Raising **E**quity **V**alues with the **I**nclusive Professional Framework and **I**SO DEI Standards in ***S***ocieties (REVIIS)

NSF ADVANCE Partnership (#2305550)

Overview

Global problems faced by the United States demand excellence in science, technology, engineering, and mathematics (STEM). Disciplinary excellence is reflected in the capacity to solve complicated problems, develop innovative products and solutions, and maintain resilience in the face of crisis. Evidence indicates that disciplinary excellence results from teams of well trained, diverse, people working together in an inclusive environment. Currently, the United States is struggling to meet national demand for a greater number and full engagement of diverse STEM academics and workforce professionals. Further evidence indicates that minoritized STEM-trained individuals experience "chilly climates" and marginalization in STEM disciplines, academic and organizational cultures. STEM disciplinary culture change is needed if the United States is to meet current STEM demands.

Thanks to two decades of NSF ADVANCE-funded research, we have evidence-based policies and change strategies that promote comprehensive and inclusive STEM disciplinary culture change. Further, as of May, 2021, the International Organization for Standardization (ISO), Human Resource Management released their Diversity and Inclusion Standard (ISO:30415; ANSI, 2021) which provides a blue-print for standardizing organizational diversity and inclusion across disciplinary and organizational contexts. The problem that remains is promoting awareness, knowledge, and ultimately, application, of evidence-based diversity, equity, and inclusion (DEI) strategies. **The goal of the REVIIS project is to increase awareness of and promote systemic organizational and disciplinary excellence through standardized inclusive practices.**

Engineering Professional and disciplinary societies (collectively referred to as "societies") are the focus for REVIIS project objectives. Societies are the primary vehicle to promote awareness and change because they serve academic institutions and academic-influencing organizations such as accrediting agencies, national laboratories, corporations, and government, and thus are uniquely positioned to model and help facilitate systemic change. Engineers are especially attuned to standards, consequently, engineering societies are a primary focus for the REVIIS project. **The specific objectives of the REVIIS project are to enhance awareness, trial, and adoption of the Inclusive Professional Framework for Societies (IPF:Societies); the ISO standard: 30415; and NSF ADVANCE, and other, evidence-based policies, practices and strategies for fostering inclusive organizational change,**

REVIIS will be supported by partners recognized for their national leadership in STEM DEI:

- (Original REVIIS PI: Now serving as Internal Advisor) Don Gillian Daniel, Ph.D.—PI of the NSF INCLUDES Aspire Alliance's collaborative grant to the University of

Wisconsin-Madison & National Change Co-Lead; past Co-PI of the Amplifying the Alliance to Catalyze Change for Equity in STEM Success—ACCESS+ project

- (Current REVIIS PI) Brian Burt, Ph.D.—Director and Chief Research Scientist at the Wisconsin Equity & Inclusion (Wei) LAB
- (Co-PI and Project Director) Gretal Leibnitz, Ph.D.— Faculty Associate & current Co-PI and Project Lead on the Latina THRIVE Partnership University of Rio Grande Valley (UTRGV); founding and current director of the ADVANCE Implementation Mentors (AIM) Network; past ACCESS+ project PI; ISO:30415:2021 Certified D&I Professional (Diversity & Inclusion Score Management-DISM)
- (Original co-author; Current Internal Advisor) Robin Greenler, Ph.D.—NSF INCLUDES Aspire Alliance's National Change Co-Lead
- (Co-PI) Jacqueline El Sayed, Ph.D. –CAO of the American Society for Engineering Education (ASEE)
- (Current Co-PI) Lisa Black, Ph.D.—Director, Cultural Belonging and Social Ethos of the American Society of Civil Engineers (ASCE)
- (Current Co-PI) Kiana Cornish—Director, Diversity of the American Society of Mechanical Engineers (ASME)
- (Contractor) James Felton Keith—Founder & CEO of Inclusion Score, Inc; Engineer/Economist; first Black LGBTQ person to run for Federal Office
- (Contractor) Jan Peters, Ph.D.—CEO Katalytik, LLC; Member of the British Empire (MBE) for outstanding work in diversity and inclusion; ISO:30415:2021 Certified D&I Professional (Diversity & Inclusion Score Management-DISM)
- (Contractor) Rochelle Sapp, Ph.D. & Carolyn Humphery, Ph.D.—Consultant Team Builders
- (External Advisor) Karl Reid, Ph.D.—Vice President for Equity and Inclusion, MIT; Engineering PLUS INCLUDES Alliance Co-PI; past Senior Vice Provost and Chief Inclusion Officer Northeastern; past CEO of the National Society of Black Engineers
- (External Advisor) Effenus Henderson, MBA—ISO:30415 D & I Standard Lead; Co Director at Institute for Sustainable Diversity & Inclusion,
- (External Advisor) Dawn Bennett-Alexander, J.D.—Emeritus, Associate Professor Emeritus, Legal Studies Program, Executive Education
- (External Advisor) Ala Qubbaj, Ph.D.— Dean College of Engineering and Computer Science, University of Texas Rio Grande Valley (UTRGV); PI Latina THRIVE ADVANCE Partnership Project
- (External Advisor) Tom Perry, Ph.D.—Emeritus Director ASME Education; ASME & ASEE Fellow
- (External Evaluator) Liz Litzler, Ph.D.—Director, Center for Evaluation & Research in STEM Equity, University of Washington
- (External Evaluator) Daniel Mackin Freeman, (Ph.D. Candidate)—Research Scientist, Center for Evaluation & Research in STEM Equity, University of Washington

These partners will leverage their collective strengths and networks in service of the proposed process and project deliverables.

Specifically, REVIIS will engage a pilot cohort (3-5 societies: Phase 1) and an inaugural cohort (10-15 societies: Phase 2) of engineering professional societies and their stakeholders. Guided by the socio-ecological model, REVIIS takes into consideration progressively larger circles of influence within societies (i.e., individual to systemic levels), recognizing that elements at one level influence factors at another level, and that to effect change, it is necessary to act simultaneously across multiple levels. REVIIS will engage three target audiences: (1) change leaders (individuals), (2) society change leaders with positional authority to orchestrate organization-level change (organizations), and (3) a cohort of societies engaged in collective organizational change, as well as engagement with disciplinary stakeholders, such as representatives of accrediting organizations (systems).

REVIIS aims to accomplish its goal through a two-phase approach. Phase 1 involves the creation and piloting of a novel, web-based ISO Standard 30415 "Crosswalk" platform tailored for engineering societies. Phase 2 includes developing and deploying activities to standardize a change process for those leading diversity, equity, and inclusive (DEI) change within engineering societies. The Inclusive Professional Framework for Societies, a research-informed, evidence-based framework, will be foundational to the standardization of the organizational change process developed to effect individual, organizational, and system-level, disciplinary culture change.

Expected outcomes include:

- development, awareness, knowledge, and application of ISO:30415 engineering society web-based platform by 2 cohorts (i.e., up to 15 engineering disciplinary societies);
- selection and use of "How to" organizational change tools and resources for engineering society change leaders; and
- increased awareness and knowledge by engineering accrediting authorities and other disciplinary stakeholders of REVIIS' standardization tools and resources with an eye towards future application.

Results and lessons learned from the project will be disseminated through the creation of an REVIIS Website, REVIIS project information shared on the UW–Madison Wisconsin Center for Education Research website, ADVANCE Implementation Mentors (AIM) Network webinar(s); products shared with the ADVANCE Resource Coordination (ARC) Network, and submission of information for both peer-reviewed journals and engineering society professional conferences.

In summary, REVIIS project aims to provide engineering society leaders and stakeholders with ISO: 30415 standardization resources and tools, which will drive awareness, knowledge and application of evidence-based inclusive organizational policies and practices, ultimately contributing to the goal of enhancing the United States capacity for STEM excellence and means of addressing the complex problems facing the nation, and the world, today.

Intellectual Merit. REVIIS proposes an innovative, evidence-based means of combining partner resources and creating opportunities to accelerate awareness, trial, and adoption of: (a) the ISO Diversity and Inclusion Standard (ISO:30415); (b) engineering society-adapted ADVANCE and other policies and strategies; and (c) the IPF: Societies to help disrupt individual and

organizational legacy mental models that create barriers to DEI change. REVIIS will create the first ISO:30415 crosswalk for societies and refine evidence-based change practices, and strategies; and the IPF: Societies for engineering culture change. We will create organizational change application tools (i.e., manual and webinars) to help society change leaders deploy REVIIS resources and disseminate outcomes.

Broader Impacts. By preparing and supporting engineering society DEI change leaders, organizations, and disciplinary stakeholder representatives, REVIIS will accelerate collective, national-level standardization to promote gender DEI culture reform. Based on a strong general foundation of knowledge about engineering culture and the need for change, REVIIS seeks to foster awareness about, and encourage greater exploration into, the experiences of minoritized engineering faculty, and in turn, empower society change leaders with standardized, evidence-based practices to effect positive change. REVIIS efforts have the potential to inform and complement DEI efforts not only within and between engineering societies, but also across member academic institutions, the academic-influencing domains of STEM accrediting bodies, national laboratories, STEM industry, and government. REVIIS's outputs and outcomes will have the potential for broad national impact