

An Introduction to the NSF IUSE HSI Hub

Dr. Juanita K. Hinojosa, University of Nevada - Las Vegas

Juanita K. Hinojosa is a Research Associate in the Department of Educational Psychology, Leadership, and Higher Education at the University of Nevada, Las Vegas. Dr. Hinojosa received her Ph.D. in higher education from the University of Nevada, Las Vegas, and proudly identifies as a first-generation college graduate and immigrant scholar. Hinojosa's lived experiences inform her work and research, and she is passionate about researching and developing inclusive practices and policies that advocate for and support students pursuing a postsecondary degree.

Vanessa Vongkulluksn, University of Nevada - Las Vegas

Dr. Vanessa W. Vongkulluksn is an Associate Professor in the College of Education at the University of Nevada, Las Vegas. She earned her Ph.D. in Education from the University of Southern California. As a first-generation immigrant, she understands how the intentional facilitation of motivationally supportive learning spaces is crucial for student success – especially those whose cultural assets may not be recognized by our educational system. Her research centers on contextually-specific motivation and engagement in technology-integrated STEM learning contexts. A central focus of this work is to design innovative learning environments and teacher resources for supporting equitable motivation and engagement, particularly for historically underserved students.

Dr. Blanca Rincon, University of California Riverside

Blanca E. Rincón is an associate professor of STEM Equity and Education at the University of California Riverside. She received her Ph.D. in education policy studies from the University of Illinois at Urbana-Champaign. She identifies as a proud Mexicana/Latina, a daughter of immigrants, and is the first in her family to attend college. Her research agenda aims to advance educational equity for historically underserved and marginalized college students in STEM, and specifically Latina/o/x college students. With support from the National Science Foundation, her research investigates three interrelated lines of inquiry: 1) The origins, sustainability, and impact of STEM enrichment programs, 2) The institutional environments that shape college student experiences and outcomes, and 3) The culturally derived assets that college Students of Color mobilize to navigate and persist in STEM

Dr. Melissa Lynn Morris, University of Nevada - Las Vegas

Melissa Morris is currently a Professor in Residence and the Undergraduate Coordinator in the Mechanical Engineering Department at the University of Nevada, Las Vegas. She also serves as the Faculty Director of the Teaching and Learning Commons at UNLV. She previously served as a Teaching Associate Professor for the Fundamentals of Engineering Program, at WVU

Dr. Iesha Jackson, University of Nevada - Las Vegas

Dr. Iesha Jackson is the Associate Dean for Faculty and Inclusive Excellence and an Associate Professor of Teacher Education in the College of Education at the University of Nevada Las Vegas (UNLV). Her work with faculty and pre-service teachers calls attention to the need for healing-centered, equity-based reforms in educational spaces. She brings this work to the NSF IUSE HSI Hub to focus on creating inclusive, asset-based learning environments in STEM.

Prof. Eduardo A Robleto, University of Nevada Las Vegas

Eduardo A. Robleto is a Latino professor at the University of Nevada, Las Vegas School of Life Sciences. Dr. Robleto is a native of Nicaragua and got his BSc in 1986 from the Escuela Agrícola Panamericana in Honduras. He earned his M.Sc. in 1994 and Ph.D. in 1998 from the University of Wisconsin-Madison. Also, he was a Postdoctoral fellow at UW Madison and Tufts School of Medicine during 1998-2002. Dr. Robleto is the Program Coordinator of Nevada-INBRE, which is designed to improve the biomedical

research infrastructure and diversify the STEM workforce in Nevada. The Robleto lab studies DNA repair, mutagenesis, and gene expression in cells experiencing stress. Dr. Robleto believes that strong and committed mentoring empowers students to meet their potential in research and academic development. Providing role models for diverse students fosters a learning and inclusive environment that promotes innovation and creativity at UNLV and consequently improves the nation's workforce.

An Introduction to the NSF IUSE HSI Resource Hub

The HSI Resource Hub (NSF #2311181) aims to cultivate a community of STEM scholars who implement and advance evidence-based practices in STEM education at HSIs and is supported by the National Science Foundation's Improving Undergraduate STEM Education:

Hispanic-Serving Institutions (NSF IUSE: HSI) program. The HSI Resource Hub is led by an interdisciplinary team of scholars from the University of Nevada, Las Vegas (UNLV) and the University of California, Riverside, all of whom are deeply committed to institutional transformation. The collective expertise of the HSI Resource Hub team spans urban and multicultural education, STEM education, life sciences, mechanical engineering, higher education, and learning sciences.

The development of the HSI Resource Hub is informed by prior NSF-funded initiatives at UNLV, a Hispanic-Serving Institution since 2017. The first, *TRANSitions in Civil Engineering Degree education* (TRANSCEnD; NSF #1928409), focused on fostering cultural change within the UNLV College of Engineering from 2019 to 2025. The second NSF funded project between 2022 to 2026, *Improving STEM Student Fundamental Math Skills* (NSF #2225226), emphasizes place-based math games and the use of interactive online activities to reinforce foundational math concepts at UNLV. These projects sparked conversations among leading faculty about sustainable professional development opportunities for STEM faculty and ways to enhance the dissemination of effective practices tailored to HSIs, laying the groundwork for the HSI Resource Hub.

Building on these successful STEM initiatives and seeking to implement and advance evidence-based practices at HSIs, the HSI Resource Hub prioritizes three interconnected areas. First, it promotes synergistic knowledge-building to foster collaboration and networking among STEM faculty at HSIs. Second, it enhances institutional capacity by offering professional development that supports faculty in adopting and refining best practices in STEM education within HSI contexts. Third, it seeks to establish a sustainable community of practice by actively generating, supporting, and disseminating scholarly work by and about HSIs. Next, we provide an overview of the different ways in which the HSI Resource Hub team facilitates these efforts.

Synergistic Knowledge Building

In efforts to promote synergistic knowledge-building and increase the accessibility of its offerings and resources to the more than 600 designated Hispanic-Serving Institutions (HSIs) and over 400 emerging HSIs nationwide (Excelencia in Education, n.d.), all HSI Resource Hub services and resources are delivered virtually. The HSI Resource Hub's central website functions as the primary platform, actively providing resources for STEM faculty at HSIs and contains a growing STEM Education Literature Database on STEM education scholarship at HSIs, a community forum for STEM faculty to share and learn about STEM education at HSIs, a calendar of events including fellowship opportunities and e-webinar events, and a repository for monthly e-newsletters. STEM faculty are encouraged to create user profiles and opt into the membership directory, where they can link their social media accounts to facilitate broader dissemination of their own work. Through this virtual engagement, the HSI Resource Hub aims to foster cross-institutional collaboration and amplify the visibility of STEM scholarship and best

practices taking place across HSIs.

In collaboration with the UNLV Office of Information Technology (OIT), the HSI Resource Hub was launched in September, 2024. Once launched, initial outreach was sent to over 2700 individuals at HSIs and eHSIs, targeting Vice Presidents for Academic Affairs, Deans, STEM Faculty and Department Chairs. Targeted email invitations introduced institutional leaders to the HSI Resource Hub and available resources, and invited them to become affiliated members and distribute within their institutional networks.

As a data-driven hub, the team partnered with the UNLV Center for Research, Evaluation, and Assessment (CREA) to help evaluate our progress towards our goals. HSI Resource Hub affiliates were asked about aspects of the HSI Resource Hub that encouraged collaboration, community development and support, and knowledge building. Among the responses, multiple participants noted the networking opportunities and professional development the HSI Resource Hub provides to its members. In particular, participants appreciated the forum, “repository of educational resources,” “community of practice,” and the opportunity to reach “collective knowledge.” One participant shared, “Everyone is welcomed from the campus community and leadership.” Overall, participants indicated that the webinars and monthly newsletters were the most used resources within the HSI Resource Hub.

CREA also continuously monitors the HSI Resource Hub website engagement via backend website analytics data shared by the UNLV Office of Information Technology (OIT). Google Analytics data is also collected to triangulate findings and ensure robust analysis. The HSI Resource Hub has garnered more than 31,000 views since its launch on September 1, 2024, through January 16, 2026. To date, 401 individuals have registered to receive the monthly newsletters, and 233 have registered as HSI Resource Hub members for full access to the website.

Increased HSI Capacity and Support

In efforts to increase HSI capacity and support, the HSI Resource Hub offers a range of professional development opportunities to support STEM faculty in adopting and refining evidence-based practices within HSI contexts. These offerings include a monthly e-newsletter that features promising practices and innovations in STEM education at HSIs, providing faculty with accessible, research-informed insights. Newsletters also include information about existing resources, professional development opportunities, and events, like the HSI Resource Hub webinar series.

Each semester, the HSI Resource Hub also hosts a thematic webinar series on topics that elevate best practices at HSIs to facilitate continued learning and engagement. Eight virtual e-webinars were hosted between October 2024 and December 2025. In Fall 2025, the selected topic was place-based education (PBE). Faculty speakers with extensive experience implementing PBE were invited to share how they have incorporated PBE into their teaching, research, and general practice. In this way, the work being conducted by HSIs, such as Cal Poly Humboldt, the University of Nevada, Las Vegas, and the University of Texas at San Antonio, is highlighted for STEM faculty at HSIs across the country. All webinars are recorded and available for viewing by

HSI Resource Hub members at no cost.

Additionally, in partnership with nationally recognized organizations—such as the American Association of Colleges and Universities' (AAC&U) New Leadership Academy, and ESCALA Educational Services, Inc. — annual fellowship opportunities are available. Fellowships cover program registration costs and provide a financial stipend. To date, 54 fellowships have been awarded to STEM faculty at two- and four-year HSIs or eHSIs across the country, including Puerto Rico. Assessment data from faculty fellows indicate participants have increased their self-efficacy in their teaching practices, sometimes significantly so. Mean score increases between pre- and post-survey administrations ranged from 0.7 to 5.3 points on average across multiple self-efficacy indices. Participants also indicated finding the curriculum relevant for classroom practices, often expressing appreciation for the actionable tools, practical resources, and concrete insights, which strengthened their capacities to support students and facilitate inclusive learning environments at HSIs. Beyond the immediate support provided for faculty to attend well-known professional development programs, selected faculty from HSIs across the country have the potential to form a supportive cohort with peers to share and discuss strategies and lessons learned. Fellowship opportunities can expand professional networks and have the potential to produce collaborations between faculty who may not have worked together.

To increase HSI capacity and support, the HSI Resource Hub team is in the process of developing a series of professional development modules. These modules are intentionally designed to advance evidence-based practices that foster educational environments where all students feel welcome and affirmed, and that promote student success at HSIs and eHSIs. The teaching modules are currently being piloted in collaboration with the UNLV Teaching & Learning Commons (TLC), and assessment from the pilot will inform module updates and future offerings.

Ongoing Community of Practice

The HSI Resource Hub actively supports the generation, dissemination, and visibility of scholarly work by and about HSIs through multiple resources and curated databases. First, the HSI Resource Hub hosts a comprehensive database of STEM education literature on and about HSIs and eHSIs, providing access to relevant research and publications. By synthesizing over 30 years of STEM Education scholarship at HSIs, this project will identify best practices for serving Latina/o/x and other historically underserved students pursuing STEM majors at HSIs, as well as identify gaps in the literature that are ripe for future research.

Second, it maintains a database of HSI-funded projects supported by NSF and the U.S. Department of Education. This database is designed to facilitate collaboration and networking by helping STEM faculty identify and learn from ongoing or completed initiatives and best practices across institutions. We outreached to 390 NSF Project Director/Principal Investigators (PD/PI) of HSI awards, inviting them to become affiliated members and claim their project profiles. By claiming a project profile, members are able to highlight details about their awards, link to project websites and social media pages, and any other products. In this way, the HSI Resource Hub seeks to serve as an outlet for disseminating HSI project-related publications, products, and information. We are also increasing opportunities for collaboration and continue to

create the HSI Resource Hub as a central location for STEM faculty at HSIs seeking resources. To date, 22 project profiles have been claimed by PIs and Co-PIs.

Third, the HSI Resource Hub is actively working on developing empirical research that advances our collective understanding of STEM identity development. For example, while existing literature speaks to how having a STEM identity positively impacts persistence of undergraduate students in STEM at HSIs (Camacho & Lord, 2013; Rodriguez & Lehman, 2019), there is a dearth of research on the role of community-derived assets in how we measure STEM identity at Hispanic-Serving Institutions (HSIs). The HSI Resource Hub team developed a 41-item community-grounded STEM identity scale. The scale was piloted with science and engineering undergraduates attending an HSI. Preliminary findings from the survey and cognitive interviews provide initial insight into the role of community-derived assets in how we measure STEM identity at HSIs.

Lastly, the HSI Resource Hub produces topical briefs that synthesize current scholarship and outline future directions for best practices in STEM education at HSIs, offering concise, actionable insights for faculty, administrators, and researchers. For example, the first brief "*Mentoring Practices in STEM Education at Hispanic-Serving Institutions*" summarizes 38 articles on mentoring literature in postsecondary STEM education at HSIs. Brief findings include emergent and promising practices for serving students at HSIs and eHSIs across the United States and directions for future research.

Conclusion

Supported by the National Science Foundation's Improving Undergraduate STEM Education: Hispanic-Serving Institutions (NSF IUSE: HSI) program from 2024 to 2028, the HSI Resource Hub will continue to advance its established priorities of fostering collaboration and networking among HSIs, supporting professional development for HSI faculty, and generating and disseminating scholarship by and for HSIs. In particular, by providing maintenance, updates, and adding additional resources to the HSI Resource Hub website as they are developed. Through the development of a dynamic STEM HSI Resource Hub community, the initiative aims to strengthen STEM educational environments at HSIs and increase STEM educational attainment. Ultimately, the HSI Resource Hub has the potential to significantly enhance the quality of STEM learning experiences for students enrolled at HSIs.

References

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