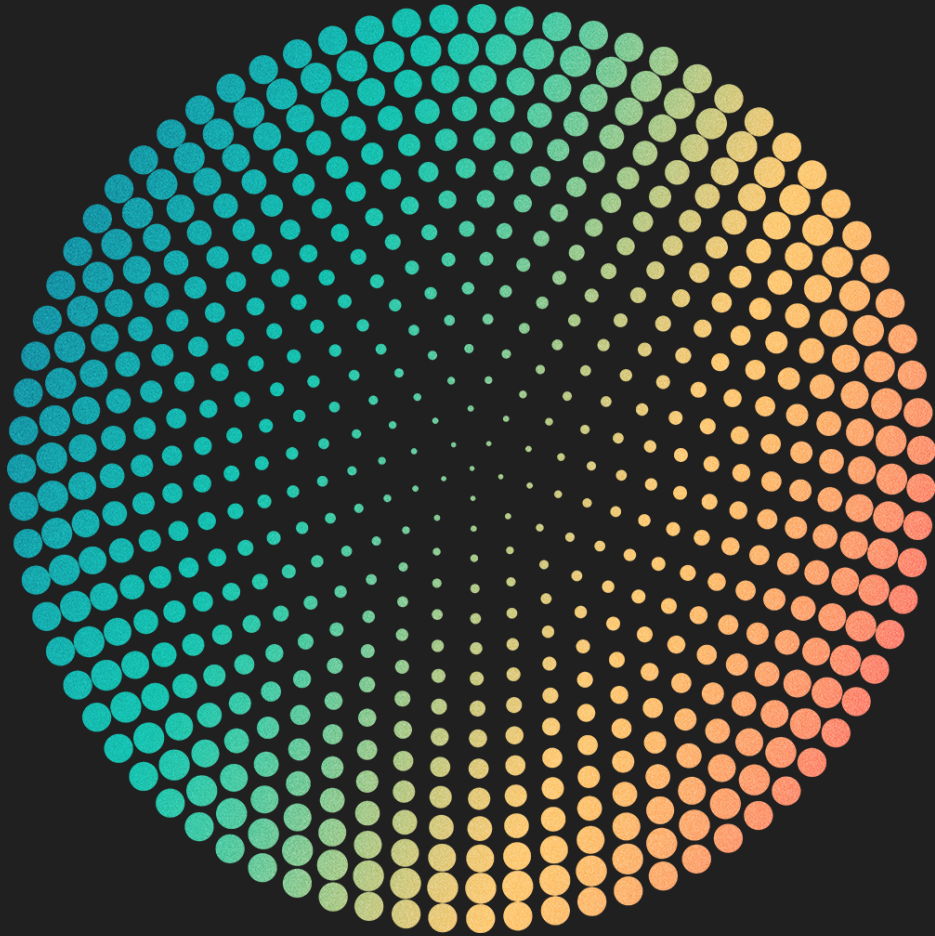


My RUA Community: Celebrating the Whole Self



RUA

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This material is based upon work supported by the National Science Foundation under Grant No. 2014976, 2014200, 2014600, 2014755, 2014896, 2015049, 2015104, 2015149, 2015214. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.



Welcome to the Research University Alliance 2022 Conference!

Welcome to Caltech! We are so delighted that you are able to join us in beautiful Pasadena for the Research University Alliance conference. Caltech, though the smallest RUA institution in terms of student population size, is a world-renowned science and engineering institute. A true testament to what can be accomplished when a small group of individuals come together and work towards a common goal. We hope that this inspiration and the lessons learned at the conference can serve as a catalyst for change when you return to your home campuses. This year's conference has representation from our 9 partner institutions and we hope that you find an opportunity to network and connect with individuals over the days that we will spend together.

The goal of the 2022 conference is to create a vibrant, connected community of RUA graduate students and postdocs and provide safe spaces to discuss and learn about tough topics facing underrepresented academics. Each of our learning spaces have been crafted to maximize interaction among participants and provide opportunities to build mentoring networks.

We hope that you enjoy our programming and take the time to learn more about our RUA activities including our Research Exchange program, our Professional Development programming and the launch of our new Postdoc Portal!

On behalf of the conference organizing committee we hope you have a wonderful and enriching time,

Zoe Fonseca-Kelly
Robin Sugiura
Meagan Heirwegh
Ravenn Gethers
Jina Kim
Terri Lee
Felicia Benton-Johnson
Sofie Kleppner

Caltech 101

Conference WIFI Information

Network - Caltech Visitor
Username - RUAConference
Password - #RUA22

Coffee and Caltech Merch

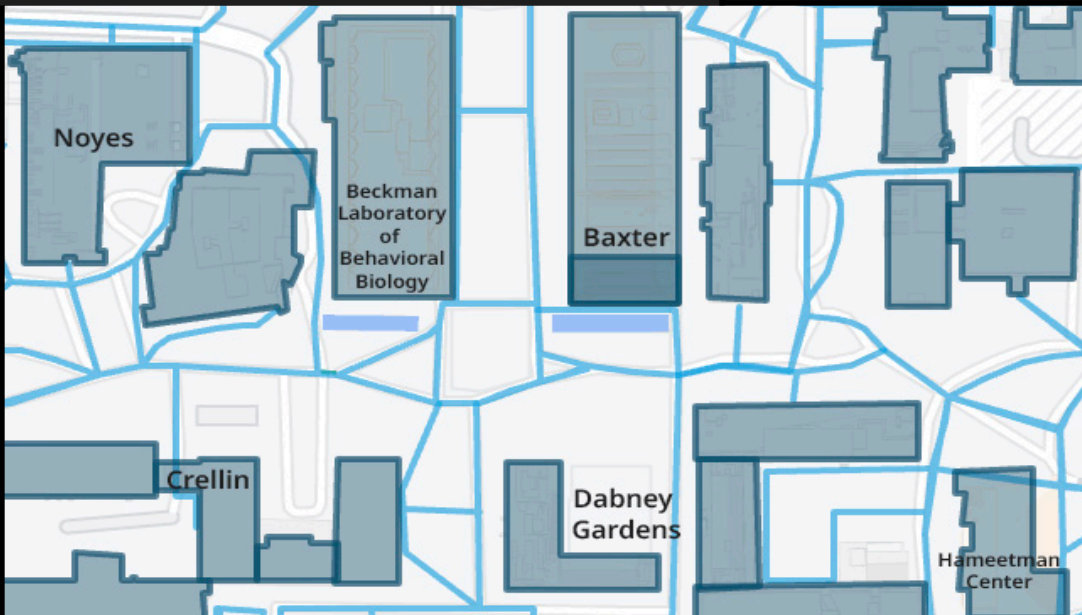
Available at the Red Door Cafe and Caltech Store in the Hameetman Center.

Campus Map

Interactive map available at:
caltech.edu/map/campus
Includes information about accessibility on campus including accessible restrooms, building entrances and routes across campus.

Parking

If you have not received your parking passes, please visit the conference check-in desk in the Dabney Gardens. Parking lot locations can be found on the Caltech campus map.



Non-Gendered Restroom Locations

Baxter

First Floor - 118

Beckman (BBB)

Third Floor - 331

Crellin

Second Floor - 267

Basement - B148

Hameetman Center

First Floor

Noyes

Third Floor - 330

Caltech Walking Tour

Have some time to explore? A self-guided Caltech campus tour is available at bit.ly/CaltechWalkingTour.

Need to send an email, take a break or store your luggage?

The lounge at the end of Dabney Gardens is open and available for use.

Rideshare

Don't forget to upload all of your rideshare receipts to this QR code.



Schedule

Monday September 12

8:00 - 8:30 am

Dabney Gardens

Breakfast & Conference Check-In

8:30 - 9:30 am

Baxter Lecture Hall

Keynote Address

Alone in a Crowded Room:

What I Wish I'd Known Before Entering Academia as a Black Woman

Monica Cox

Distinguished Professor of Engineering, The Ohio State University

This keynote is informed from approximately twenty years of experience of a Black engineering woman faculty who was often a “first” or “only” in her work environments. Dr. Cox will share how, despite workplace issues, she created a professional blueprint that allowed her to build a global research brand that pushed boundaries and represented her values. The session will invite attendees to reflect on their core values and develop professional blueprints that allow them to emerge from the workplace bolder, wiser, and whole.

9:30 - 11:00 am

Breakout Session I: Workshops

The Author of Your Own Life: Shattering Narratives

Sumun (Sumi) Pendakur

DEI Strategist & Consultant

Baxter Lecture Hall

In this hands-on, interactive breakout session, we'll focus on what you have and your strengths (rather than on gaps and barriers). Knowing oneself deeply and having a secure self-concept are two of the most critical tools in navigating academia healthily in the long run. Join us for a dive into self-authorship tools and neuroplasticity, as direct challenges to the often narrow or oppressive structures that confront us.

Strategic Service in Service of Your Career

Caleb McKinney

Associate Professor, Department of Rehabilitation Medicine, Georgetown University Medical Center

Beckman Laboratory of Behavioral Biology B180

Performing service and outreach activities can be very fulfilling and impactful on institutions and communities, but it's important to take on diversity, equity, and inclusion service work in a way that aligns with professional development goals and leads to equitable career advancement. This workshop will utilize a series of reflective and collaborative activities, rooted in design thinking, to help attendees tie service and outreach opportunities into their professional identity and aspirations for career growth.

11:00 - 11:30 am

Dabney Gardens

Networking, Coffee & Mental Health Break

11:30 - 12:30 pm

Panel Discussions

Alumni Perspectives

RUA & California Alliance Program Alumni

Baxter Lecture Hall

Four NSF AGEP alliance alumni will share personal stories about their journey to the professoriate and insights on how to leverage opportunities provided by the alliance to achieve your career goals.

Advancing Faculty Hiring Practices

RUA Institute Faculty and Board Members

Beckman Laboratory of Behavioral Biology, B180

The RUA Faculty Hiring Best Practices Group co-chairs, Mark J. T. Smith and Marvin Hackert, will open this session with a summary of what the group learned. In addition, the session will include a facilitated discussion among the audience along with a RUA panel.

12:30 - 1:30 pm

Dabney Gardens

Lunch

1:30 - 3:00 pm

Breakout Session II: Workshops

Creating a Lab Culture that Aligns with and Perpetuates Your Values

Fatima Alleyne

Director of Community Engagement and Inclusive Practices, College of Engineering, University of California Berkeley

Beckman Laboratory of Behavioral Biology, B180

In this workshop we will journey through the process of cultivating a laboratory environment grounded in your values. Starting with you, how you experienced/continue to experience the world, as well as the academic environment, we will start with:

- Thinking about the type of lab environment you want to cultivate.
- Thinking about your experiences and how that shapes what you want for your lab.

We will become more cognizant of the structure that is currently in place that doesn't benefit you/your students. We will explore how to create a culture that aligns with and perpetuates your values and the cost of not creating a culture that aligns and perpetuates your values. We will explore the concepts of personal well-being, implicit and explicit communications, and diversity, equity, inclusion, and belonging principles in our research environment. You will also receive resources to help communicate your values as expectations to others.

Navigating the Seas of your Career

Scott K. Cushing

Assistant Professor of Chemistry, California Institute of Technology

Chukwuebuka (Buka) C. Nweke

Assistant Professor of Civil and Environmental Engineering, University of Southern California

Noyes 153

This session is only open to graduate students and postdocs.

The PhD to postdoc to beyond transitions are often anything but smooth sailing. In this session, we talk about building community and support systems, facing and being aware of mental health or self-defeating behaviors, and planning for your final job destination, regardless of where it takes you.

3:00 - 3:30 pm

Dabney Gardens

Networking, Coffee & Mental Health Break

3:30 - 4:30 pm

Breakout Session III: Research Lightning Talks

Session I

Beckman Laboratory of Behavioral Biology, B180

Session II

Crellin 151

Session III

Noyes 147

Session IV

Noyes 153

Refer to lightning talk speaker list for speaker names and talk titles.

4:30 - 5:00 pm

Dabney Gardens

Welcoming Remarks

Welcome Address

Thomas F. Rosenbaum

President, California Institute of Technology

The Decisions to Follow Your Passion

Shirley M. Malcom

Senior Advisor and Director, SEA Change, American Association for the Advancement of Science

Whether we “take the fork in the road” (Yogi Berra) or focus on “The Road Not Taken” (Robert Frost) each of us makes choices about our life’s journey. This presentation will talk about the role of choice and the process of choosing a career and a life within science, highlighting the roles of intentionality and opportunity.

5:00 - 6:00 pm

Dabney Gardens

Poster Session & Networking

Refer to poster presenter list for presenter names and poster titles.

6:00 - 8:00 pm

Dabney Gardens

Dinner

Research University Alliance: History and Vision

Douglas C. Rees

Professor of Chemistry, California Institute of Technology

Lindsey Malcom-Piqueux

Assistant Vice President, Diversity, Equity, Inclusion & Assessment, California Institute of Technology

Schedule

Tuesday September 13

8:00 - 8:30 am

Dabney Gardens

Breakfast

8:30 - 9:30 am

Baxter Lecture Hall

Keynote Address

Only the Lonely?: Finding Community through Common Cause

Sumun (Sumi) Pendakur

DEI Strategist & Consultant

The journey through academia can be isolating and fraught. But it doesn't have to be. This keynote frames an opportunity and a pathway to reduce the experience of being lonely, even when you're the only. Join us for a high energy look at getting out of our own lanes to skillfully build coalitions and kinship networks to cultivate community through the postdoc pathway and into the professoriate.

9:30 - 11:00 am

Breakout Session IV: Workshops

A Courageous Call: Allyship is a Journey

Felicia Benton-Johnson

Assistant Dean & Director, Center for Engineering Education and Diversity, Georgia Institute of Technology

Beckman Laboratory of Behavioral Biology, B180

Allyship is a lifelong process that takes Courage, a quality we all possess. There are times during your academic journey you have heard, seen, or experienced a negative statement and or action towards a marginalized individual and/or group. During this interactive session, we will focus on the importance of being an ally, the various aspects of allyship, and identify tips/ tools to increase your allyship Courage as you journey across the terrains of life.

Communication for Identity-Conscious Mentoring

Robert Brown

Director of Diversity, Inclusion, Equity and Outreach, Medill School of Journalism and Integrated Marketing Communications, Northwestern University

Baxter Lecture Hall

Faculty, postdocs, and graduate students often provide mentorship to others in their career, but rarely receive training around supervision and mentorship. Professional development focuses on skill-building in functional areas yet often ignores lived experiences of bias and hostility in the professoriate that prevent learning and growth. This session advocates for an original approach by presenting nine core strategies of identity-conscious mentorship practice, including both traditional and innovative approaches.

11:00 - 11:30 am

Dabney Gardens

Networking, Coffee & Mental Health Break

11:30 -12:30 pm

Dabney Gardens

Closing Keynote Address

Carving Our Way Forward in Academia: Community Cultural Wealth & The Long Struggle for Justice

Tara J. Yosso

Professor, Graduate School of Education, University of California Riverside

Prof. Yosso's keynote will offer timely insights for our STEM community, inviting us to rethink schooling structures, practices and discourse, as we transition into academia. She will ask us to consider how we might foster a critical historical perspective of the communities we aim to serve in our research and teaching. As we are uniquely poised to train the next generation of STEM scholars, she will offer us an opportunity to reflect on ways we might draw on the ingenuity and courage of those who have come before us in the struggle for justice.

12:30 - 1:30 pm

Dabney Gardens

Lunch

Box lunches will be available for all participants for travel purposes. Participants who do not need to immediately leave are welcome to enjoy their lunches in the Dabney Gardens

Lightning Talk Speaker List

Session 1

Unitary Quantum Perceptrons

Rodrigo Araiza Bravo, Harvard University

Exploring Quantum Phase Transitions for Small Numbers of Atoms

Maryrose Barrios, Georgia Institute of Technology

The NEXT Best Thing: Finding the Nature of Neutrinos

Taylor Contreras, Harvard University

Particles, Strings, and Black Holes

Nick Geiser, University of California Los Angeles

Buckling, Wrinkling, Crumpling - Oh My! Simulations of Thin Sheet Deformations

Madelyn Leembruggen, Harvard University

Session 2

Application of Emerging Nanofabrication Methods to Lithium-Ion Batteries

Crystal Barrera, University of Texas at Austin

Split-Step Methods with Finite Difference Schemes and Analytic Continuation Formulas

Jorge Cisneros Paz, University of Washington

Intrinsic Magnetic Topological Insulators: A Path to Dissipationless Quantum Devices

Mengke Liu, University of Texas at Austin

Measuring Proteins in Egg Tempera Paintings: Analytical Challenges and New Methodologies

Daniel Vallejo, Georgia Institute of Technology

Session 3

Astrophysical Implications of Non-Standard Dark Matter

Akaxia Cruz, University of Washington

Ground-State Energies from Approximate Higher-Order Moments

Brad Ganoë, University of California Berkeley

Supermassive Black Holes Enrich the Gas Around Galaxies with Metals

Natalie Nicole Sanchez, California Institute of Technology

Finding and Controlling Defects in Halide Perovskite Semiconductors

Julian Vigil, Stanford University

Session 4

Characterization of Hydrogel/3D Printed Scaffold Composites for Osteochondral Tissue Engineering

Nettie Brown, Georgia Institute of Technology

Air Pollution and Health Benefits from Clean Cooking Policies in Ecuador

Carlos Gould, Stanford University

Quantifying the Compounded Effects of Anthropogenic Emissions and Specific Infrastructures on Urban Air Quality

Abi Lawal, University of California Berkeley

Explorations in the Exercise of Power: Resisting Inequity in Engineering Education

Kenya Mejia, University of Washington

Synthesis of a Ferrate-Coated Sand Media and Application for Removal Organics and Metals in Urban Stormwater

Fanny Okaikue-Woodi, University of Washington

Poster Presenter List

Engineering and Squeezing a Quantum State

Maryrose Barrios, Georgia Institute of Technology

Quantifying Multimodal Metrics of Performance on Arterial Corridors Using ITS Data

Maria Bassil, University of Texas at Austin

Health Impacts of Smoke Exposure in South America: Increased Risk for Populations in the Amazonian Indigenous Territories

Eimy Bonilla, Harvard University

Elliptic Mahler Measure via Genetic Algorithms

John Clark, University of Texas at Austin

A World of Women in STEM: An Online Learning Platform

Taylor Contreras, Harvard University

Madelyn Leembruggen, Harvard University

3D Bioprinting a Tissue Engineered Aortic Valve for a Biomimetic and Integrated Leaflet Scaffold

Kenneth De Jesus, Georgia Institute of Technology

Targeting Redox-Sensitive Cysteines in Pyruvate Kinase Isoform 2 to Reprogram the Tumor Microenvironment

Cassandra Decosto, Stanford University

Dark Matter Decay to Neutrinos

Diyaselis Delgado, Harvard University

The Fallacy of "There are no 'good' candidates": Diversity, Institutional Prestige, Academic Pathways, and Engineering Graduate Student and Faculty Social Mobility

Gabriella Fleming, University of Texas at Austin

Unlocking Your Power: Scholar Activism for Student Groups

Andre Fuqua, University of Texas at Austin

Ab Initio Magnetic Properties: NMR Spectra via Non-Perturbative Fields

Brad Ganoë, University of California Berkeley

Particles, Strings, and Black Holes

Nick Geiser, University of California Los Angeles

Adaptive Solvent Analysis, With Applications to High Enthalpy Turbulent Boundary Layer Flows

Salvador Gomez, California Institute of Technology

Development of a Non-Directed Petasis–Mannich Reaction for Application Toward Complex Dimer Syntheses

Kevin Gonzalez, California Institute of Technology

Valorization of Caribbean Sargassum biomass as a source of alginate and sugars for de novo biodiesel production

Angela Gordillo Sierra, University of Texas at Austin

Understanding Relationships Between Opportunistic Pathogens and Drinking Water Age

Brittany Hicks, University of Michigan

Monolayer 1T-NbSe₂ as a 2D-Correlated Magnetic Insulator

Mengke Liu, University of Texas at Austin

High Quality Growth and Transfer of Graphene on Sapphire

Sivasakthya Mohan, University of Texas at Austin

Measuring the evolution of an increased rate of plasmid conjugation in an evolution experiment

Adamaris Muñiz Tirado, University of Washington

Synthesis of a ferrate-coated sand media and application for removal organics and metals in urban stormwater

Fanny Okaikue-Woodi, University of Washington

Metabolomic and Metagenomic Analysis of the Salivary Metabolome During Induced Gingivitis Exposes Delayed Metabolic Response in Oral Health Remediation

Maribel Okyie, University of Michigan

Physical and Neurological Factors Associated with Tool Use Proficiency in American Crows

LomaJohn Pendergraft, University of Washington

Transition from Griffith to vdW Interface Governed 2D Crystal Nanoblister

Yifan Rao, University of Texas at Austin

Deep Learning, and Simulation Tool for Aggression Behaviors in Lake Malawi Cichlids

Breanna Shi, Georgia Institute of Technology

Consensus-Design Based Stabilization of P411 Enzymes

Doris Taylor, Caltech

Density Functional Theory (DFT) Studies of Nitrogenase Active Site Dynamics

Stephanie Threatt, California Institute of Technology

The Collaborative Intersection of Cultural Heritage and Scientific Research

Daniel Vallejo, Georgia Institute of Technology

Anode-Free Rechargeable Sodium Metal Batteries Enabled by Sodium–Antimony–Telluride Intermetallic

Yixian Wang, University of Texas at Austin

Keynote Speakers

Monica F. Cox

*Distinguished Professor of Engineering
The Ohio State University*



Monica F. Cox, Ph.D., is a disruptor, trailblazer, change agent, and leader who believes in living an authentic life even if it makes people uncomfortable. She grew up an only child in rural southeast Alabama, where she was raised by her educator parents to persist in the face of personal and professional adversity. As an authenticity coach, she guides clients in areas of career development; business strategy; and diversity, equity, and inclusion. She is a Distinguished Professor of Engineering at The Ohio State University and is a 2020 American Society for Engineering Education (ASEE) Fellow. She holds degrees in Mathematics (B.S., Spelman College), Industrial Engineering (M.S., University of Alabama), and Leadership and Policy Studies (Ph.D., Peabody College at Vanderbilt University, 2005). She began her academic career in the School of Engineering Education at Purdue University, where she earned a Presidential Career Award for Scientists and Engineers (PECASE), becoming the first African American woman to earn tenure in Purdue's College of Engineering.

From 2016 to 2020, she served as the Inaugural Chair in the Department of Engineering Education at The Ohio State University. She is the Founder and CEO of STEMinent LLC, which houses educational assessment, professional development, and media offerings. Her research focuses on the use of mixed methodologies to explore questions across the education continuum, particularly why engineering women faculty persist. Dr. Cox has led and collaborated on multidisciplinary projects totaling approximately \$16 million and has authored over 130 publications.

Sumun (Sumi) Pendakur

*DEI Strategist & Consultant
Research University Alliance External Advisory Board
Member*



Dr. Sumun L. Pendakur is a scholar-practitioner, an activist-educator, a skilled facilitator, and a mom. With nearly 20 years in the field of higher education and a decade as a DEI speaker and trainer, Sumi's work and research focuses on helping organizations build capacity for social justice and racial equity by empowering individuals at all levels to be transformational agents of change in their spheres of influence. Most recently, Sumi was the Chief Learning Officer at the USC Race and Equity Center, dedicated to advancing scalable racial justice in higher education and other sectors. Prior to that position, Sumi held roles as the Assistant Vice President for Diversity and Inclusion at Harvey Mudd College, serving on the President's Cabinet and directing the Office of Institutional Diversity, and as the Director for USC Asian Pacific American Student Services. Sumi served for multiple years as a Faculty Coach for the American Association of Colleges and University's (AAC&U) TIDES (Teaching to Increase Diversity and Equity in STEM) Institute and is currently on the external advisory board for the NSF AGEP Research University Alliance. Sumi just wrapped a 6-year term on the Board of Directors for NADOHE, the National Association of Diversity Officers in Higher Education. Pendakur is a graduate of Northwestern University with a double major in Women's Studies and History and a Minor in Spanish. She holds an M.A. in Higher Education Administration from the University of Michigan. She received her doctorate in Higher Education Leadership from the USC Rossier School of Education. In 2019, she was named one of the top 35 women in higher education by *Diverse: Issues in Higher Education* magazine. Sumi is the multilingual daughter of immigrants, was raised in the Midwest, and now calls Los Angeles her home.

Tara J. Yosso

*Professor, Graduate School of Education
University of California Riverside*

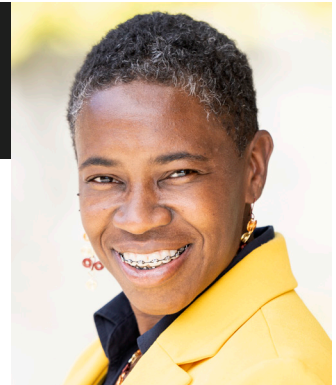


Dr. Tara J. Yosso is a first generation college student who earned her B.A. at UCLA in an individual major she designed: “Social Psychology of Education with an Emphasis in Chicana/o Studies.” She earned her Ph.D. also at UCLA in the Graduate School of Education and Information Studies, in Urban Schooling. She has authored and co-authored numerous chapters and articles in publications such as the Harvard Educational Review, Journal of Popular Film and Television, and History of Education Quarterly. Her research is extensively cited within and beyond education. For example, her article, “Whose Culture has Capital? A Critical Race Theory Discussion of Community Cultural Wealth,” has become the top cited article in Race Ethnicity and Education since its publication in 2005—with almost 9,000 citations. The American Educational Studies Association recognized her book, *Critical Race Counterstories along the Chicana/Chicano Educational Pipeline* (Routledge) with a 2008 Critics’ Choice Book Award, and some of the ten thousand copies that have been sold are being used in colleges and universities nationally and internationally, as far as South Africa, New Zealand, Norway, and as close as University of Illinois, Urbana-Champaign. She has been awarded a Ford Foundation Postdoctoral Fellowship for Diversity and Excellence in University Teaching, a 2017 Derrick Bell Legacy Award from the Critical Race Studies in Education Association, and served as the 2021-22 Inaugural Distinguished Scholar in Residence for the Institute of Emancipatory Education in the Connie L. Lurie College of Education at San José State University. She is also one of seven scholars/activists recognized by the Color of Change organization’s 2022 Inaugural Black History Now Awards with an award established in her honor, the “Tara J. Yosso Award for Excellence in Counterstorytelling in Education.” Dr. Yosso is a Professor in the School of Education at the University of California, Riverside.

Featured Speakers

Fatima Alleyne

*Director of Community Engagement and Inclusive Practices
College of Engineering, University of California Berkeley*



Fatima Alleyne, Ph.D., is the director of Community Engagement and Inclusive Practices in the College of Engineering (COE) at UC Berkeley. She brings her passion and love for science, technology, engineering and math (STEM) and education into her work to develop programs that promote equity; foster a positive, inclusive culture; and increase access and opportunities to those who have historically been underrepresented in STEM. She also led a strategic planning process to guide programs and priorities to advance diversity, equity and inclusion (DEI) in the College. A core component of her work, Fatima engages diverse members of our campus community on the topic of DEI. Her work has been lauded by UC Berkeley's chancellor with recognition as a Chancellor's Outstanding Staff Award recipient as well as Advising and Student Services as an Equity Champion Award recipient in 2022.

Prior to this role, Fatima started her own consulting business and served as the director of COE faculty engagement, consultant for the Center for Restorative Solutions, research general engineer at the U.S. Department of Agriculture, and education and outreach coordinator at an NSF-funded research center and research specialist, both at UC Berkeley. Her commitment and passion for STEM education has led to her service on a range of committees on campus and in her community, including the development of STEM programs in K-12 schools. Fatima earned her Ph.D. and M.S. degrees in materials science and engineering from UC Berkeley and a B.A. in chemistry from City University of New York, Hunter College.



Felicia Benton-Johnson

*Assistant Dean & Director
Center for Engineering Education and Diversity (CEED)
Georgia Institute of Technology, College of Engineering*

Dr. Felicia Benton-Johnson is an assistant dean in the College of Engineering at the Georgia Institute of Technology (Georgia Tech). She has established herself as a leading national practitioner in the areas of development, implementation, and evaluation of practical strategies to cultivate an inclusive organizational culture, and broaden participation in STEM fields at the undergraduate, graduate, post-doc, and faculty levels. Her models for fostering impactful collaborations with minority serving institutions and establishing successful transfer articulation agreements that expand access to post-secondary engineering education, are praised by her colleagues and peers as the standard for exemplary practices. She is the founding director of Georgia Tech's Center for Engineering Education and Diversity (CEED), which continues to experience demonstrated and unprecedented success creating effective programs that expand access to historically underrepresented populations in STEM under her leadership. Dr. Benton-Johnson collaborates with a wide variety of constituencies across the nation to promote a culture of inclusion and is recognized as an expert in increasing diverse participation in STEM. She has received awards at the national and institutional levels for her innovative initiatives and her contributions to broadening and enhancing students' participation in STEM fields. Dr. Benton-Johnson serves as Vice Chair for the Executive Board of Directors for the National GEM Consortium, serves on the National Materials and Manufacturing Board on Mathematical Sciences and Analytics, National Academies of Sciences, Engineering, and Medicine. She is also a member of the 50K Coalition Community Linkages Committee, the National Society of Black Engineers, the American Society of Engineering Education, and the Women in Engineering Proactive Network.

Robert Brown

*Director of Diversity, Inclusion, Equity, and Outreach
Northwestern University Medill School of Journalism and Integrated
Marketing Communications*



Robert Brown (he, him, his) serves as the inaugural Director of Diversity, Inclusion, Equity, and Outreach in the Medill School of Journalism and Integrated Marketing Communications at Northwestern University in Evanston, IL, where he works alongside students, faculty, and staff to reimagine pedagogy, policy, and programs. Previously, he served as the inaugural Director of Social Justice Education at Northwestern, where he led several curricular and co-curricular institutional social justice education initiatives.

He also provides organizational development consultation and training with a focus on social justice, leadership, and organizational change. His work centers on dismantling systems of oppression through critical dialogue and reflection intertwined with theoretical concepts. Prior to joining Northwestern, Rob held professional roles in Residence Life and Multicultural Affairs at Washington University in St. Louis and University of Wisconsin –Madison.

Robert has presented and facilitated regionally and nationally on topics related to social justice education, racial justice, inclusive pedagogy, identity-conscious supervision, assessment & evaluation, college men & masculinities, and civic engagement. Rob is an alumnus of the Social Justice Training Institute (SJTI), a past faculty and intern with SJTI, Lead Facilitator with LeaderShape, and has held leadership roles in NASPA and ACPA. Robert holds a BS in Finance and Community Service Studies from DePaul University, MA in Student Affairs Administration from Michigan State University, and is currently pursuing his PhD in Higher Education Leadership at Colorado State University. He was honored to receive the 2020 DePaul University Distinguished Alumni Award for his commitment to the Vincentian mission through his leadership on equity and social justice issues. Robert's research interests explore topics related to equity and inclusion in higher education; faculty development and critical pedagogy; and identity-conscious supervision and management. Most recently, he co-authored *Identity-Conscious Supervision in Student Affairs: Building Relationship & Transforming Institutions*, which was published by Routledge.

He is a member of Alpha Phi Alpha Fraternity, Inc. and enjoys traveling, golfing, binge watching TV shows, cooking, watching sports, and spending time with his wife, son, and friends and family around Chicago! Rob works diligently to bring his professional experiences, research interests, and passion for social justice to life through his work as a social justice educator always seeking to create space for community building, healing, and liberation.



Scott K. Cushing

*Assistant Professor of Chemistry
California Institute of Technology*

Scott Cushing is an Assistant Professor at Caltech with a multidisciplinary background spanning Chemistry, Materials Science, and Physics. His research focuses on the creation of new scientific instrumentation that can translate quantum phenomena to practical devices and applications. The Cushing lab is currently pioneering the use of attosecond x-ray, time-resolved TEM-EELS, and ultrafast beams of entangled photons for a range of microscopy and spectroscopy applications. Scott has been awarded DOE, AFOSR, Rose Hill, Cottrell, and ACS related Early Career awards. Scott has published over 50

papers, including 10 since being at Caltech, that have been cited over 8,000 times with an h-index of >30. Scott holds multiple patents, some of which led to a solar energy company. In 2022 Scott was awarded the inaugural Shirley M. Malcom Prize for Excellence in Mentoring at Caltech.

Marvin Hackert

*Senior Associate Dean, Fellowships and Graduate Affairs
William Shive Centennial Professor in Biochemistry
The University of Texas at Austin*



Marv Hackert currently serves as the Shive Professor of Biochemistry and a Senior Associate Dean of the Graduate School at UT-Austin where he oversees graduate student fellowships and works with graduate affairs. Hackert received his B.A. in Chemistry from Central College and his Ph.D. from Iowa State University. After completing an NIH postdoctoral fellowship at Purdue University, he joined the faculty at UT-Austin in the Chemistry Department in the 1970's where he later served as Chair of the Department of Chemistry and Biochemistry, Chair of the Graduate Assembly, Chair of the Faculty Council, and since 2005 as Associate Dean in the Graduate School. Related to his research interests in structural biology, he has served as Chair of the US National Committee for Crystallography, the American Crystallographic Association, and the International Union of Crystallography. Dean Hackert represented UT-Austin in the former California AGEP Alliance and serves as the PI for UT-Austin's participation in the RUA AGEP award.



Shirley Malcom

*Senior Advisor and Director, SEA Change
American Association for the Advancement of Science
Senior Trustee, California Institute of Technology Board of Trustees*

Shirley Malcom is senior advisor and director of SEA Change, an institutional transformation initiative, at the American Association for the Advancement of Science (AAAS). In her more than 40-year tenure at the Association she has worked to improve the quality and increase access to education and careers in STEMM for all women, BIPOC men (Black, Indigenous and People of Color), persons with disabilities and other marginalized groups.

Dr. Malcom is a trustee of Caltech and regent of Morgan State University, an HBCU in Baltimore, MD. She is a former member of the National Science Board, the policymaking body of the National Science Foundation, and served on President Clinton's Committee of Advisors on Science and Technology. Malcom, a native of Birmingham, Alabama, received her PhD in ecology from Penn State, masters in zoology from UCLA and bachelor's with distinction in zoology from the University of Washington. She has been recognized for her work and service by all of these institutions, as recipient of the Distinguished Alumni Award from Penn State (2001), the UCLA Medal (2015), and Alumna Summa Laude Dignata of the University of Washington (1998). In addition, in 2022, Penn State recognized Malcom by naming a building in its Innovation Park in her honor. Malcom is an elected fellow of the AAAS and a member of the American Academy of Arts and Sciences. She holds 17 honorary degrees and is the 2021 recipient of the Gold Key Award of Sigma Xi. Malcom, former high school science teacher and university faculty member, serves on the boards of the Heinz Endowments, Kavli Foundation and Public Agenda. She chairs the board of NMSI, the National Math-Science Initiative. In 2003, Malcom received the Public Welfare Medal of the National Academy of Sciences, the highest award given by the Academy.

Lindsey Malcom-Piqueux

*Assistant Vice President, Diversity, Equity, Inclusion & Assessment
Chief Diversity Officer, Chief Institutional Research Officer
California Institute of Technology*

Dr. Lindsey Malcom-Piqueux is the Assistant Vice President for Diversity, Equity, Inclusion, and Assessment, the Chief Diversity Officer, and the Chief Institutional Research Officer at Caltech. In this role, she develops and implements research-informed, metrics-driven institutional efforts to ensure that Caltech is a diverse, equitable and inclusive environment for all community members.



Caleb McKinney

*Associate Professor, Department of Rehabilitation Medicine
Associate Dean of Graduate and Postdoctoral Training & Development
for Biomedical Graduate Education
Georgetown University Medical Center*



Caleb C. McKinney, Ph.D., M.P.S. is an associate professor in the Department of Rehabilitation Medicine and associate dean of Graduate and Postdoctoral Training & Development for Biomedical Graduate Education (BGE) at Georgetown University Medical Center (GUMC). He is committed to advocacy and career formation of graduate students, and postdoctoral and clinical research fellows. Dr. McKinney is also a principal investigator and co-director of the NIH/NIGMS-funded Georgetown University Initiative for Maximizing Student Development (IMSD), a predoctoral T32 training program that provides interprofessional and interdisciplinary training and student development activities focused on enhancing biomedical workforce diversity. Moreover, as a GUMC co-investigator for the NIH-funded Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD) Data Science Training Core, he designs programs for academic and community stakeholders to build workforce development initiatives that curate a pipeline of diverse individuals into data science research focused on mitigating health disparities. Dr. McKinney is also Treasurer and chair of Finance for the Board of Directors of the National Postdoctoral Association (NPA), having previously served as a diversity officer and board liaison for Diversity Affairs for the NPA. Dr. McKinney graduated from Cornell University with a B.S. in Biology and a minor in Applied Economics and Management. He then completed his PhD in microbiology from New York University, a Master's in Professional Studies in Design Management and Communications at Georgetown University, and the Harvard Macy Program for Educators in the Health Professions.

Chukwuebuka (Buka) C. Nweke

*Assistant Professor of Civil and Environmental Engineering
University of Southern California Viterbi College of Engineering*

Dr. Chukwuebuka (Buka) Nweke is a professor of Civil and Environmental Engineering at the University of Southern California, Viterbi School of Engineering. He directs the N.E.S.T. Research Group where his research is focused on solving problems at the intersection of geotechnical engineering, earthquake engineering, seismology, and geomorphology. Prof. Nweke earned his Ph.D. and M.S in Civil (Geotechnical) and Environmental Engineering at the University of California, Berkeley, and his B.S in Civil and Environmental Engineering at the University of California, Davis. After completion of his graduate studies, Professor Nweke was a CA Alliance NSF-AGEP Postdoctoral Research Fellow in the Civil and Environmental Engineering department at the University of California, Los Angeles. Prior to his current position, he was a practicing engineering consultant for ENGEO, a geotechnical and environmental engineering firm.





Douglas Rees

*Roscoe Gilkey Dickinson Professor of Chemistry
Investigator, Howard Hughes Medical Institute
California Institute of Technology*

Douglas Rees, the Caltech AGEP-RUA PI, is the Roscoe Gilkey Dickinson professor of chemistry and an Investigator of the Howard Hughes Medical Institute. He served as a PI of the California Alliance AGEP program, as well as Dean of Graduate Studies at Caltech from 2015-2020. His research interests focus on macromolecular structure and function using x-ray crystallography and electron microscopy.

Thomas F. Rosenbaum

*Professor of Physics
President, Sonja and William Davidow Presidential Chair
California Institute of Technology*

Thomas F. Rosenbaum is the ninth president of the California Institute of Technology and Professor of Physics. He is an expert on the quantum mechanical nature of materials, conducting research at Bell Laboratories, IBM Watson Research Center, and the University of Chicago, where he served as Vice President for Research and for Argonne National Laboratory and then provost, before moving to Caltech in 2014. He received his bachelor's degree in physics with honors from Harvard University and a Ph.D. in physics from Princeton University. He serves on the Board of Governors for Argonne National Laboratory, on the Society for Science & the Public's Board of Trustees, as General Member of the Aspen Center for Physics, and the American Academy of Arts & Sciences Los Angeles Program Committee.



Mark J. T. Smith

*Dean of the Graduate School
Senior Vice Provost for Academic Affairs
The University of Texas at Austin*



Mark J. T. Smith received the B.S. degree from MIT and the M.S. and Ph.D. degrees from the Georgia Institute of Technology, all in electrical engineering. He joined the electrical and computer engineering (ECE) faculty at Georgia Tech in 1985, where he remained for the next 18 years. In January, 2003, he joined the faculty at Purdue University as Head of the School of ECE, and in 2009 became Dean of the Purdue University Graduate School. While at Purdue, he served as PI of the (Purdue, Northwestern, Indiana University) Midwest Crossroads AGEP Alliance, PI of the Big Ten Academic Alliance AGEP "Professorial Advancement Initiative," co-PI on Purdue's American Indian Graduate Program funded by the Sloan Foundation, and served as a member of Purdue's NSF funded ADVANCE program leadership team, as well as overseeing the Purdue LSAMP program.

Currently Smith is Senior Vice Provost of Academic Affairs and Dean of the Graduate School. He serves as the UT Co-PI on the NSF AGEP Research University Alliance and is a member of the Advisory Board for the Texas A&M System Research Model-AGEP Alliance.

Smith served as chair of the ETS GRE Board for the last two years and is now a member of the ETS Graduate Education Advisory Committee. He has also served as an officer and Board Chair of the Council of Graduate Schools (CGS) and president of the Electrical and Computer Engineering Department Heads Association.

Featured Panelists

Zakaria (Zak) Al-Balushi - Alumni Panel

California Alliance Program Alum

Assistant Professor, Material Sciences and Engineering, University of California Berkeley

Nick Geiser - Alumni Panel

RUA Community Engagement Board Member

Postdoc, Department of Physics and Astronomy, University of California Los Angeles

Sara X. Hernández - Faculty Hiring Panel

RUA External Advisory Board Member

Associate Dean for Inclusion and Student & Faculty Engagement, Cornell University

Stephen (Steve) Mayo - Faculty Hiring Panel

Bren Professor of Biology and Chemistry; Merkin Institute Professor,

California Institute of Technology

Rodolpho (Rudy) Mendoza-Denton - Faculty Hiring Panel

RUA co-Principal Investigator

Professor of Psychology, University of California Berkeley

Brian J. Ramirez - Alumni Panel

California Alliance Program Alum

Assistant Professor, Mechanical Engineering, Cal Poly Pomona

Melissa Ramirez - Alumni Panel

RUA Community Engagement Board Member

Postdoc, Division of Chemistry and Chemical Engineering, California Institute of Technology

Pre-Conference Workshop Speaker



Robyn Javier

STEM Communication Specialist & Lecturer

Division of Engineering and Applied Science

California Institute of Technology

Dr. Robyn Javier is a STEM Communication Specialist & Lecturer in the Division of Engineering and Applied Science at Caltech. Her background includes a PhD in Neuroscience, an MS in Biomedical Engineering, and more than 15 years of technical communication experience in both academia and industry.

Graduate student and postdoc conference participants had the opportunity of participating in a pre-conference workshop with Dr. Javier entitled “The Art of Talking Science”.

This workshop guided the participants through the process of creating a successful research talk. Topics included strategies for organizing your ideas, tailoring content for specific audiences, developing effective slides, and speaking in an engaging way.

We thank Dr. Javier for providing this workshop to help prepare the participants. Be sure to check out their hard work at the Research Lightning Talks and Poster sessions.

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Presenting the RUA Postdoc Portal

We are thrilled to announce the launch of the RUA Postdoc Portal. The Portal allows graduate students past candidacy and postdocs to connect with labs and research groups from all 9 RUA institutions. Connections are made based on shared areas of research interest. Reach beyond the usual “friends-of-friends” network to find new scholars and research groups in your area.

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Create a Postdoc Profile to access the Portal. Profiles are automatically matched and users are notified when new postdoc positions and research groups in their areas are added. Use the browse feature to see all research group profiles and available positions.

Faculty and Lab Groups

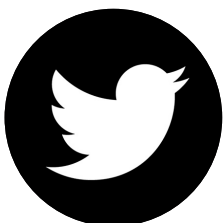
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If you're moving on from your RUA institution, join the alumni network. For information about the network, and to sign up, visit researchuniversityalliance.org/get-involved/rua-alumni-network/

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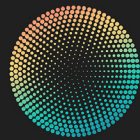
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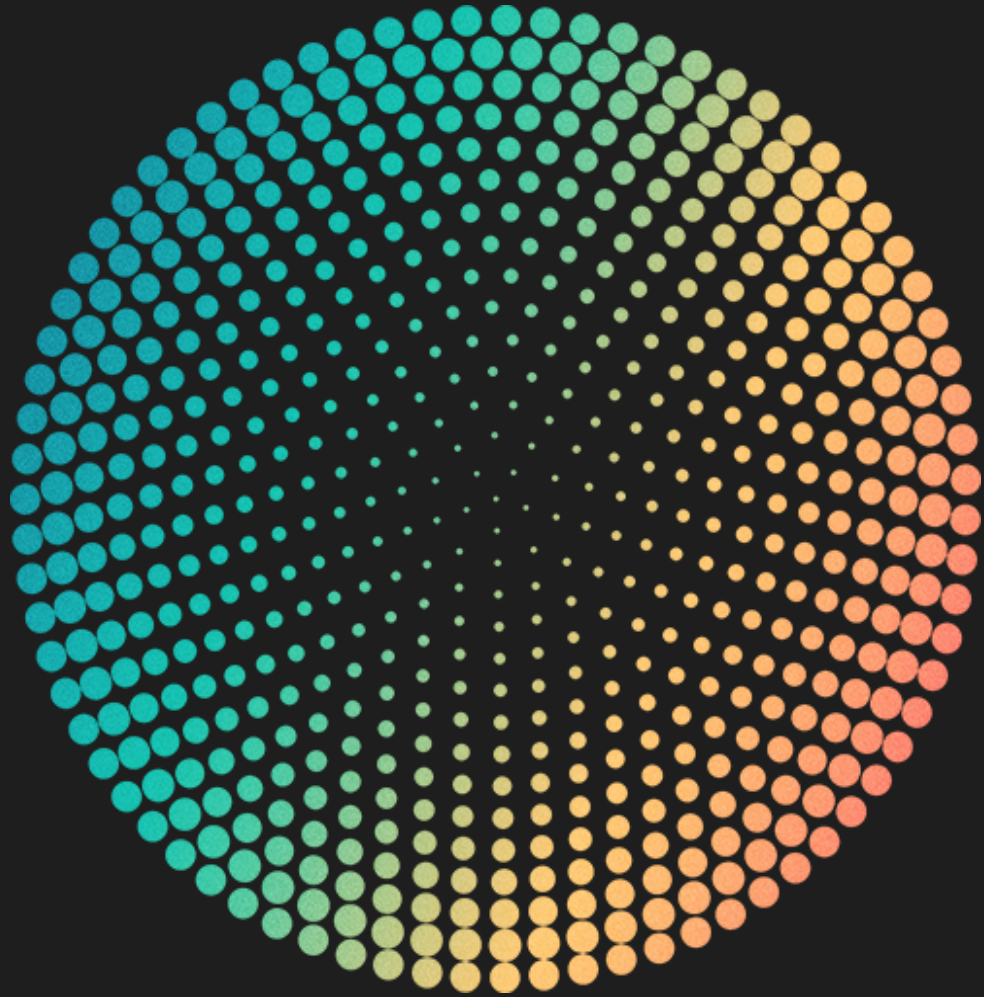
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