Building Engineering Networks for Inclusive Culture, Equity, and Retention (BE NICER)

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She/her/hers
Our Mission

IMPACT

Our Cornerstones

Excellence
Equity
Social Mobility
Sustainability
Why start with Equity and Inclusion?

College of Engineering Strategic Plan
GOAL 1:

Grow a pervasive, welcoming, equitable and inclusive culture and climate throughout the College’s students, faculty and staff that exemplifies the Penn State values.

Diversity and Belonging should be outcomes of equitable and inclusive policies and practices.

Diversity + Belonging

Wide recruitment

Equity

Inclusion
Overarching Equity Actions apply to all stakeholders

Engage
- Engage Community Members in Equity Action Projects
- Continuous Equity Action Process

Deepen
- Deepen knowledge and Leadership of Equity Related Issues
- Education, Training, and Professional Development

Retain and Advance
- Retain and Advance Community Members Equitably
- Responsive to needs of diverse constituents and supporting access to advancement

Recruit
- Recruit people who contribute to and advance Diversity, Equity, Inclusion Efforts in all programs
- Developing a culture that uses continuous holistic process to prepare, invite, admit or hire
Fix the broken ladders

Low Expectations
Deficit Assumptions
Deficit-minded Stereotypes

Scholarships
Educated Parents
SAT / ACT Tutors
AP Credit
Honors Courses
Highly Skilled Teachers

Framing from collaborations with the Penn State Center for the Study of Higher Education
Activating Diversity, Equity, Inclusion, and Belonging in COE

Program Management

- Undergraduate Scholarships
- Fundraising for Equity Programs and Scholarships
- Strategic Plan Goal 1: Equity Action Plan
- Center for Engineering Outreach and Inclusion
- College Faculty Search

Center for Engineering Outreach and Inclusion

- Equity Grants and Research
- International Engineering
- Multicultural Engineering
- P-12 Curriculum Development
- Student Engagement
- Student Research and Graduate Equity
- Student Transitions and Pre-College
- Women in Engineering
Inclusive Academic Community

Developing a Vision

People
Penn State Values
Practices
Policies
Pedagogy

Intellectual community
Support for priority areas
Professional development
Social network
Civil and respectful space
Sponsors
Center for Engineering Outreach and Inclusion

- Equity Grants, Equity Research, and Broader Impacts Consultation
- International Engineering Program
- Multi-Cultural Engineering Program
- P-12 Curriculum Development
- Student Engagement
- Student Research and Graduate Equity
- Student Transitions and Pre-College Programs
- Women in Engineering Program
Student Transitions and Pre-College Program Objectives

1. To **support** and **facilitate student success** for all undergraduate Penn State students transitioning from commonwealth campuses and outside institutions to the College of Engineering at University Park.

2. To **collaborate** with commonwealth campus leaders who support College of Engineering students as they **transition** to campuses outside of University Park where they will complete a college of engineering degree.

3. To **broaden participation** and **build pathways** to engineering for P-12 learners through academic excellence to enhance college readiness, foster inclusion, critical engagement, and innovation.

- Commonwealth Engineering Scholars = Change of Campus Students
- Military-Affiliated Students, Veteran Students, Active-Duty Service Members, Dependents of Veterans
- Transfer Students

**Tracy Peterson**

Advisor: American Indian Science and Engineering Society (AISES), Society of Hispanic Professional Engineers (SHPE), Indigenous Peoples’ Student Association (IPSA)

- Past Chair, Staff Advisory Council – Equity and Inclusion
- Chair, Indigenous Faculty and Staff Alliance
- Member, Institutes of Energy and the Environment DEI Committee
MEP “WHY” | PROGRAM OBJECTIVES

Creating a welcoming, family environment that celebrates culture and inclusion

Improve the recruitment and retention of racially and ethnically minoritized students in the College of Engineering

Develop students both academically and professionally and through engagement in impactful leadership opportunities

Graduation rate for Summer Bridge Students = 68%
WEP is a pivotal element in consistently high undergraduate retention and graduation rates.

Penn State Women in Engineering Program was selected as recipient of the 2019 WEPAN “Women in Engineering Program Initiative Award” recognizing “outstanding initiative that serves as a model for other institutions to increase recruitment and retention of women in engineering.”

The number of Bachelor’s degrees awarded to Penn State female engineers increased 116% from 2011 to 2020.

Building Engineering Equity Infrastructure

- Center for Engineering Outreach and Inclusion
- Departmental DEI Leaders & Committees – Community of Practice
- Departmental Mentorship Activities
- Engineering Faculty Council – Faculty Equity and Inclusion Committee
- Staff Advisory Committee -- Inclusive Leadership in Equity, Allyship, and Diversity (ILEAD)
- Leonhard Center Workshops – Big10+++ Curriculum Workshop on ABET DEI Criteria
- Faculty Ombudspersons
- Faculty Affinity Groups
Advancing Master’s Program Scholars

“Strengthening Pathways for the Domestic Graduate Engineering Workforce and Future Professoriate: Increasing Access to Engineering Master’s Programs”

• NSF S-STEM program
• Engagement process that develops faculty mentors and student community
• Leadership team
  – PI: Julio Urbina
  – Co-Is: Catherine Berdanier, Reginald Hamilton, Tonya Peeples
  – Eval: Cathy Cohan
E&I: College-Level Faculty Search

- Departmental search committee representation
  - Resulted in a diverse pool
  - Identified candidates for departments

- Five hires in first two cycles
  - Chris Dancy: IME/CS
  - Donald Ebeigbe: EE
  - Tahira Reid Smith: ME
  - Romulo Goes: EE
  - Daniel Whisler: EDI

- Third cycle underway

- Sharing rubrics with other searches
Accomplishments

• Socializing a vision for Inclusive Academic Community
• Rebuilding the Center for Engineering Outreach and Inclusion Team
• Obtaining a A. James Clark Scholar Program at Penn State
• Developing the Equity Action Plan
• College Level Faculty Search Outcomes
• Building COE DEI Infrastructure – Dept, EFC, Diversity Roundtable
• Getting the ASEE Deans Diversity Recognition Program Bronze-level Designation
Eddie Bernice Johnson NSF INCLUDES Aspire Alliance

- Aims to cultivate a diverse and inclusive national science, technology, engineering and mathematics (STEM) faculty that thrives within inclusive organizational practices and cultures, leading to high underrepresented group retention along STEM career pathways.

- Cooperatively led by the Association of Public and Land-grant Universities (APLU), the University of Wisconsin Madison, the University of Georgia, Iowa State University, the University of California, Los Angeles, and the University of Texas at El Paso.

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We have added **175** colleges, universities, disciplinary societies, and other organizations across **40** states (including DC) to the national network.
ASPIRE’S FOUR GOALS

GOAL 1: INCLUSIVE
Deepen the preparation of all STEM faculty to be inclusive and effective in their undergraduate teaching, research mentoring, and advising

GOAL 2: DIVERSE
Diversify the faculty through effective recruitment, hiring, and retention of URG STEM faculty via institutional transformation in practices, policies, and resources

GOAL 3: CULTURE
Foster institutional cultures that recognize and value inclusivity and diversity broadly, and in the context of STEM faculty work specifically

GOAL 4: COLLABORATION
Building collaborative infrastructure with a focus on equitable, inclusive shared leadership
Kindling Inter-University Networks for Diverse (KIND) Engineering Faculty Advancement

EBJ NSF INCLUDES ASPIRE ALLIANCE
ICHANGE NETWORK
WWW.ASPIREALLIANCE.ORG

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Change Levers & Activities within the IChange Process

Deep Dive Into Data
- Self-Assessment Policy/Practice Audit
- KIND Data Dashboards
- Climate/Satisfaction Data
- Focus Groups and other qualitative data

Identify Areas for Change
- Look for patterns that raise questions
- Dig deep to determine root causes (5 whys)
- Reconsider assumptions about excellence, contribution, and disciplinary advancement

Engage the Community
- Create opportunities for input
- Pilot new approaches at the local level
- Seek feedback on proposed solutions and processes

Balance Institutional Objectives with Local Action & Accountability
- Ensure local buy-in by allowing units to set own strategies
- Enhance strategies by clearly articulating overall goals
- Consider strategies to that might intervene in key disciplinary dilemmas

Continuous Learning and Improvement Cycles
- Identify measures and metrics to help assess success
- Consider leading and lagging indicators
- Review of strategies and outcomes after each activity
For recruitment, retention and success of BIPOC community members, prioritize inclusive practices -- “how work is done” to address how the organization “feels” to stakeholders.
Use restorative spaces for change leaders to seek support and build trusting relationships.
Be clear about your institutional change goals and communicate them widely. Encourage experimentation and adaptation across units to enhance goal alignment and disciplinary discretion.
Thank You