attacks. This talk provides a comprehensive overview of recent research advances in vehicular network security services, including a novel method to secure cars and promising simulation results. The presentation covers the state of the art in vehicular security threats, vulnerabilities, privacy issues, and security services in a structured manner, as well as discusses the details of the novel security method and its simulation results.

**Presenter: Susan Zehra (Old Dominion University)**

**1:45 PM - 2:45 PM**

## Panels, Workshops & Presentations

## Hybrid Social Interactions for Online Education

## Birds of a Feather

*Location: Texas 2*

Building connections and community among online students is of great importance to the topic of diversity in computing. The lack of diversity in the computing field has been a longstanding issue, with women, people of color, and other underrepresented groups being significantly underrepresented in the industry. By building social connections among online students, educational programs can create more inclusive and diverse learning communities and offer a pathway for those who may face barriers in traditional classroom settings. The session will begin with a brief introduction to the importance of social connections for online students. Online education offers flexibility and accessibility, allowing people from diverse backgrounds and geographic locations to pursue a degree in computer science. However, without proper support and community building, online students may face isolation and a lack of belonging. By creating social in-person cohorts, such as the Student Life groups in Georgia Tech's Online Master of Computer Science program, online students can develop relationships with their peers and establish a sense of community. The question is whether it is possible to replicate healthy social connections with online students. The session will then move on to a discussion of Georgia Tech's Online Master of Computer Science program and its approach to building community among online students. The program has created social in-person cohorts called Student Life groups, which are comprised of students who live in the same city and want to meet other students in person. Success for the program is defined by one student attending more than one event. The aim of the Student Life groups is to create a bond between students who may not initially want to make friends and to provide a supportive community for online students. The session will also examine the challenges of creating strong communities of online students from different cities. To address this issue, the program is connecting students in seven big cities: Atlanta, Bengaluru, Boston, Miami, New York, San Diego, and San Francisco. By analyzing the experiences of students in these cities, the session will explore the potential benefits of building connections among online students from different locations. Overall, the session will provide a valuable opportunity for interested parties to discuss the challenges of building community among online students and to share best practices for creating meaningful connections both online and in person. By connecting students from different cities and backgrounds, programs can foster cross-cultural understanding and promote diversity in computing. This can be especially impactful for underrepresented groups who may feel isolated in their local communities but can connect with like-minded peers through online education. Creating a diverse and inclusive learning community through building social connections among online students is essential to addressing the lack of diversity in the computing field.

**Presenter: Cherie Lum (Georgia Institute of Technology)**

## Multimodal Human-In-The-Loop AI For Enhancing STEM Education

*Location: Texas 3*

In STEM education, innovative educational approaches such as peer-led team learning (PLTL) suffer from a high workload in terms of monitoring classes. By implementing AI-based solutions to reduce the workload, we aim to increase the efficiency of the online version of collaborative PLTL classes. The research targets increasing participation of students in STEM majors through AI solutions. The presentation looks at the challenges of the education case study such as scarcity of labeled data and the multimodal nature of data. We will present a layered approach to the solution. Firstly, a multimodal system that extracts lexical and audio features of the data can improve the efficacy of the machine learning model. Secondly, the human-in-the-loop interactive machine-learning approach enables direct human interaction with the model outcomes, thereby, improving the inherent unpredictability. Lastly, studies have found that women, underprepared students, and students of color are among the students at a high risk of switching and leaving STEM higher education majors for non-STEM majors. The AI-enhanced STEM learning model presented aims to counter the negative effects of STEM classroom experiences, especially for a diverse student population. The talk is designed for anyone interested in learning more about the current state of AI in STEM education and our solution to a case study in cyber PLTL.

**Presenters: Karen DSouza (Indiana University-Purdue University Indianapolis), Dr. Pratibha Varma-Nelson (Indiana University-Purdue University Indianapolis), Dr. Shiaofen Fang (Indiana University-Purdue University Indianapolis), Dr. Snehasis Mukhopadhyay (Indiana University-Purdue University Indianapolis)**

## The Value of Service in Advancing Careers: Exploring the Benefits and Types of Service

*Location: Texas 4*

Faculty service commitments count as a small percentage of faculty's evaluation for promotion. Nevertheless, service is often considered important and if done strategically, can complement the other areas of faculty responsibilities. Unfortunately, faculty from marginalized groups end up doing more service than other faculty. Often the service goes beyond the "traditional notions of service" and is not properly acknowledged. With the increased attention to diversity, equity, and inclusion, most of the work in this area is falling on the shoulders of marginalized faculty. During this panel, four faculty panelists, at differing points in their academic careers, will share their experiences doing service in academia. Each of us has engaged in different forms of service, reflecting our interests and needs. Based on our experience, we provide answers to the following questions: Why do service? What are the different types of service commitments? How is service evaluated? Is there one type of service more important than another? Which should I avoid before tenure? How do I say no to my chair when asked to do service? Give examples of how you have managed to leverage service commitments in a way that contributes to your other responsibilities. The panelists will share strategies that have worked for them on how to manage your service commitments, how to say no, and how to select service commitments that complement your teaching or research. The session will allow time for audience participation by entertaining questions about this often ignored section of faculty work.

**Presenters: Adrienne Decker (University at Buffalo), Manuel Pérez-Quiñones (University of North Carolina at Charlotte), Dr. Kyla McMullen (University of Florida), Dr. Patti Ordóñez (University of Maryland, Baltimore County)**

## Unconscious Bias - A Toolkit for Uncomfortable Conversations

*Location: Texas 5*

The purpose of this presentation is to provide attendees with tangible examples of how to deal with unconscious bias in the workplace. Attendees will leave with resources to inform responses with appropriate vocabulary, at least two examples of real-world business case scenarios, activate for meaningful advocacy, and gain access to a network of people to reach out to when guidance is needed. For a sense of the content that would be included, see the video link attached. https://youtu.be/cGnJ3SgNYH4

**Presenter: Amelia Hough-Ross (Pacific Northwest National Lab)**

**3:00 PM - 4:00 PM**

## Tech Talk

*Location: Texas 3*

## Google - Building With and for Everyone: How Google Engineers Incorporate Products Inclusion and Equity into the Product Development Lifecycle

Google is an American multinational technology company servicing billions of users. Product inclusion and equity is the ongoing work of building belonging through our products, by centering the most marginalized voices at every phase of product creation. We at Google are still at the beginning of this journey, and as we continue on it, we're sharing what we've learned to help drive progress in our industry and beyond.

**Presenter: Dalian Williams (Google)**

**3:00 PM - 4:00 PM**

## Panels, Workshops & Presentations

## Black Women United: Amplifying The Voices of Black Women in Computing

*Location: Texas 4*

Despite diversity, equity, and inclusion efforts, stated commitments to diversity, the demographic characteristics of the professoriate and industry look remarkably like the faculty and professionals of 50 years ago for Black women in computing. Black women represent minoritized populations in both academia and industry nationwide; however, in many cases, they constantly face discrimination in the form of microaggressions and white fragility. This discrimination has not translated to greater Black faculty and professional representation in their career advancement. Instead, Black women's health is being adversely impacted, as they are experiencing insomnia, anxiety, depression, emotional distress, and physical exhaustion. This disruption of norms has negatively impacted the productivity of the Black woman at work and can lead to their demotion and dismissal. Many times, these struggles are not shared, and their voices are silenced. This panel primarily addresses how Black women can use their voice to advance their careers and utilize

proven voice positioning strategies to harness their voice power and maximize professional and personal well-being. These voice strategies will facilitate Black women in their career advancement, skill development, and preparation for entry into their next career level. A failure to address these challenges has negative implications for both academia and industry.

**Presenters: Cheryl Swanier (University of Massachusetts Amherst), Cheryl Seals (Auburn University), Katrina Hutchins (Re-Source Solutions)**

## Sage Edge AI

*Location: Texas 6*

Sage is a new kind of NSF Mid-scale Research Infrastructure (MSRI) that supports "AI at the Edge". It provides cyberinfrastructure for running cutting-edge machine learning and AI algorithms near sensors, instruments, and large data sources with a focus on scientific applications. Sage is deploying cyberinfrastructure in environmental test beds in California, Montana, Colorado, Oklahoma, and Kansas, in the National Ecological Observatory Network, and in urban environments in Illinois and Texas. This workshop will provide a brief overview of Sage's infrastructure and will provide a brief tour of the Sage nodes, portal, and developing applications. The goal is to illustrate how Sage can help solve your own problems or open new avenues for research.

**Presenters: Seongha Park (Argonne National Laboratory, Northwestern University / Argonne Institute for Science and Engineering), Sean Shahkarami (Northwestern University/ Argonne National Lab)**

## Github for Open Source Presentation

*Location: Texas 5*

This workshop will provide an introduction to GitHub for developers who are interested in contributing to open-source projects. The workshop will cover the basics of finding and forking open source projects on GitHub, as well as how to make changes to those projects and submit pull requests for review. The workshop will also cover best practices for managing open-source projects on GitHub, including how to effectively review and merge contributions from external developers. The workshop will be designed to be interactive, with plenty of opportunities for participants to ask questions and get hands-on experience working with GitHub. Participants will learn how to search for open-source projects on GitHub, how to fork those projects and make changes, and how to submit those changes for review. They will also learn how to manage to pull requests, review code, and merge contributions from external developers. By the end of the workshop, participants will have a good understanding of the basics of GitHub and how it can be used to contribute to open-source projects. This workshop is ideal for developers who are new to GitHub or those who are interested in contributing to open-source projects on GitHub but are not sure where to start.

**Presenter: Ritika Dhiman (Carnegie Mellon University)**

## Tips and Tricks for Supporting Neurodiverse Students in the Computer Science Classroom

## Birds of a Feather

*Location: Texas 1*

This Birds of a Feather (BoF) session at Tapia 2023 will provide an opportunity to discuss strategies for supporting neurodiverse students in the computer science classroom. The aim of this session is to broaden the participation of people from historically underrepresented groups in computing by exploring ways to create a more inclusive learning environment that caters to the needs of neurodiverse students. Neurodiversity refers to the range of cognitive differences that exist in human beings, including conditions such as autism, dyslexia, ADHD, and others. These conditions can present unique challenges for students in the computer science classroom, including difficulty with focus, attention, and communication. The session will begin with a brief introduction to the concept of neurodiversity and its relevance in the context of computer science education. Participants will be invited to share their experiences of working with neurodiverse students and to contribute ideas and strategies for creating a more inclusive learning environment. The session will be structured around several key themes, including teaching strategies, course design, and accommodations. Participants will discuss teaching strategies that have been effective in supporting neurodiverse students, such as breaking down complex concepts into smaller parts, providing visual aids, and using real-world examples. Classroom design is another important consideration in creating an inclusive learning environment. Participants will share ideas for designing computer science classrooms that are conducive to learning for neurodiverse students. This may include reducing distractions, providing flexible seating arrangements, and using calming colors and lighting. Finally, participants will discuss accommodations that can be made for neurodiverse students, such as providing extra time for assignments and exams, allowing the use of assistive technology, and offering alternative assignments or assessments. Participants will share

their experiences with these accommodations and discuss the best ways to implement them in the classroom. The session will be moderated by experts in the field of neurodiversity and computer science education, who will provide guidance and feedback on the ideas and strategies presented. In summary, the Birds of a Feather session at Tapia 2023 will focus on tips and tricks for supporting neurodiverse students in the computer science classroom. By sharing experiences and strategies, participants will contribute to a broader effort to create a more inclusive learning environment for all students, regardless of their cognitive differences.

**Presenter: Dr. Meredith Moore (Drake University)**

**4:00 PM - 4:30 PM**

## Afternoon Break

*Location: Texas Ballroom Foyer*

**4:30 PM - 5:45 PM**

## Panels, Workshops & Presentations

## How to Ace a Tech Interview

*Location: Forth Worth 5-7*

We will hold a session highlighting how to rock a technical interview. Review the misconception, structure, tips and tricks on acing your next technical interview.

**Presenter: Harriet Darkwa (Mastercard)**

## Young, Black, and Tenure Track

## Birds of a Feather

*Location: Texas 3*

In 2021, 29 Black people were awarded PhDs in Computer Science, Computer Engineering, or Information Science [CRA Taulbee Table D3]. Also, in 2021, about 15% of all people accepted tenure-track positions [CRA Taulbee Table D4]. Assuming this statistic is evenly distributed across all populations, this means only 4 new tenure-track professors in computing are Black. The percentage of Black faculty decreases when going from Assistant (3.2%) to Associate (2.2%) [CRA Taulbee Table F7]. A handful of Black academics are presently embarking on a perilous tenure track position in computer science. While all faculty need support if they earn tenure in the United States, we believe some issues are specific to Black faculty that require a support group. These include issues such as stereotype threat, race bias in performance evaluations, and the ongoing politicization of Black-informed scholarship, in addition to issues like service over-burden that generalize to other groups of underrepresented faculty. Therefore, we created a slack group of (mostly) pre-tenure, Black faculty members to be a community for support, challenging questions, and a place for organizing. The group is currently consistent with faculty who are young in the (academic sense), identify as Black, and are tenure-track faculty members at research- or teaching-track universities. Within two years, three members earned the career award, and two were awarded tenure. We would like to expand our group to other faculty members with the goal of tenure and career success. The CMD-IT/ACM Richard Tapia Conference is the perfect venue to solicit new members. We will structure the Birds-of-a-Feather session into four sessions. We will scale the timing to the allotted time provided by the committee.1) Panel with faculty discussing their tenure-track journey, issues they've overcome, and strategic suggestions. [20 min]2) Small group discussion in breakout groups aligned by affinity groups of department type and research area] to establish connections. [20 min]3) Report out group discussion. [10 min]4) Discuss plans for staying connected [10 min]After the official session, we hope to continue the group discussion. We will organize a social and ensure we include everyone in the online group. We will also include prompts to provide in guided discussions. We will use the slack group to continue the conversations that started during the BoF session. In our slack group, we have found some of the most fruitful conversations have included the following:- Strategic planning- When is it time to leave / (Re)-negotiating- Collaborating on grants- Collective citations- Recruiting and mentoring students- Managing collaborators- Tenure document preparation.

**Presenters: Dr. Christan Grant (University of Florida), Dr. Robin Brewer (University of Michigan, Ann Arbor), Dr. Jasmine Jones (Berea College), Dr. Angelique Taylor (Cornell Tech), Dr. Corey Baker (University of Kentucky)**

## Writing Award-Winning Applications for Fellowships, REUs, and more

*Location: Texas 1*

Mentoring at all levels of education has proven to be an effective tool for improving student, faculty, and staff retention at schools. Both mentor and mentee experience an increase in self-esteem and self-efficacy, and an improvement in professional skills such as communication and organization. In this workshop, presenters will show students how to cultivate and maintain mentoring relationships and write award-winning applications for research experience for

undergraduates, undergraduate consortiums, graduate school, and fellowship programs. Students will be provided resources and learn to use peer-to-peer critical review to write an effective personal statement and research statement. Finally, students will be given resources to create peer-to-peer writing communities to encourage each other to apply for scholarships, fellowships, and discipline-specific symposiums or consortiums, such as the KDD and the AI Undergraduate Consortiums.

**Presenters: Dr. Jason Grant (Villanova University), Dr. Patricia Ordóñez (University of Maryland, Baltimore County), Dr. Eliana Valenzuela-Andrade (University of Puerto Rico at Arecibo)**

## A Picture is Worth a Thousand Data Points: Introduction to Visualization

*Location: Texas 2*

They say a picture is worth a thousand words. My response to that? A picture is also worth a thousand data points! However, not all pictures are created equal: a good visualization tells a story and helps the viewer to understand the data. A polished visualization can help you In the first half of this workshop, I will discuss the seven sins of visualization, and how to avoid them. I will introduce guidelines on how to make excellent visualization choices. In the second half of the workshop, I will guide the participants in an interactive session on creating meaningful visualizations with just a few lines of code.

**Presenter: Dr. Andy Berres (Oak Ridge National Laboratory, National Renewable Energy Laboratory)**

## ADVANC(E)ing an Inclusive Academic Computing Workforce with Evidence-Based Tools

*Location: Texas 4*

This workshop is designed for computer science administrators and faculty. NCWIT works with academic computing programs to facilitate their implementation of strategic, systemic diversity-based change efforts based on their own institutional contexts, and is currently partnering with the NSF INCLUDES Aspire Alliance and WEPAN on addressing this need for faculty and staff as part of the NSF ADVANCE program. In this workshop, the facilitators--NCWIT, Aspire, and WEPAN staff--will present the NCWIT Academic Workplace Systemic Change Model, which comprehensively illustrates the systemic components of a computing department where change efforts can be focused. Furthermore, facilitators will utilize evidence-based resources to lead attendees through hands-on activities to determine which areas of the systemic change model should be areas of focus, as well as how to go about strategic, systemic planning of change efforts. Throughout the workshop, facilitators will: share evidence-based models and tools to aid departments in their DEI change efforts; personally assist attendees as they utilize some of the tools during the workshop; and create opportunities for sharing among the attendees. By implementing DEI change efforts in a strategic, systemic manner, administrators and faculty will be able to recruit, hire, and retain intersectionally diverse women in their programs more effectively.

**Presenters: Dr. Jamie L. Huber Ward (NCWIT, University of Colorado Boulder), Dr. Sherri Sanders (NCWIT, University of Colorado Boulder), Dr. Jessica Bennett (APLU, Aspire Alliance), Dr. Ershela Sims (WEPAN), Bethany Farmer (WEPAN, ARC Network)**

## Research Career Mentoring for Industry and Government Labs

*Location: Texas 5*

This workshop is designed to provide attendees from industry, academia, and government labs with the opportunity to develop their professional and career skills. Through discussion with three experienced panelists and a moderator, participants will have an opportunity to gain a better understanding of how to thrive in a research career and advance one's research and/or management career in industry, and government labs. The workshop will provide participants with the chance to hear from the panelists about their careers to set the context and then engage in direct conversations with panelists tailored to their individual goals and needs.

**Presenters: Gonzalo Ramos (Microsoft), Jaime Moreno (IBM), Taghrid Samak (Meta), Basak Alper Ramaswamy (Nasa JPL)**

**5:30 PM - 7:30 PM**

## AccessComputing Community Reception

*(Private Event)*
*Location: Dallas 5-7*

**5:30 PM - 7:30 PM**

## Reboot Representation Community Reception

*(Private Event)*
*Location: Yellow Rose Ballroom*

**8:00 AM - 9:00 AM**
## CMD-IT VIP Breakfast
*(Invitation Only)*
*Location: Dallas 5-7*

**8:00 AM - 9:00 AM**
## STARS Breakfast
*(Private Event)*
*Location: Fort Worth 5-7*

**8:00 AM - 6:00 PM**
## Tapia Conference Check-In
*Location: Exh. Hall F*

**9:00 AM - 9:30 AM**
## Welcome & Announcements
*Location: Texas Ballroom*

**9:30 AM - 10:30 AM**
## Ken Kennedy Distinguished Lecturer
*Location: Texas Ballroom*

### Teaching Machines to Program: Why That's a Great Thing!

Dr. Armando Solar-Lezama, MIT: "As a first-year graduate student in 2003, I started out on a journey to change how machines can help human experts write code. In this talk, I will explain how that work evolved over the past 20 years into the modern field of program synthesis. I will talk about the key advances in the field and how they changed our expectations of how machines can help us write code. I will also discuss some of the open problems in the field, and how the ability of machines to write code can have an impact far beyond software development, from helping to make Artificial Intelligence more versatile and robust, to helping to accelerate scientific discovery."

#### BIOGRAPHY

**Dr. Armando Solar-Lezama** is a professor at MIT, where he leads the Computer Aided Programming Group and is also the Associate Director and COO of the Computer Science and Artificial Intelligence Lab (CSAIL). Prof. Solar-Lezama was born in Mexico City, where he lived until his family migrated to Texas when he was fifteen. In Texas, he attended Texas A&M University, where he earned B.S. degrees in Computer Science and Mathematics. From there, he moved to the University of California at Berkeley, where he earned his Ph.D. for his early work on program synthesis.

Prof. Solar-Lezama is best known for his work on generating programs from high-level specifications. His early work focused on the development of the Sketch program synthesis language which introduced many ideas that became the foundation of the modern field of program synthesis. In recent years, his research has focused on the combination of deep learning and symbolic reasoning in order to generate programs, as well as in the application of techniques from program synthesis to problems outside of software development in areas as varied as education, computer-aided design, robotics, and computational biology.

**10:45 AM - 12:00 PM**
## Panels, Workshops & Presentations

### Effective Strategies for Encouraging Diverse Students to Pursue Graduate Studies
*Location: Texas 4*

It is important for students, especially diverse students, to be well-informed and encouraged to pursue graduate studies to increase career opportunities in tech. Some universities have effective programs and curriculum that encourage undergraduate students to pursue graduate studies. This panel will provide details about programs and curriculum components that expose students to research opportunities and intentionally encourage students, especially diverse students, to pursue graduate studies. The panelist will present programs such as SoNIC at Cornell University, designed to increase the participation of students from underrepresented communities in Ph.D. programs. The four universities represented by the panelists were selected because of data by Jeff Huang at Brown University that indicate these universities are among the top undergraduate programs that have students that go to graduate school and pursue academic

careers after completing the doctoral degree.

**Presenters: Dr. Valerie Taylor (CMD-IT), Dr. Nancy Amato (UIUC), Dr. LeeAnn Roberts (Cornell University), Dr. Jan Cuny (University of Washington), Dr. Fredo Durand (MIT)**

## Diversifying ACM Award Nominations

*Location: Texas Ballroom*

Getting Involved in Diversifying ACM Awards This panel will provide an understanding of the ACM Awards process, with the goal of encouraging all attendees to be active participants in working to diversify the candidate pool for Award nominations. ACM seeks your help in building and diversifying the nomination pool for our 2023 Awards. People often wonder why someone who seems highly deserving has not received an ACM award. The usual answer is that the person was never nominated. The fact is no one will receive an ACM Award unless people in the community take the time to nominate them. Within ACM, there is a long-established globally recognized Awards program focused on achievements in computing. ACM is committed to providing inclusive activities and programs that embrace diversity as an integral aspect of our mission. Awards are a high-visibility reflection of community values. While there have been efforts for many years to address gender disparities in ACM Awards, racial, ethnic, and disability disparities have not received the same attention. In this panel, ACM Awards Committee members will present information about the need to nominate deserving and diverse individuals for Awards and ACM Advanced Member Grades (Distinguished Members and Fellows). This panel will provide an understanding of ACM's Awards process from submission to selection, with specific tips for working as a community to develop nominations. The goal is to energize attendees to get involved in the nomination process.

**Presenters: Vicki Hanson (ACM), Roy Levin (ACM), Stephanie Ludi (University of North Texas), Timothy Pinkston (University of Southern California)**

## Academic Integrity in the Era of Stack Overflow, Chegg, ChatGPT, and Similar Resources

*Location: Texas 2*

Teachers and professors play an important role in creating an equitable learning environment for all students, including maintaining academic integrity within the class and institution. Unfortunately, research shows that academic violations are trending upward. Resources such as Stack Overflow, Chegg, and ChatGPT are making it easier for students to access solutions to assignments, particularly in introductory classes. Faculty members are asked to police and implement strategies to discourage honor code violations, both of which require significant time and resources. Nevertheless, students will inevitably violate these honor codes, either knowingly or unknowingly. Confronting students about possible academic honor violations can be difficult and uncomfortable, especially for faculty from underrepresented groups. Concurrently, students accused of academic violations may become overwhelmed and stressed, which can have detrimental and rippling effects across all their classes. Allegations of academic misconduct negatively affect faculty members too, as students may be inclined to give lower ratings to the professor on course evaluations, which contributes to the tenure review process at many institutions. This workshop will discuss strategies for reducing academic misconduct and handling potential academic violations. Participants are encouraged to share their own anecdotal experiences, approaches, and advice.

**Presenters: Dr. Jason Grant (Villanova University), Brian Lind (Middlebury College)**

## Basics of Accessibility in UI Design

*Location: Texas 5*

This session on accessibility will be both informative and interactive to help you gain knowledge into how you can start thinking with an "accessibility mindset". This session will dive into the different types of abilities, how that can affect the user experience, some assistive technologies people may use, and things to be thinking of when you are designing user interfaces. There will be an activity where we will go into two different examples: thinking through keyboard navigation and color contrast.

**Presenter: Jennifer Patterson (BNY Mellon)**

### 10:45 AM - 12:15 PM

## ACM Student Research Competition (SRC)

Round II (Graduate & Undergraduate Students)

*Location: San Antonio 4-6*

**10:45 AM - 3:00 PM**

## Career Fair

*Location: Exh. Hall E-F*

**12:00 PM - 1:15 PM**

## Faculty Networking Lunch – Dr. Richard Tapia Presentation

*(Faculty Only)*
*Location: Forth Worth 5-7*

## Losing the Precious Few

In this presentation, I will highlight notions from my recent book titled "Losing the Precious Few: How America Fails to Educate its Minorities in Science and Engineering" that work against the promotion of equitable representation of students and faculty in science and engineering in today's major universities.

**12:00 PM - 1:15 PM**

## General Lunch & Networking

*Location: Grapevine Ballroom*

**12:30 PM - 1:00 PM**

## Exhibitor Break

*(Career Fair Closed)*

**1:30 PM - 2:30 PM**

## Panels, Workshops & Presentations

## Faculty Workshop: Funding Opportunities

*Location: Fort Worth 5-7*

This session will focus on funding opportunities with the National Science Foundation (NSF) in the Directorate for Computer and Information Science and Engineering (CISE). Details about current and future requests for proposals will be discussed. Further, participants will have an opportunity to learn about strategies for successful proposals. The session will include significant time for questions from the audience.

**Presenter: Jeff Forbes (NSF)**

## Building Databricks ELT Workflows With Airflow's Custom Operators and Sensors

*Location: Texas 2*

Databricks provides a unified, open platform for all your data. It empowers data scientists, data engineers, and data analysts with a simple, collaborative environment to run interactive and scheduled data analysis workloads. Airflow enables you to manage your data pipelines by authoring workflows as DAGs of tasks. In simple words, it's a workflow orchestrator. With the experience gained working in UDP, I am going to explain and showcase some of the powerful capabilities that Databricks and Airflow bring in. Whether you are an expert user of these platforms and tools or someone who just started exploring, this session will provide some of the highlights of Databricks features i.e. Databricks pipeline and Airflow i.e. flexibility of creating new operators to suit your requirements. With these capabilities, you can create and monitor data processing logic that is customized to support your team's requirements.

**Presenter: Nafisah Islam (Northwestern Mutual)**

## Diversity Includes Disability

## Birds of a Feather

*Location: Texas 4*

This Birds of a Feather session will bring together people who have a disability or who are interested in supporting individuals with disabilities in computing education or careers. The goal of the session is to build community and to learn from each other about strategies for achieving success and ensuring that computing fields are welcoming and accessible to individuals with disabilities. The session will begin with brief introductions from the presenters and attendees. There will be a brief overview of relevant topics and a large group discussion through which we will hone in on topics to be discussed in small groups. Topics discussed could include accessibility in computing education, disclosing disability status in interviews, recruiting and retaining employees and interns with disabilities, and including people with disabilities in broadening participation activities. The session will include information about internships, mentoring, and career development opportunities for students with disabilities as well as resources for educators and employers who would

like to be more welcoming and accessible to individuals with disabilities. The organizers are the leaders of AccessComputing and AccessCSforAll, projects that work nationwide to increase the participation of individuals with disabilities in computing education and careers. Through this work, they regularly interact with a variety of stakeholders interested in this topic including people with disabilities, computing educators, disability service professionals, and computing employers.

**Presenters: Brianna Blaser (University of Washington, DO-IT Center), Richard Ladner (University of Washington)**

## Increasing Diversity in the Computer Science Professoriate at Research Universities: Report of CREA's Evaluation of the LEAP Alliance

## Birds of a Feather

*Location: Texas 5*

Navigating academic spaces in computer science higher education poses different challenges for Underrepresented Minorities (URM). Significant research highlights the barriers that Black/African American, Latinx/Hispanic, Native American, and people with disabilities face in becoming future faculty members, gaining recognition for their field contributions, and feeling a sense of belonging in their academic communities. Throughout the last six years, the LEAP Alliance has implemented a number of strategies to recruit and retain URM PhD students in top computer science programs across the US. This presentation covers the following structure and topics-Overview of Underrepresented Minorities' challenges to gain representation and access to graduate education and faculty positionsOverview of LEAP Alliance in which the goals, structure, and how it works are outlinedPresentation of LEAP Alliance activities to increase the participation of underrepresented minorities in PhD programs across top computer science institutions in the USA.Presentation of team and methods used to evaluate the LEAP alliance activities, strategies, and progress. An overview of the methods and instruments is presented. Presentation of the results of the evaluation after six years of the LEAP Alliance. The results highlight qualitative and quantitative data that shows how the number of underrepresented students recruited and retained increased, as well as more detailed data from the staff and the students that reveal their experiences in The final part is a discussion of the findings. This section summarizes the strategies and activities that have been proven as more effective in increasing the representation of these communities. Also, the challenges for those that still remain in academia are presented.

**Presenter: Dr. Denice Hood (University of Illinois at Urbana-Champaign)**

## Privacy-Preserving Deep Learning for IoT: Game Theoretical Model

*Location: Texas 1*

The exponential growth of the Internet of Things (IoT) has become a transcending force in creating innovative smart devices and connected domains including smart homes, healthcare, transportation, and manufacturing. With billions of IoT devices, there is a huge amount of data continuously being generated, transmitted, and stored at various points in the IoT architecture. Deep learning is widely being used in IoT applications to extract useful insights from IoT data. However, IoT users have security and privacy concerns and prefer not to share their personal data with third-party applications or stakeholders. In order to address user privacy concerns, federated learning has been largely employed in data-driven applications which enables multiple IoT devices to train their models locally on edge gateways. In this talk, first I will discuss different types of deep learning approaches and how these approaches can be employed in the IoT domain, and after that, I will present a privacy-preserving deep learning approach for IoT devices that can achieve benefits from other devices in the system. This learning approach is analyzed from the behavioral perspective of mobile edge devices using a game-theoretic model. I will also present the Nash Equilibrium in N-player static game model and present a solution - a novel fair collaboration strategy among edge IoT devices using a cluster-based approach to solve the federated learning game, which enforces mobile edge devices for cooperation. At the end, I will also present implementation details and evaluation analysis in a real-world smart home deployment.

**Presenter: Dr. Deepti Gupta (Texas A&M University-Central Texas)**

## Superconducting for Greener Computing

*Location: Texas 3*

The energy/power consumption of the computing industry is growing at a rapid pace as cloud services broaden their

reach into a diverse range of societal needs. The energy usage growth and the associated carbon impact require us to invest in alternate computing fabrics that have a much lower energy footprint. Superconductive computing is one such computing fabric that can deliver ultra-high performance and energy efficiency at scale. But superconductive technology has formidable research challenges that must be resolved before it can be brought to the marketplace. In this technical tutorial, we present key fundamentals of superconductive computing, explain the reason behind why this emerging technology is revolutionary for its energy efficiency, and then we present key challenges that must be addressed to make it viable for fabrication and practical deployment. Circuit path balancing, gate-level pipelining, and memory capacity limitations are just a few examples of the challenges that must be overcome. We discuss several recent advances our DISCoVER Expeditions in Computing team is making related to physical scaling, chip-level integration, compact modeling, design tool support, on-chip memory design, architecture design, and full-system design and integration, including interfacing to room-temperature (non-superconductive) electronics. Our research reduces the technology barriers that pave the way toward feasibly building complex superconductive computing systems in the near future.

**Presenters: Timothy Pinkston (University of Southern California), Sasan Razmkhah (University of Southern California), Murali Annavaram (University of Southern California)**

**2:45 PM - 3:45 PM**

## Lightning Talk

## Leveraging Augmented Reality And Social Computing To Improve Sustainable Cultural Tourism For Mobility-Disabled Users

*Location: Texas 5*

The tourism industry has been rapidly growing, but there is a need to ensure the well-being of local residents and hosts. This study aims to design sustainable tourism that is accessible for individuals with mobility disabilities, who often face challenges in experiencing cultural sites and events. While sustainable tourism is considered a human right, there is a low level of involvement from mobility-disabled individuals, and current literature and technologies are insufficient to meet their needs. The study proposes a solution that utilizes Augmented Reality, and 360-degree views to provide virtual tours of cultural sites and exhibits. Volunteers connected to mobility-disabled users through the app will provide real-time virtual tours without the need for physical travel. The target users of this solution are mobility-disabled individuals, and the volunteers can be tourist guides, locals, or anyone knowledgeable about the cultural significance of the site. This approach differs from existing technologies, as volunteers can offer a personalized and human touch to cultural tourism, providing insights and answering questions. Research has shown that social computing and inclusion are vital for a positive cultural tourism experience for mobility-disabled individuals, and this program offers a unique opportunity for them to connect with another person. Despite existing technologies that provide accessible accommodation, transportation, and tour options, there is a lack of research on mobility-disabled people's experiences and activities in the tourism industry.

**Presenters: Khushboo Chandnani (Indiana University-Purdue University Indianapolis), Pradnya Suryawanshi (Indiana University-Purdue University Indianapolis)**

## Using Social Media to Advance Your Career and Increase Diversity in Tech

*Location: Texas 5*

The use of social media has become a vital part of modern-day life. It has changed the way we interact with others, share information, and even advance our careers. The tech industry is no exception, as social media has become a powerful tool for professionals to connect, network, and find opportunities. However, despite the growing importance of social media in the tech industry, diversity and inclusivity remain a major challenge. In this presentation, we will explore how using social media can help individuals advance their careers and increase diversity in tech.

**Presenter: Ruben Pacheco-Caldera (Uber)**

**2:45 PM - 3:45 PM**

## Panels, Workshops & Presentations

## Achieving Greater Gender Equity in Tech

*Location: Texas 1*

Break Through Tech works at the intersection of academia and industry to propel women into computing degrees

and tech careers. Our programs have reached thousands of women during their early college years, with an emphasis on welcoming Black, Latina, low-income and first-generation college-goers and nonbinary students. Through deep engagement with nearly 200 industry partners, our programs prepare students to launch their tech careers. Bringing together Sprintern alumnae and our professional staff site leads, our panel aims to bring our story of Sprinternships™ to life! The focus of the panel aims to educate students and professionals on how experiential learning opportunities are particularly helpful for underrepresented students to understand future tech pathways and break into a tech internship. Undergraduates will have the opportunity to learn what they may expect from our Sprinterns very own experiences as well as industry professionals who aim to build a more diverse pipeline, invest in equity, and get fresh perspectives. A Sprinternships™ is an experiential learning opportunity offered during a winter or springtime academic break. The program is explicitly designed to bridge the gap between college and careers for a racially and economically diverse group of undergraduate women who want to work in the rapidly growing tech sector. Tailored by the companies that host them, each Sprinternship™ focuses a team of five computer science students (called Sprinterns™) on a three-week, full-time project. Because it is intentionally designed, low-risk, and easy to implement - a Sprinternships™ program can quickly improve a company's diversity profile at the entry-level.

**Presenters: Mario Tano (Break Through Tech Program | Cornell Tech), Shantriya James (Break Through Tech, CUNY), Donna White (Break Through Tech), Amita Shetty (Break Through Tech, UIC)**

## Hispanics in Computing Community

### Birds of a Feather

*Location: Texas 4*

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 now a website http://www.hispanicsincomputing.com/). The impact of this gathering in our community has been tremendous. Several members of the community who attended our BoF as young graduate students are now in tenure-track positions or employed in research organizations. Once again, we propose to hold our annual BoF at the Tapia Conference. The gathering will allow many of us to meet face-to-face and discuss issues facing Hispanics. These past few years have really demonstrated the importance of community to getting students through their programs, new professionals through their early career years, and more established professionals continue to make and achieve new goals. The goal for this year's gathering is to address the problem of being the "one and only" Latino/Hispanic in your position. While the annual BoF is an invaluable resource for us to reconnect with our community, when many of us go home we are the "one and only" at our jobs. Building and maintaining relationships with other Latino/Hispanic computer scientists throughout the year will aid in the success of the retention of Hispanics in computing. By the way, we also take great colorful pictures as seen on the Tapia BOF website.

**Presenters: Dr. Brianna Posadas (Virginia Tech), Dr. Karla Badillo-Urquiola (University of Notre Dame), Dr. Oscar Veliz (Northeastern University), Alexis Cruz-Ayala (Duke University)**

### Protecting Vulnerable Populations: The Role of artificial intelligence and design in Scam Detection and Prevention

*Location: Texas 2*

Scamming is a widespread issue that continues to affect individuals and society as a whole. Phone call scams, in particular, have become increasingly prevalent, with scammers exploiting people's psychological vulnerabilities to elicit personal information. The Federal Trade Commission reported a 70% increase in scam losses in 2021 compared to the previous year, highlighting the urgent need for a solution to address this problem. In our technical session, we will explore the use of AI analysis to prevent scams, with a particular focus on phone call scams. Our approach involves addressing three critical stages: taking preventative measures before a scam, being aware during the scam, and taking action after the scam. We will present a proposed solution in the form of a mobile application that caters to both real-time and post-scam scenarios. The Scam module employs natural language processing techniques to help users identify scam calls and provides warnings and suggestions at specific intervals using haptic and textual feedback. The virtual assistant, Harper, assists users by putting the caller on hold and offering suggestions to prevent them from giving personal information to the scammer. The Post-Scam module provides an actionable

plan sorted by urgency based on the scam's sensitivity of time. Our solution caters to providing the right information at the right time and prioritizes human involvement during emergencies to assist users in avoiding scams. By addressing the psychological and persuasive factors that contribute to individuals falling victim to scams, we aim to prevent financial, emotional, psychological, and social consequences. The audience will gain valuable information about the mechanics and motivations behind scams, as well as an understanding of appropriate actions to take if they fall victim to a scam. We will also delve into the technical and psychological aspects of our proposed solution, providing in-depth information about the project. Our goal is to increase general knowledge and awareness about the issue of scamming and provide a viable solution to this problem.

**Presenters: Riya Thomas (Indiana University-Purdue University Indianapolis), Mansi Rajendra Kasar (Indiana University-Purdue University Indianapolis), Radhika Bhoj (Indiana University-Purdue University Indianapolis)**

## Supporting Neurodivergent Students in Classrooms and into the Workplace

*Location: Texas 3*

This panel will present a number of different perspectives and programs that support neurodivergent students in their coursework and in the workplace. Like many students transitioning to college, neurodivergent students lose many of their prior scaffolds and supports. Unlike neurotypical students, they often have difficulty self-advocating to acquire the help that they need to succeed. They have lower completion rates for courses and degrees and are more likely to take time off in the middle of their degree program. Supporting these students in our classrooms and degree programs requires training faculty on the challenges they experience and developing curriculum and supports that afford better access. In addition to in-classroom support, support is needed to prepare students to enter the workforce and help them stay employed. While supporting students and faculty is important, one of the other goals of programs like these is to help destigmatize neurodiverse people, help neurotypical people better understand their neurodivergent colleagues, and encourage everyone to better integrate the neurodiverse into their organizations and activities.

**Presenters: Adrienne Decker (University at Buffalo), Dr. Andrew Begel (Carnegie Mellon University), Dr. Kurt Eiselt (University of California, Davis)**

**3:00 PM - 5:00 PM**

## Grad School Application Reviews Only

*Location: Exh. Hall E-F*

**3:00 PM - 5:00 PM**

## Supporter Onsite Interviews Only

*Location: Exh. Hall E-F*

**3:45 PM - 4:15 PM**

## Afternoon Break

*Location: Texas Ballroom Foyer*

**4:15 PM - 5:30 PM**

## Panels, Workshops & Presentations

## Making the Move from Grad Student to Professor

*Location: Texas 1*

It is extremely important for underrepresented minority scholars to best position themselves for the academic job market. In this workshop, we'll cover the job market information that advisors haven't told you about. Learn how to make a compelling faculty application by understanding the type of institution you are applying to, branding yourself, and crafting your application documents that specifically address what you bring to the position. We'll also share advice on making the move from grad student to assistant professor. You're on the tenure track and you'll need to be selfish - learn to say no, create balance, and find yourself mentors and sponsors as you navigate the tenure and promotion process.

**Presenter: Lorraine Stinebiser (Rochester Institute of Technology, Office of Faculty Diversity and Recruitment)**

## Radical Financial Aid Solutions for Low-income Students in Computing

*Location: Texas 4*

The multitude of efforts to increase diversity in tech are working and more women and underrepresented students than ever are entering computing education pathways, however, structural barriers remain that prevent low-income students and graduates from accessing the skill-building and networking opportunities required to compete with affluent peers and launch into tech careers. Leveraging data and insights from the Last Mile Education Fund's investments in over 1,000 low-income students from 2020 to the present day, this presentation will explore the ways that college and university practices and overall policies inhibit success for low-income computing students and graduates and offer collaborative solutions to level the playing field for low-income computing students and graduates. With this session, we hope to start a dialogue among faculty, administrators, and other key institutional stakeholders (such as DEI leaders and funders) to examine the places within the undergraduate space that disproportionately disadvantage low-income students and inhibit timely graduation and ultimately, a successful launch into a career in tech. As co-founders of the Last Mile Education Fund, Ruthe Farmer, Dr. Sarah Lee, and Rian Walker bring a wealth of collective knowledge and data from across the tech industry, higher education, and non-profit spaces. Their expertise and experiences with institutional barriers for undergraduate CS women, especially low-income women, and women of color, will lend themselves to the potential solutions in how to bridge the financial gaps that exist for low-income students on campus.

**Presenters: April Curley (Last Mile Education Fund), Ruthe Farmer (Last Mile Education Fund), Dr. Sarah Lee (Last Mile Education Fund, University of Southern Mississippi), Rian Walker (Last Mile Education Fund, Bank of America)**

## ACCEYSSing Community Cultural Wealth to Increase Success for Students of Color in Computing Disciplines

*Location: Texas 2*

Women of color and other historically marginalized minorities are dramatically underrepresented in the computing workforce. To promote racial and gender equity in computing, we must understand prominent influences that increase the persistence of women of color and marginalized groups in computing education and beyond. To develop interventions that broaden participation for women and minorities in computing, we conducted a pilot study to understand how aspects of Community Cultural Wealth (CCW) theory may influence the persistence of this population in their undergraduate education at a Hispanic Serving Institution (HSI) in Texas. This study is part of a larger NSF-funded CAREER project. The CCW framework, which is undergirded by critical race theory, depicts a more anti-deficit approach to understanding the cultural capital of HURM populations. Dr. Tara J. Yosso's CCW framework acknowledges how communities of color resist forms of oppression by utilizing the six forms of capital that are highlighted as aspirational, linguistic, familial, social, navigational, and resistant. In this study, spiritual capital was added as another source that can exist within these other forms of capital or independently to provide individuals with strength and resilience. In this 75-minute interactive workshop, computing faculty, administrators, and students will be encouraged to recognize and amplify students' strengths to be successful in their courses and in the computing workforce.

**Presenter: Dr. Shetay Ashford-Hanserd (Texas State University)**

## Time Series Biomedical Imaging and Computational Epidemiology

*Location: Texas 3*

The workshop aims to discuss and develop a strategic agenda for time series biomedical imaging and computational epidemiology. Recent developments at the interface of biomedical imaging and deep learning have shown that several basic issues in medical and biological imaging, including denoising, augmentation, segmentation, reconstruction, and analysis can be addressed by time series algorithms, including Neural Networks, Fourier analysis, Spectral analysis, Markov Model (MM), Hidden Markov Models, Principal Component Analysis (PCA), and Autoregressive Integrated Moving Average (ARIMA). Many of these actions represent high-impact opportunities for real-world change and are simultaneously interesting clinical

and academic research problems. There have been rapid advances at the intersection of deep learning and medicine over the last few years, especially for the interpretation of time series of biomedical images, acquired from ultrasound, magnetic resonance, X-ray, computed tomography, and positron emission tomography (Sintorn et al., 2017), by monitoring disease progression or active treatment. Through presentations, discussions, breakaway sessions, and informal forums, participants will explore fundamentals of biomedical imaging, deep learning, time series algorithms for improving the speed and scalability of biomedical image models; collaborative research between machine learning researchers and clinical practitioners; overcoming the bottlenecks in knowledge and technology transfer from research labs to clinical practitioners; funding, structures for collaboration and dissemination, priority research areas and engagement.

**Presenters: Dr. Sampson Akwafuo (California State University), Dr. Blessing Ojeme (University of Georgia)**

**6:00 PM - 9:00 PM**

## Tapia Awards Banquet

*Location: Texas Ballroom*

The Growth Mindset: The Magic Happens Outside Your Comfort Zone! Technology and the world of computing are ever-evolving. By allowing ourselves to think, learn, and operate outside our comfort zone, we can embrace a growth mindset, promote creativity, and solve critical problems. In our industry, we need to push the envelope, create innovative ideas, and help solve issues that matter.

**Speaker: Tara Astigarraga (IBM)**

**9:00 PM - 11:00 PM**

## Dance Party

*Location: Texas Ballroom*

# SATURDAY | PROGRAM SCHEDULE

SEPTEMBER 16, 2023
(POST CONFERENCE EVENTS)

**8:00 AM - 5:00 PM**

## STARS Celebration

**9:00 AM - 11:30 AM**

## LEAP Alliance Breakfast & Focus Group

*(Private Event)*

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## THE 2023 CMD-IT/ACM RICHARD TAPIA CELEBRATION OF DIVERSITY IN COMPUTING CONFERENCE

**The 2023 CMD-IT/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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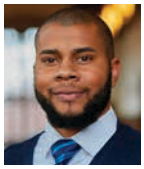

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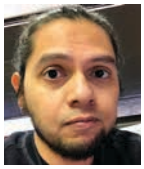

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