



UNDERSTANDING INTERVENTIONS

That Broaden Participation in Science Careers

San Antonio
2017

Advancing Local Interventions
Towards Systemic Change

9th CONFERENCE ON
UNDERSTANDING INTERVENTIONS
That Broaden Participation in Science Careers

Advancing Local Interventions Towards Systemic Change

March 3 - 5, 2017

**The Sheraton Gunter Hotel
San Antonio, Texas**

Anthony L. DePass and Daryl E. Chubin, Co-chairs



www.understanding-interventions.org

FUNDING AND SUPPORT

Understanding Interventions that Broaden Participation in Science Careers has benefited from generous support from the National Institutes of Health, the National Science Foundation, the Alfred P. Sloan Foundation, Howard Hughes Medical Institute, and Educational Testing Service. In addition, UI has had productive collaborations with the National Academies of Sciences, Engineering and Medicine, the American Society for Cell Biology, the American Society of Plant Biologists, American Association for the Advancement of Science, and Long Island University.

In September 2013, a NIGMS T36 MARC grant from the National Institutes of Health (Grant No. 1 T36 GM 102000) was awarded to Long Island University and it currently provides long-term support for the following:

Organization of conferences that will provide: a) venues for dissemination of interventions research and related training; b) opportunities for researchers/practitioners to interact and collaborate; and c) a mechanism for discourse on research-based interventions' implementation across modalities, stages, and venues. A monograph will be published that captures the proceedings of each annual conference.

An enhanced and interactive Understanding Interventions website that will: a) facilitate linkages among members of the Understanding Interventions (UI) community; and b) feature an accessible and searchable internet-based annotated database of Interventions articles and other resources. This will expand the dissemination of broadening participation research.

An online/email-based publication that distills and disseminates research findings, development opportunities, and general announcements to provide an additional platform for growth of the Understanding Interventions community.

Social/behavioral sciences, student affairs, and professional societies and organizations such as American Association of University Professors, American Association of State Colleges and Universities, and Association of American Universities that influence higher education are welcomed to register to the annual list and receive the newsletter.

We would like to extend our sincere appreciation to the National Institutes of Health for considerable investment that has been made in providing a stable base for our operations.

To all our collaborators, and participants, thank you for your generous contributions to this very important work.

Bienvenido a San Antonio

Welcome to UI 2017! This is our 9th conference on Understanding Interventions that Broaden Participation in Science Careers. We have now made our way to the Southwest region of the United States. We are delighted to be in San Antonio and express our gratitude to our colleagues at UT Health San Antonio, especially Dr. Nicquet Blake, for their help in making UI in San Antonio a reality.

For those returning colleagues who have experienced a UI conference, welcome back. For first-timers, prepare to be engaged, make new friends, and learn about broadening participation from every angle, delivered by experts from across the STEM disciplines who value diversity, inclusion, and excellence in research and practice.

The emphasis this year is on expanding the scope of our interventions for impact beyond the traditional limits of discipline and departments to promote transformation at the institutional, regional and national levels. As usual, the community has responded to our call for data and analysis of outcomes. We received over 140 submissions calibrated to population, education stage, and institutional setting.

Consequently, the UI conference has reached a milestone of 'dozens'. The 2.5-day program features more than a dozen hands-on and focused Workshops, two dozen Symposia and Deeper Dives, and more than three dozen Posters. Four plenary sessions will highlight systemic NSF programs, supporting students with disabilities, the power of data to inform practice, and the expanded use of social networks and social media as valuable tools for broadening participation. You will see a giant in the field recognized as an Intervenor, and a team led by another giant as deserving winners of the "Tol" award named for Adolphus Toliver in recognition of his contributions as a scientist, mentor, and visionary in undergraduate training. We'll feed you, too!

Note that sessions have been scheduled, as much as possible, to maximize exposure throughout the conference to themes that the community, via feedback on previous conferences, considers a priority, such as: undergraduate interventions in and out of the classroom, transitions to the professoriate, and NIH approaches to workforce diversity.

The UI Conference may be an annual event. But the UI website, www.understanding-interventions.org, is a portal to a world of resources that we continue to grow and refine. Use it. Share it. We are dedicated to your professional development and success in affording opportunities and broadening participation in science careers.

Thank you for your relentless good works. It's an honor to be with you in San Antonio.

Anthony L. DePass and Daryl E. Chubin, Co-Chairs

ACKNOWLEDGEMENTS

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9th Understanding Interventions that Broaden Participation in Science Careers Conference

March 3-5, 2017

“Advancing Local Interventions Towards Systemic Change ”

Friday, March 3, 2017

8: 00 a m - 7: 00 p m

Registration

CRYSTAL FOYER, SECOND FLOOR

9: 00 am - 4: 30 pm

Concurrent Workshops

9:00 am – 10:30 am

W2: Game-based learning: Using a digital game as an alternative approach to teaching genetics, from middle school to undergraduate courses

Presenter: Frieda Reichsman Institution: The Concord Consortium Co Authors:

Kiley McElroy-Brown

ALAMO, THIRD FLOOR

Active-learning approaches to undergraduate education in the sciences can lessen achievement gaps by boosting performance of underrepresented minorities and women (e.g., 1). Digital games designed to support STEM learning can engage and improve content learning in all students, including underrepresented populations (2). Games are excellent models for teaching and learning due to features that parallel active learning strategies, such as immediate, relevant formative assessment, low stakes challenges, incrementally harder problem solving tasks, and open-ended problems with multiple paths to a solution (3).

This workshop will introduce you to game-based learning using the digital game Geniverse, a genetics learning environment that we previously developed and used successfully to help high school and college students learn genetics and genomics. Geniverse is used in biology classrooms with students ranging from an upper-level Genetics and Molecular Genomics course at the University of Massachusetts, Amherst, to thousands of high school students in introductory through AP bio, to middle school students in life science classes.

9:00 am – 10:30 am

W10: Implementing Interventions: What Are Key Knowledge, Skills, and Abilities

Presenters: Daryl Chubin, 1 Virginia Womack, 2 Jodi Wesemann, 3 Barry Komisaruk, 4

Institutions: 1, Co-Chair, Understanding Interventions, 2, President and Executive Director, National Association of Engineering Program Advocates (NAMEPA), and Director, Minority Engineering Program, Purdue University 3, American Chemical Society, 4, Rutgers University-Newark

BLUEBONNET, SECOND FLOOR

Faculty, directors, and other leaders of programs are expected to implement interventions to broaden participation. What should these “interveners” know and be able to do? Participants are invited from across STEM disciplines.

A multidisciplinary team will lead this 90-minute workshop by facilitating the discussion of roles, responsibilities, and duties involved in interventions work. Participants will identify key knowledge, skills, and abilities needed to transition from understanding to sustaining promising practices.

In small groups, participants will also consider how the descriptions above can be used in identifying and developing leaders for programs in different contexts. How to codify what are the "common denominators" of broadening participation that intervenors should command and take back to their home institutions and disciplines will be a major outcome of the workshop.

9:00 am – 12:00 pm

W8: An Intervention to Improve 3-D Spatial Skills of Students to Improve Outcomes in STEM

Presenter: Sheryl Sorby Institution: The Ohio State University Co Author: Olga Stavridis
MAGNOLIA, SECOND FLOOR

The ability to visualize in three dimensions is a cognitive skill that has been shown to be important for success in engineering and other technological fields. For engineering, the ability to mentally rotate 3-D objects is especially important. Unfortunately, of all the cognitive skills, 3-D rotation abilities exhibit robust gender differences, favoring males. Additionally, studies have shown that the spatial skills of students from low socio-economic groups are also at risk of having underdeveloped spatial skills. The assessment of 3-D spatial skills and associated individual differences has been a topic of educational research for nearly a century; however, a great deal of the previous work has been aimed at merely identifying these differences. For more than two decades, Sheryl Sorby has been conducting research aimed at identifying practical methods for improving 3-D spatial skills, especially for women engineering students and has developed a highly successful intervention course aimed at low visualizers. This presentation details the significant findings obtained over the past several years through this research and identifies strategies that appear to be effective in developing 3-D spatial skills and in contributing to student success. Participants will work through one module from the curriculum developed by Sorby to gain an understanding of its structure and use.

9:00 am – 12:00 pm

W7: Focused Seminar: Cultural Diversity Awareness in Research Mentoring Relationships: New Measures and Practice Implications

Presenter: Angela Byars-Winston; Christine Pfund; Janet Branchaw; Sherilynn Black. Institution: University of Wisconsin - Madison; Duke University Co Authors: Amanda R Butz, Jenna Rogers
MAHNCKE, THIRD FLOOR

Should race/ethnicity matter in a research mentoring relationship? In our work with research mentors and mentees in science, technology, engineering, mathematics, and medicine (STEMM), we have heard a wide range of responses to these questions. Some say it does not matter, others say it is important but are unsure how to manage it, and still others say they only think about cultural diversity if it becomes a problem between the mentor and mentee. To advance our understanding of what matters with regard to race/ethnicity in research mentoring relationships, we developed and tested a multidimensional scale of cultural diversity awareness (CDA). The CDA scales measure: 1. Attitudes about the importance and relevance of diversity in research mentoring relationships; 2. Mentors' behaviors that are indicative of CDA; 3. Mentors' confidence in their capabilities to support diversity in their mentoring relationships through their actions; and 4. Mentors' motivation to support diversity in their mentoring relationships.

In this workshop, the rationale, psychometric properties, and results of pilot testing for the CDA scales will be described. Before the workshop, participants will be invited to complete the CDA scales and read a related paper about the importance of CDA in promoting effective research mentoring relationships. Highlights from several implementations of an intervention to increase research mentors' CDA that produced significant gains on the CDA scales will be demonstrated. Finally, participants will brainstorm uses of the CDA scales and relevant interventions in their practice, including programmatic and research efforts.

11:00 am – 12:30 pm

W1: From research to retention: How to scale-up a high-impact STEM intervention

Presenter: Cheryl Talley Institution: Virginia State University Co-Authors: John Fife and Brian Sayre
ALAMO, THIRD FLOOR

During the first portion of this interactive workshop attendees will be introduced to the Phenomenological Variant of Ecological Systems Theory (PVEST). PVEST is the supporting theory behind Project Knowledge, an academic intervention designed for entering Virginia State University freshmen. According to PVEST, certain social-positioning variables, such as race and class distinctions have the potential to promote maladaptive coping strategies or even disidentification from high academic achievement. Utilizing the theory we focused on enhancing adaptive coping skills and fostering students' resilience. During our workshop we will describe the PVEST model and show how our intervention can be customized for implementation as a stand-alone project; modified for the classroom or promoted at the department level.

In the workshop, we will briefly present the findings from three cohorts of entering students between 2013-2015 and show that participation in the intervention resulted in a decrease of self-handicapping and an increase in self-regulation. Data from the 2013 cohort reveal a higher GPA than their non-participant comparison group for all 3 years following the intervention. These distal outcomes were also associated with increased persistence in the STEM major and retention to the 4th semester.

The goal of this workshop will be for attendees to develop specific assignments that will enhance student resilience according to the PVEST framework. The focus of the assignments will be on student's academic skill building and/or their academic socialization. Discussion will include the context (program implementation vs. departmental application) of the assignments. The context-specific nature of the intervention, along with opportunities to strengthen relationships within the classroom and department have both been shown to be of primary importance during implementation of this intervention.

1:00 pm – 2:30 pm

W15: Focused Seminar: Perspectives on the Future of STEM Graduate Education: A forum hosted on behalf of The National Academies of Sciences, Engineering and Medicine

Presenters: Sherilynn Black and Kenneth Gibbs, Jr. Institutions: Duke University; National Institute of General and Medical Sciences
MAHNCKE, THIRD FLOOR

What works in STEM graduate education? Which areas are largely ignored? Which issues are problematic and require innovation and change to survive? These sorts of

questions can have very different answers for many individuals within our academic community, but each perspective is critical to the success of the overall academic enterprise. Issues related to specific training needs in STEM (e.g., underrepresentation, mentoring, funding) will continue to evolve and will require collective thought and action in the coming years. Many of these issues will be examined in a newly commissioned study by the National Academies of Sciences, Engineering and Medicine (NAS) over the coming year.

An ad hoc committee, under the auspices of BHEW (Board on Higher Education and Workforce) and COSEPUP (Committee on Science, Engineering, and Public Policy), and liaising with GUIRR (Government-University-Industry Research Roundtable) and TAC (Teacher Advisory Council), will lead a study of STEM graduate-level education in the U.S., revisiting and updating a similar COSEPUP study completed 20 years ago. The committee is currently seeking feedback and commentary to inform the direction of the study.

In this workshop, we will discuss the current trends in graduate education and develop a list of topics for submission to the NAS committee on behalf of the Understanding Interventions (UI) community.

1:00 pm – 2:30 pm

W14: Exploring the Intersection of Entrepreneurial and Science Self Efficacy through Best Practices Offered by Tech Entrepreneurs from Underrepresented Populations

Presenter: Chinonye “Chi-Chi” Nnakwe Institution: American Association for the Advancement of Science Co-Author: Luis Martinez, Ph.D
MAGNOLIA, SECOND FLOOR

Previous studies have demonstrated that entrepreneurial self-efficacy is a particularly important antecedent to entrepreneurial action (McGee et al. 2016). Similarly, when considering factors that are important for retention in the scientific workforce, researchers have also demonstrated that self efficacy can predict the performance of grades, persistence, and perceived career options in technical/scientific fields (Lent et al. 1986). To explore these similarities, the goal of this workshop is to examine what characteristics or environmental factors contribute to the development of an entrepreneurial self efficacy and science self efficacy among STEM entrepreneurs. In addition, this workshop will help guide practitioners in understanding the benefits of introducing design thinking into STEM curricula. Design thinking underlies the initial steps into entrepreneurship (Dym et al. 2005). It can provide a fruitful pathway into student success, because what is learned in the classroom or laboratory and is directly applied to the real world challenges. Panelists will describe how academic researchers can become engaged in entrepreneurship and thereby encourage their students to consider a career to create a tech enterprise. Panelists will also provide tools to the audience for recognizing one’s own skill sets for starting a company, valuable tips towards identifying capital and other best practices towards enhancing student participation in entrepreneurship. The audience will leave the session with a better understanding of the process of commercialization, creation of a company and intervention strategies to engage undergraduate and graduate students in tech entrepreneurship.

1:00 pm – 2:30 pm

W9: Introducing the UI Journal

Presenters: Daryl Chubin 1, Anthony DePass 2, Chris Nelson 3, Janet Branchaw 4, and John Matsui 5 Institutions: Co-Chair, Understanding Interventions 1, Long Island University 2, University of Colorado, Colorado Springs 3, University of Wisconsin-Madison 4, and University of California-Berkeley 5
ALAMO, THIRD FLOOR

The UI Journal has been incubating for a year, with a launch scheduled for the first quarter of 2017. This workshop is a 90-minute information session for prospective authors, reviewers, and other interested members of the UI community. It will feature the editor, the publisher, two associate editors, and the designer of the online architecture for submitting, reviewing, and publishing papers three times per year. The presenters will overview the system in live mode, answering questions and inviting feedback.

1:00 pm – 4:00 pm

W3: Do You Play Fair? A Workshop about Bias in Academia

Presenter: Christine Pribbenow Institution: University of Wisconsin-Madison Co-Authors: Molly Carnes, MD, MS and Percy Brown, Jr., MSED
ROBERT JOHNSON, FIRST FLOOR

We invite faculty, staff, postdocs and graduate students to participate in a 3-hour workshop to experience and learn about biases that impede student success in STEM fields. This workshop is centered around Fair Play – a video game designed to raise awareness about microaggressions and other types of racial biases in academia (Gutierrez et al., 2014). In the game, players take on the role of Jamal, an African American graduate student who experiences bias incidents as he navigates through his academic career. Fair Play was developed using scientific literature about bias, as well as the personal experiences of underrepresented minority students in postsecondary education. Research conducted on the game suggests that it does enable perspective-taking by participants, and is a novel way to learn the names and definitions of bias concepts (Kaatz et al., 2017).

The overall workshop is based on a tested model to teach about and address bias in the academy (Carnes et al., 2015). The first module of the workshop provides participants with the scientific literature about implicit bias—where it comes from, how it operates, and how it influences behavior. In this section, we also discuss the efficacy of using video games to teach about serious subjects like bias (Gee, 2007). After playing Fair Play, participants reflect on and react to their experiences as Jamal. Finally, we review literature and identify evidence-based techniques shown to decrease bias behaviors in individuals (Devine et al., 2012).

Evaluations of the Fair Play Workshop have been formally conducted since January 2016 at six separate events. Findings across the workshops show consistency in participants' viewing the workshop as an effective way to teach people about bias, and that it is training they would recommend to their colleagues.

1:00 pm – 4:00 pm

W13: A Collective Impact Approach to Diversifying Participation in Science: Where Does Racial Equity and Community Engagement Fit?

Presenter: Kien Lee Institution: Community Science
BAKER, THIRD FLOOR

A review of the literature on programs to diversify a discipline or field of study revealed that most of the strategies are predominately focused on change at the individual level

(Cantor, Bergeisen, & Baker, 1998; Grumbach et al., 2003). To have a sustainable impact on diversifying participation in a discipline or field of study such as the sciences or engineering, it is imperative for interventions to move beyond the individual and consider the interconnected parts of the ecosystem that supports the discipline or field of study, and examine the elements that made it necessary for the interventions in the first place (e.g., policies, history, institutional racism). In this workshop, the presenter will share the strengths and weaknesses of interventions to diversify different professions (e.g., Collins & Hopson, 2007; Lee & Gilbert, 2014) and use these examples to engage workshop participants in a discussion about the ecosystems relevant to their disciplines or fields of study. The presenter will then proceed to apply the principles of collaboration for equity and justice to interventions designed to impact to the ecosystem, with an emphasis on integrating strategies aimed at addressing racial equity and engaging community (Wolff et al., 2017). The workshop will combine presentations with small and large group exercises (e.g., identification of institutions that constitute an ecosystem and their relationships to each other, identification of who makes up the “community” and ways to engage them) and discussions.

1:00 pm – 4:00 pm

W11: The Being Human in STEM Initiative

Presenter: Megan Lyster Institution: Amherst College Co-Authors: Sheila Jaswal, Emma Ryan, and Ashley Bohan
BLUEBONNET, SECOND FLOOR

In the first iteration of the Being Human in STEM initiative, students collaboratively designed and a course to ground their understanding of the STEM experience at Amherst in national and global contexts, specifically looking at the ways in which gender, class, race, sexuality, and geographic upbringing might shape individual experiences. Students read peer-reviewed articles, surveyed best practices at peer institutions, and interviewed a broad cross-section of over 40 Amherst College STEM students, faculty, staff and alumni. The course’s findings were presented to more than 75 students, staff and faculty in an interactive “Salon” with project presentation discussion tables, an inclusive pedagogy workshop, and a lively Q&A panel. They are publicly accessible through a website and were incorporated into a resource guide distributed at the Dean’s Retreat on Inclusive Pedagogies in May, 2017 attended by 120 faculty and staff members.

In the second semester, Being Human in STEM leveraged the research and analysis of the first semester to develop a framework for students and faculty to understand and navigate diverse identities in the classroom and beyond. The students collected, created, and tested tools and resources for fostering a more inclusive, supportive STEM community and shared them with faculty, staff, and students at Amherst College and at other institutions. The website (www.beinghumaninstem.com) continues to serve as the online “home” of the project.

3:00 pm – 4:30 pm

W6: The Alliance for Diversity in Science and Engineering (ADSE): How to Open a Local Chapter

Presenter: Steven A. Lopez Institution: Harvard University Co-Authors: Ashay Patel, Christina Rotsides, Ashley Comfort, and Christian Gonzalez
MAGNOLIA, SECOND FLOOR

The Alliance for Diversity in Science and Engineering (ADSE) is a graduate student-run, non-profit organization aimed at promoting participation of current STEM graduate students who identify as part of minority groups, as well as potential future STEM

graduate students in outreach, networking, mentorship, and other community-building events. In our experience, lacking a sense of community is a huge factor deterring underrepresented groups from pursuing the sciences. ADSE highlights the issues that graduate students in STEM disciplines face both when trying to apply for graduate schools and being in a graduate program. With many chapters open at universities across the country, ADSE has a history of enhancing the sense of unity that is often lacking in STEM graduate departments. This workshop will discuss (1) how to open an ADSE chapter at your local institution and (2) the events ADSE has organized and discuss their positive outcomes on the local community.

3:00 pm – 4:30 pm

W16: Successes, Challenges, and Opportunities in STEM Undergraduate Research Experiences: A New Report from The National Academies

Presenters: Janet L. Branchaw and Mica Estrada Institutions: University of Wisconsin, Madison and University of California San Francisco
ALAMO

Undergraduate research experiences (UREs) provide students with the opportunity to learn about the work of science, technology, engineering, and mathematics (STEM) researchers. There are different forms of UREs available to students at a wide range of institutions, but there has been little analysis of which types of UREs might best serve students at different academic institutions and with different aspirations.

A new report from the National Academies of Sciences, Engineering, and Medicine looks at designing and evaluating undergraduate research opportunities and examines what additional research is needed. Two report committee members will lead a discussion and answer questions related to the new report.

3:00 pm – 4:30 pm

W17: LEAD Consortium Networking and Discussion

Presenter: Anthony L. DePass Institution: Long Island University-Brooklyn
Mahncke

The LEAD Consortium is comprised of program directors of NIH and NSF-funded student training and professional development programs with common concerns for challenges that plague training programs across the nation, with a goal of coordinating a network to serve student research training. This networking opportunity will facilitate discussions about high impact practices across institutional training levels as well as developmental activities among the program directors and their institutions.

5: 00 pm

Welcome and Opening Plenary
CRYSTAL BALLROOM

Welcome
Anthony L. DePass and Daryl E. Chubin—UI Co-Chairs

Plenary I

Broadening Participation Alliances: Advancing STEM Frontiers
Wenda Bauchspies, Mark H. Leddy and Alan Arnold—National Science Foundation

This interactive session will focus on two of the National Science Foundation's (NSF) current initiatives that are supporting broadening participation: The Alliances for Graduate Education and the Professoriate (AGEP) and NSF INCLUDES (Inclusion across

the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) programs.

The session will include an introduction and overview of current funding opportunities offered by the AGEP and INCLUDES programs through a participatory and collective impact format where plenary attendees will be actively engaged in addressing the challenges faced by the Understanding Interventions Movement. Public data from currently funded awards will be shared with the audience. Contrasts and comparisons between the two programs and different types of Alliances to broaden participation will be topics participant discussion. In addition, the community will be asked to help NSF think through the challenges and benefits of scaling up and broadening alliances and partnerships in our efforts to broaden STEM participation among underrepresented groups, including women, Hispanics, African Americans, Native Americans, Alaskan Natives, Pacific Islanders, persons with disabilities, people from rural areas and people of low socioeconomic status. We will be asking the community for feedback on what are the key components and approaches that lead to sustainable progress at a national scale.

7:00 pm - 9 :00 pm

Networking Reception

BLUEBONNET & MAGNOLIA

Saturday, March 4, 2017

7: 00 a m - 5: 00 p m

Registration

CRYSTAL FOYER, SECOND FLOOR

7:30 am – 8:30 am

Breakfast

CRYSTAL BALLROOM

8:30 am - 9:45 am

Plenary II

CRYSTAL BALLROOM

Including Students with Disabilities in STEM Education: Why and How
Richard Ladner—University of Washington

About 15% of K-12 students, 10% of college students, and 5% of graduate students have a disability in the United States. This amounts to about 10 million students. The vast majority of students with disabilities in K-12 are in mainstream schools, not special schools. Most have individual education programs (IEPs) that may alter their education goals from standard expectations for students. Many are discouraged from taking STEM courses. At the college and graduate level students with disabilities have the same education goals as non-disabled students, but are less likely to specialize in STEM fields. The graduation rate for students with disabilities is much lower than the rate for students at large. This is a problem because STEM fields need more people with disabilities because their perspectives and expertise spark innovation. Examples will be given demonstrating the contributions by people with disabilities to STEM fields. There are two main factors that help determine whether a student with a disability can be successful in a STEM field: attitudes and accommodations, in particular, technology related accommodations. Attitudes include those of people who interact with the student and the student's self-image. Several interventions that I

have been involved in will be highlighted. Challenges in evaluating interventions for students with disabilities will be discussed. Potential new interventions to create an environment for students with disabilities to be successful in STEM fields will be discussed.

10:00 am - 11:30 am

Concurrent Symposia and Deeper Dives

Institutional Settings, Undergraduate Outcomes

BAKER

S2: A Moral Imperative: Sustaining and Scaling What We Learn from Grant-funded Projects

Presenter: Jeffrey M. Osborn Institution: The College of New Jersey

Co-Authors: Janet A. Morrison, Benny Chan, Laurel Leonard and Lynn Gazely

S6: Communities for Undergraduate Success: An evaluation of retention and graduation in a highly diverse public university

Presenter: Catherine Sanders Institution: SmartStart Evaluation and Research, in collaboration with researchers from the University of California, Riverside

Co-Authors: Dr. Michael A. McKibben, Jennifer K. Hernandez, Dr. Linda Lee

S46: Operation STEM: Increasing STEM Success in Under-Resourced Populations

Presenter: Susan Carver Institution: Cleveland State University

Co-Authors: Jenna Van Sickle and Candice Quinn

The Nuts and Bolts of Mentoring: How it Works

BLUEBONNET

S8: The nuts and bolts of mentoring: how it works

Presenter: Shine Chang, PhD. Institution: The University of Texas MD Anderson Cancer Center, Houston TX Co-Authors: Hwa Young Lee, PhD., Cheryl B. Anderson, PhD., and Carrie Cameron, PhD.

S9: Mentoring Satisfaction: an Adapted Social Cognitive Career Model

Presenter: Cheryl B. Anderson, PhD. Institution: The University of Texas MD Anderson Cancer Center, Houston TX, Co-Authors: Cheryl B. Anderson, PhD., Hwa Young Lee, PhD., and Shine Chang, PhD

S11: Influencing research career intention: the role of mentoring styles

Presenter: Hwa Young Lee, PhD. Institution: The University of Texas MD Anderson Cancer Center, Houston TX Co-Authors: Cheryl B. Anderson, PhD, Carrie Cameron, PhD., and Shine Chang, PhD

S7: A potent effect of mentorship satisfaction on trainee career persistence in research

Presenter: Shine Chang Institution: University of Texas MD Anderson Cancer Center Co-Authors: Hwa Young Lee, Cheryl B. Anderson, and Carrie Cameron

BUILD Sites: One Goal with Multiple Approaches to Diversify the NIH Workforce—Part I

ALAMO

S25: BUILD Sites and NRMN: One Goal with Multiple Approaches to Diversify the NIH Workforce

Presenter: Karsten Hueffer Institution: University of Alaska, Fairbanks

S26: The BUILD Initiative at Xavier University of Louisiana, Project Pathways
Institution: Xavier University

S27: The BUILD Initiative at University of Alaska Fairbanks
Presenters: Karsten Hueffer Institution: University of Alaska, Fairbanks

S28: Enabling Full Representation in Science: The San Francisco BUILD Program Signaling
Affirmation for Equity
Presenter: Mica Estrada Institution: University of California, San Francisco and San
Francisco State University

Coping and Excelling as Graduate Students and Postdocs
(Deeper Dive)
ROBERT JOHNSON

D3: Diversifying faculty-structured postdoc for faculty success
Presenter: Noelle-Erin Romero Institution: University of North Carolina at
Chapel Hill Co-Authors: Leslie Kennedy and Sibby Anderson-Thompkins

D6: Do You Speak Science?: Dialect and Its Role in Research Training
Presenter: Carrie Cameron Institution: University of Texas M D Anderson
Cancer Center Co-Authors: Hwa Young Lee, Cheryl B Anderson, and Shine
Chang

D11: Being The Only: Race-influenced Experiences and Coping Strategies of
Black Women Biomedical Graduate Students
Presenter: Letitia Onyango Institution: Northwestern University Feinberg
School of Medicine Co-Authors: Veronica Womack, Patricia B. Campbell, and
Rick McGee

Intersectionality & the Future STEM Workforce (Deeper Dive)
MAGNOLIA



D7: Empirical Intersectionality: Providing Substantiality and Support for the
Future STEM Workforce
Presenter: Frances Carter-Johnson Institution: National Science Foundation
Co-Author: Chantel Fuqua

D20: The Value of Applying an Intersectional Lens to Research on the Inclusion
of Women of Color in Computing
Presenter: Stephanie Rodriguez Institution: American Association for the
Advancement of Science at the National Science Foundation Co-Author: Kamau
Bobb

D21: Resizing the frame in Broadening Participation: Examining the language and
terminology used in NSF programs for a more inclusive approach in broadening
participation in STEM
Presenter: Shermaine Mitchell-Ryan Institution: The National Science
Foundation

11:45 am - 2:00 pm

Luncheon and Plenary III

CRYSTAL BALLROOM

Predicting PhD Attainment: The Efficacy of the GRE

Patricia B. Campbell—Campbell-Kibler Associates, Inc.; Sandra Petersen—University
of Massachusetts-Amherst

The Graduate Record Examinations (GRE) are heavily weighted sources of information in admissions decisions for many departments (Kuncel, Hezlett & Ones, 2001) with more than 570,000 potential graduate students taking the GRE in the 2013-14 academic year (ETS, 2014). Much of the GRE validity research has focused on first year or overall graduate grade point average (i.e., Bridgemen, Burton & Cline, 2008; Kuncel et al, 2001). However, in a small study, Burton & Wang (2005) found the GRE scores of those receiving PhDs to be lower than those who left their programs.

This study explored the relationship between GRE scores and PhD completion for 1,996 STEM graduate students from four flagship state universities in the Northeast Alliance for Graduate Education and the Professoriate. The students were predominately White (73%) and male (55%) with an overall completion rate of 63%. There were not significant differences in completion rates by gender or race/ethnicity.

Contrasting Outcomes for Length of NIH PREP Training

Michael L. Garcia, John David—University of Missouri, Anthony L. DePass—Long Island University

In recent years, participation in post-baccalaureate training programs have been seen as an effective mechanism for transition for students looking to gain entrance into graduate programs or augment their chances for admission to the most competitive doctoral institutions. The NIH Post Baccalaureate Research Education Program (PREP), with its 32 site institutions, is the largest and most geographically expansive among post baccalaureate programs. Institutional variants fit within a model of a one-year program where trainees gain significant research experience in a research-intensive environment while participating in activities tailored to the program, as well as auditing or full participation in graduate level coursework. For many programs, a second year of training might be allowed based on a process of application and consideration unique to the training institution.

The PREP program at the University of Missouri (MU PREP) throughout its 16-year history has trained over 150 scholars. MU PREP scholars are students who were not accepted into a graduate program, or students that did not apply, as their undergraduate metrics made them non-competitive for direct matriculation. Of those trained in the program 60% were in the program for two years compared to a NIH supported PREP program average of 20%. We report, based on evaluation of the MU PREP program, significant outcome differences based on rates of matriculation; completion; satisfactory progress towards the PhD; ranking of the Ph.D. institutions where MU PREP trainees pursue doctoral study; publication rates while pursuing the PhD; and time to the PhD once they enter a doctoral program.

2:15 pm - 3: 45 pm

Concurrent Symposia and Deeper Dives

Learning from Studies of STEM Undergraduates
BAKER

S47: Improving student outcomes in STEM through adoption of authentic (client based) project-based learning courses

Presenter: Sandra W. Bishnoi Institution: Rice University

Co-Authors: Rebecca Richards-Kortum, Margaret Beier, Elizabeth Eich, and Ann Saterbak

S48: Self-Regulation Skills as Predictors of URM Student Success Biomedical Research

Presenter: Michelle Williams Institution: University of Connecticut

Co-Authors: V. Bede Agocha, Paul R. Hernandez, Login George, and Crystal Park

S65: SSU NIBIB Program: A Model for Success at an HBCU in STEM Retention and Transition to Graduate and Professional Schools

Presenter: Anthony DePass Institution: Long Island University-Brooklyn

Co-Authors: Linda Hansen, Hua Zhao, and Chellu S. Chetty—Savannah State University

Promoting Graduate Student & Postdoc Success: Studies of NSF-AGEP & NIH-NRMN
ALAMO

S12: The Michigan AGEP Alliance: A qualitative analysis of URM doctoral students' experiences and the relationship to their AGEP participation

Presenter: Gloryvee Fonseca-Bolorin Institution: University of Michigan

Co-Authors: Felecia Webb, Merle Feldbaum, Tabbye Chives

S17: Developing Underrepresented Postdocs for Academia

Presenter: Christopher Seals Institution: Michigan State University Co-Authors:

Aman Yadav, Nancy Schwartz, Laurie Risner

S19: The Michigan AGEP Alliance: An examination of mentoring and community building among URM doctoral students

Presenter: Felecia Webb Institution: University of Michigan Co-Authors:

Gloryvee Fonseca-Bolorin, Merle Feldbaum, and Tabbye Chavous

S23: Promoting the Success of Graduate Students and Postdoctoral Fellows

Presenter: Angela Ebreo Institution: University of Michigan Co-Authors:

Felecia Webb, Gloryvee Fonseca-Bolorin, and Christopher Seals

What We Think, Write, & Say about Science May Influence Scientific Workforce Diversity

BLUEBONNET

S14: Linking Value and Learning: Using Text Analysis to Understand How Utility-Value Writing Interventions Promote Underrepresented Minorities' and First Generation Students' Science Course Performance

Presenter: Stacy J. Priniski Institution: University of Wisconsin-Madison

Co-Authors: Judith M. Harackiewicz, Beata Biegman Klebanov, Anupama Bhattacharya, and Anna Kaatz

S38: Collaborative Discussion during NIH Grant Peer Review Improves Internal Agreement Among Reviewers, but Exacerbates Disagreement Between Different Panels

Presenter: Elizabeth L. Pier Institution: University of Wisconsin-Madison

Co-Authors: Joshua Raclaw, Cecilia E. Ford, Anna Kaatz, Molly Carnes

S43: Can Novel Algorithms Detect Research Field-Specific Gender and Racial Bias in NIH Peer Reviewers' Critiques and Scores of R01 Applications?

Presenter: Anna Kaatz Institution: University of Wisconsin-Madison

Co-Authors: Molly Carnes, Madeline Jens, Andrei Cimpian, Amarette Filut

S44: What we Think, Write, and Say about Science May Influence Scientific Workforce Diversity.

Presenter: Anna Kaatz Institution: University of Wisconsin-Madison

S45: Beliefs about Brilliance Undermine Women's Careers

Presenter: Andrei Cimpian Institution: New York University

Facilitating Faculty Transitions

MAHNCKE

S1: Strengthening Access to Community Cultural Wealth through a Professional Development Program Counterspace

Presenter: Cara Margherio Institution: University of Washington

Co-Authors: M. Claire Horner-Devine, Sheri J.Y. Mizumori, Joyce W. Yen

S16: Perceptions on recruitment and retention of faculty in a rural institution:

Initial findings from an NSF ADVANCE project on STEM women

Presenter: Echo Wu Institution: Murray State University

Co-Authors: Paula Waddill, Maeve McCarthy, Robin Zhang, Steve Cobb

S49: Effects of a quasi-experimental "Women in Science" mentoring program on science interest and career intentions

Presenter: Paul R. Hernandez Institution: West Virginia University

Co-Authors: Brittany Bloodhart, Emily V. Fischer, Heather Henderson, and Jennifer Sayers

Contextual Factors & Hispanic STEM Students (Deeper Dive)

ROBERT JOHNSON

D12: Using contextual mitigating factors (CMFs) to understand contextual complexities in STEM career pathways -- Insights from successful Latinas

Presenter: Alejandro J. Gallard Institution: Georgia Southern University Co-Authors: Wesley

Pitts, PhD, Sylvia Lizette Ramos de Robles, PhD, Katie Brkich, PhD, Belinda Flores Bustos, PhD and Lorena Claeys, PhD

D14. Gender Differences: An Investigation of Hispanic Students Learning in a STEM Summer Camp

Presenter: Felicia Rodriguez Institution: University of Texas Rio Grande Valley Co-Authors:

Valeria del Bosque, Erica Hinojosa, Lizbeth Morales, Yakeline Tijerina, Angela Chapman

D15, Attitudes Towards STEM: Factors that May Influence Pre-College Hispanic Female Students Performance in a STEM Summer Camp

Presenter: Leslie de la Pena Institution: University of Texas Rio Grande Valley

Co-Authors: Elizabeth Lozano, Nina E. Olvera, Angela Chapman

Preparing for & Negotiating STEM Careers

MAGNOLIA

D19: Quantifying the impacts of K-12 STEM outreach programs on STEM career outcomes

Presenter: Sherri Morris Institution: Bradley University Co-Authors: Kelly McConnaughay,

Michelle Edgcomb Friday, and Kathryn Eckhoff

S36: New Recommendations for Broadening Participation of and Increasing Persistence of Underrepresented Minority (URM) Students in Undergraduate STEM

Presenter: Mica Estrada Institution: University of California San Francisco

S31: A New Approach to Mentoring for Research Careers: Training in the National Research Mentoring Network (NRMN)

Presenter: Dr. Christine Pfund Institution: University of Wisconsin-Madison

3:45 pm - 5:15 pm

Concurrent Symposia and Deeper Dives

Longitudinal Outcomes for STEM Undergraduates

MAHNCKE

S22: Trends and Pathways for STEM Major Aspirants: A Look at National Data

Presenter: Tanya Figueroa Institution: University of California, Los Angeles

Co-Authors: Sylvia Hurtado, M Kevin Eagan, and Krystle Cobian

S24: A High School Research and College Preparatory Program for Underrepresented Minorities (URM's): Structure and Outcome

Presenter: Emil Bogenmann, PhD, EdD Institution: The Saban Research Institute at Childrens Hospital Los Angeles

S42: Broadening the scientific workforce through long-term high intensity undergraduate research experiences

Presenter: Anna Woodcock Institution: West Virginia University

Co-Authors: Paul R. Hernandez, Mica Estrada, and P. Wesley Schultz

Precollege Innovations

MAGNOLIA

S64: Examining Outcomes of the Voelcker Biomedical Research Academy (VBRA) for High School Students

Presenters: Irene Chapa 1, Julie Hensler 1, Francis Lam1, Linda McManus1, Andrea Giuffrida1, Elisabeth Russell-McKenzie 2, Anthony L. DePass 3

Institutions: University of Texas Health San Antonio1, Temple University2, Long Island University Brooklyn3

P34: Middle School Students' Understanding of Variability

Presenter: Felicia Alexandra Wider Lewis Institution: University of Florida

Co-Author: Darrell Lewis

P42: The Marburger STEM Center: Redefining STEM as Systems, Technology, and Educational Mentoring

Presenter: Dr. Sibrina Collins Institution: Lawrence Technological

University, The Marburger STEM Center Co-Authors: Dr. Hsiao-Ping Moore, Dr. Nabil Grace, Dr. Bahman Mirshab, and Karl Daubmann

BUILD Sites: One Goal with Multiple Approaches to Diversify the NIH Workforce—Part II

ALAMO

S25: BUILD Sites and NRMN: One Goal with Multiple Approaches to Diversify the NIH Workforce

Presenter: Karsten Hueffer Institution: University of Alaska, Fairbanks

S29: A Student Centered Entrepreneurship Development (ASCEND) Research Training Program: Update on Student Training and Innovation

Presenter: Avis D. Jackson, Institution: Morgan State University Co-Authors: Sherita Henry, Shamara Murphy, Payam Sheikhattari, Farin Karmangar, Christine F. Hohmann, and Jocelyn Turner-Mus

S30: BUILDing SCHOLARS at the University of Texas at El Paso: An Asset Bundles Approach

Presenters: Lourdes E. Echegoyen Institution: University of Texas at El Paso Co-Authors: Stephen B. Aley, Thomas Boland, Timothy W. Collins, Guadalupe Corral, Marc B. Cox, Sara E. Grineski, Osvaldo Morera, Homer Nazeran

S59: 500 not 50. STEM BUILD at UMBC: A Study of a Multifaceted Support Theory of Student Success

Presenter: Philip J. Rous Institution: University of Maryland Baltimore County

Large Scale Analyses of Careers and Faculty Diversity

BAKER

S39: A Systemic View of Biomedical Research Workforce Diversity: Using Modeling to Understand Points of Intervention

Presenter: Kenneth D. Gibbs, Jr. Institution: National Institute of General Medical Sciences

Co-Authors: Jacob Basson, Imam M. Xierali, and David A. Broniatowski

S54: Mediators of the racial/ethnic disparity in mentored career development (mentored-K) award receipt

Presenter: Dorothy A. Andriole Institution: Washington University, St Louis Missouri

Co-Authors: Yan Yan and Donna B. Jeffe

S56: Long-term Impact of Research Experiences along the Education Continuum: A National Cohort Study of Predictors of Federal Research Funding

Presenter: Donna B. Jeffe Institution: Washington University in St. Louis, School of Medicine

Co-Author: Dorothy A. Andriole

Classroom Approaches to Undergraduate Learning (Deeper Dive)

ROBERT JOHNSON

D8: Helping Teachers to Adopt & Adapt Process Oriented Guided Inquiry Learning in Computer Science - the CS-POGIL and IntroCS-POGIL Projects

Presenter: Clif Kussmaul Institution: Muhlenberg College Co-Authors: Helen Hu, Chris Mayfield, and Aman Yadav

D13: Impact of authentic research based introductory lab courses on students at a research university and a community college

Presenter: Jane L. Indorf Institution: University of Miami Co-Author: Joanna Weremijewicz and Michael S. Gaines

D16: The Use of Guaranteed 4.0 in Introductory Engineering Courses

Presenters: Darron Lamkin and Dr. Whitney Gaskins Institutions: Oklahoma State University and University of Cincinnati

Mentoring at the Graduate Level

BLUEBONNET

D2: The Tour for Diversity in Medicine: Mentoring Diverse Students in their Backyard and Discussing Their Opinions on the Path to Health Professions

Presenter: Robert Trevino, PhD Institution: Rush University Medical Center

Co-Authors: Brandi K. Freeman, MD, MS, Kameron Matthews, MD, JD, Alden Landry, MD, MPH

D4: A Study of How the AISES Online STEM Mentorship Program is Lighting the Pathway

Presenter: Mica Estrada Institution: UC San Francisco Co-Authors: Kathy Deerinwater, Lilibeth Azucena Flores

D18: Promoting Success Through Diverse Career Coaching Groups: The ASPET Mentoring Network

Presenter: Veronica Womack Institution: Northwestern University Feinberg

School of Medicine Co-Authors: Bhoomi Thakore, Simon N. Williams, Letitia Onyango, Christine Wood, Susan Ingram, Catherine Fry, Lynn Wecker, Rick McGee

5: 45 pm - 8:00 pm

Poster Reception

GUNTER TERRACE/YELLOW ROSE/BLUEBONNET

6:00 pm – 6:45 pm

Poster Session A

- 1: The RADSS Program (Rural and Diverse Student Scholars)
J. Reid Schwebach—George Mason University Co-Authors: Rebecca Jones, Rachel Cleaver, Mariam Talib, and Mary Nelson
- 3: Identifying Interventions that Work: 2016 Report of the AccessSTEM/AccessComputing/DO-IT Longitudinal Transition Study (ALTS)
Lyla Crawford—DO-IT, University of Washington
- 5: Leveraging multiple mechanisms to create an upper-level, writing intensive online Applied Stem Cell Biology course
Harris E. McFerrin, Jr.—Xavier University of Louisiana Co-Authors: Tiera S. Coston and Maryam Foroozesh
7. Using Descriptive Norms to Create Inclusive Climates
Sohad Murrar—University of Wisconsin-Madison Co-Author: Markus Brauer
9. Career Exploration in the Life Sciences: An Innovative Course to Increase Retention of Undergraduate Life Sciences Majors and Persistence in Science, Technology, Engineering and Mathematics Careers at University of California, Los Angeles
Sheila Benko, MS, MFT, LPCC—University of California, Los Angeles (UCLA) Co-Authors: Rachel Kennison, PhD, Erin Sanders, PhD, Katrina (Davy) Ward, M.A., Ed.M.
- 11: Supporting first generation minority students in STEM through a living-learning community
Mary A. Farwell—East Carolina University Co-Authors: Enrique Reyes and Margot Neverett
- 13: GeniConnect: Game-based learning, connections with scientists, and laboratory experiences—a model for industry/after school partnerships
Frieda Reichsman—The Concord Consortium Co-Authors: Aaron Rogat and Kiley McElroy-Brown
- 15: TEACH Spreading Teen-Research Inspired Videos to Engage Schoolmates (STRIVES)
Samantha Ngooi MPP—University of Chicago Co-Authors: Audrey Tanksley MD, Jeanne Farnan MD, MPHE, David Meltzer MD, PhD and Vineet Arora MD, MAPP
- 17: Boosting STEM Persistence and Self-Efficacy Through Early Exposure To Scientific Culture and Community: A Novel Undergraduate Course Intervention
Devyn D. Gillette—Duke University Co-Authors: Julie A. Reynolds, Kenneth Kreuzer, and Sherilynn J. Black
- 19: Alternatives to Math Placement, an Unprecedented Program
Kessler McCoy-Simandle—Union County College Co-Authors: Liesl Jones
- 21: Biomedical Sciences Freshman Research Initiative (BFRI) at The University of Texas Rio Grande Valley – An Opportunity to Expose A Larger Number of Underrepresented Students to Research
Natasha Vora—University of Texas Rio Grande Valley Co-Authors: Manuel Saldivar and Sue Anne Chew
- 23: Filling a NIED: A Two-Day Campus Visit Advocating Inclusion and Opportunity in the Neuroscience Graduate Program at UC Davis
Milagros Copara—University of California, Davis Co-Authors: Steve Lee

- 25: Recruiting Underrepresented Investigators to a National Research Mentoring Network (NRMN) Sponsored Training
Meldra Hall, MPH—Morehouse School of Medicine Co-Authors: Japera Johnson, PhD, Ann Smith, MPH, Richard McGee, PhD, and Elizabeth Ofili, MD
- 27: Sustaining Excellence in Research: Improving STEM retention through curriculum changes and engagement with 'at-risk' students
Sandra W Bishnoi—Rice University Co-Authors: Rebecca Richards-Kortum, Veronica Leautaud, Margaret Beier, and Jackie Gilberto
- 29: Impact of BIOL130 Professional Practices in Biology at Virginia State University
Leslie Y. Whiteman, Ph.D.—Virginia State University Co-Author: Brian L. Sayre
- 31: P-MAX: A Project Pathways Initiative
Tiera S. Coston—Xavier University of Louisiana Co-Authors: Maryam Foroozesh and Elizabeth Yost Hammer
- 33: Post-Baccalaureate Technician Program (PTP) at Xavier University of Louisiana
Maryam Foroozesh—Xavier University of Louisiana Co-Authors: Maryam Foroozesh, Marguerite Giguette, Kathleen Morgan, and Kelly Johanson
- 35: Targeted career exploration assignments increased confidence level in next-steps in career path for upper-level Biology majors
Latanya Hammonds-Odie—Georgia Gwinnett College, School of Science and Technology
- 37: Increasing interest in STEM careers and education by a course-based mini-research experience for undergraduates
Tina L. Tootle—University of Iowa Carver College of Medicine Co-Authors: Darren S. Hoffmann and Anna Allen
- 39: Improving the performance in organic chemistry and biochemistry courses of students enrolled in the Food and agricultural sciences by establishing a research mentorship program.
Salam A. Ibrahim—North Carolina A & T State University Co-Authors: Tahl Zimmerman, Valerie L. Giddings, Jane T. Walker, and Meeshay Wheeler
- 41: Alabama Alliance for Students with Disabilities in STEM (AASD-STEM): An Evidence-Based Bridge Model
Brittany McCullough—Auburn University Co-Author: Overtoun Jenda
- 43: The Value of Actionable Strategic Planning and Grant Mentoring in the success of a MD PhD Program.
Jose E. Cavazos—University of Texas Health San Antonio
- 45: NEAGEP Minority Faculty Mutual Mentoring Project: Amplifying Voices
Sandra L Petersen—University of Massachusetts Amherst Co-Authors: Mary Moriarty and Barbara Pearson
- 47: Quantifying the impacts of K-12 STEM outreach programs on STEM career outcomes
Sherri Morris—Bradley University Co-Authors: Kelly McConnaughay, Michelle Edgcomb Friday, Kathryn Eckhoff

6:45 pm – 8:00 pm

Poster Session B

- 2: Team Teaching: Can Undergraduate Student Pairs Sustain Supplemental Instruction?
Alegra Eroy-Reveles—San Francisco State University Co-Authors: Tatiane Russo-Tait, Eric Hsu, and Darryl Dieter

- 4: Evaluating 5 Years of a Summer Research Program: Increased Skills and Interest Among a Diverse Student Population
Amalia Krystal Lira—California State University Long Beach Co-Authors: Wen-Li Liew, Matthew C. Jackson, Ph.D., and Gino Galvez, Ph.D.
- 6: BUILDing SCHOLARS: Undergraduate Student Interventions to Prepare the Next Generation of Biomedical Researchers
Lourdes E. Echegoyen—The University of Texas at El Paso Co-Authors: Guadalupe Corral, Stephen B. Aley, Timothy W. Collins, and Sara E. Grineski
- 8: A Resource Model of Causal Factors Influencing Mentor Self-Efficacy and Burnout
Cheryl B. Anderson, PhD.—The University of Texas MD Anderson Cancer Center, Houston TX
Co-Authors: Hwa Young Lee, PhD., Carrie Cameron, PhD., and Shine Chang, PhD.
- 10: The Development of an Effective Mentoring Program through the Project Knowledge Intervention
Christen Priddie, M.S.—Virginia State University Co-Author: Sophia Howard, B.A., Stephen Scherer, Ph.D., John Fife, Ph.D.
- 12: Developing a Model of Retention in the Biological Sciences: A Precursor to Creating Effective Interventions
Daniel Baltz—University of Minnesota - Twin Cities Co-Authors: Meaghan Stein, Anita Schuchardt, Ph.D., Robin Wright, Ph.D.
- 14: Capstone Learning Design: Process and Implementation at Hostos Community College
Silvia Reyes and Sarah Brennan—Hostos Community College
- 16: Increasing Access to Early Undergraduate Research
Suzanne Rocheleau—Drexel University Co-Authors: Jaya Mohan
- 18: Equipping biomedical graduate students for success in academic milestones
Raquel Salinas—Duke University Co-Author: Sherilynn Black
- 20: A Course-Embedded Model to Integrate Research-Based Projects into the Science Laboratory Curriculum
Louise Wrensford—Albany State University Co-Authors: Byung-hoon Kim, Amir Saheb, Arun Saha, and Xiaomei Zheng
- 22: Breaking the Bias-Habit: A Workshop to Help Internal Medicine Residents Reduce Implicit Bias
Tyson Pankey, MPH—University of Wisconsin-Madison Co-Authors: Anne Stahr, MS, Anna Kaatz, PhD, MPH, Molly Carnes, MD, MS, and Christine Kolehmainen, MD, MS
- 24: Career Development and Retention in the Field of HIV-Related Brain Sciences
Amanda M. Brown—Johns Hopkins University School of Medicine Co-Authors: Avindra Nath, Valerie Wojna, Bruce Shiramizu, and Justin C. McArthur
- 26: Training Non-Traditional Students in Computational Math for Biomedical Research
Jarod Hart—University of Kansas Co-Author: Estela A. Gavosto
- 28: Biomedical Internships: Exploring the Impact on Graduate and Postdoc Careers
Deepshikha (Dia) Chatterjee—Michigan State University Co-Authors Dr. J. Kevin Ford and Dr. Stephanie Watts
- 30: Gender Differences and Similarities in Path-Goal Expectancies, Self-Efficacy, and Biomedical Behavioral Science Career Plans: A Social Cognitive Approach
Sarah E. Harris—University of Michigan Co-Author: Angela Ebreo, Ph. D.

- 32: Curriculum + Community Enterprise for Restoration Science (CCERS): Using oyster restoration in New York Harbor to enhance STEM-C education
Erica Watson-Currie, PhD—SmartStart Evaluation & Research Co-Authors: Lauren B. Birney, EdD - Pace University, Joshua Penman, MA, and Gaylen Moore
- 36: A View from the Shadows: The NIH IRACDA BETTR Program as a Framework to Develop a Post Doc Teaching Identity
Eric Chang—Albert Einstein College of Medicine, Hostos Community College of CUNY, Lehman College of CUNY Co-Authors: Sara Donnelly, Tadakami Tomita, Nelson Nunez Rodriguez, and Stephen Redenti
- 38: Incorporating STEM in a Natuculture Laboratory for Teaching Agriculture and Non-Agriculture Students
Paula E. Faulkner, PhD—North Carolina Agricultural and Technical State University Co-Author: Manuel Reyes, Phd, Alexander Joyce, Masters Student, and Michelle Nelson, M.S.
- 40: The Impacts of Attending the Florida Alliance for Health Professions Diversity (FAHPD)-Health Equity Research Institute (HERI) Culminating Event
Anita Mandal—Edward Waters College Co-Authors: Noor Kamrul Islam and Prabir Kumar Mandal
- 44a: Recent Trends in Applicant and first-year Matriculant data for MD and MD/PhD programs - An Analysis of 2009-2013 AAMC FACTS tables by State of Legal Residency and Race/Ethnicity. J.E. Cavazos—University of Texas HSC San Antonio
- 44b: Exploring Best Practices in Teaching Science Today: Flipping a Chemistry Classroom in a Four Year and a Two Year College
Francine Morris—Albert Einstein College of Medicine Co-Authors: Pamela Mills and Nelson Nunez-Rodriguez
- 46: Early College Prepares Underrepresented Students for Mathematics
Dr. Latitia McCane—Bishop State Community College
- 48: A Real-Time and Hands-on Distance Training Project for Better Teaching and Learning in Microcontroller Technologies
Steve Hsiung—Old Dominion University