Innovation in Student Engagement: Pathways to Engaging Underrepresented Populations

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WEPAN Board Member for Strategic Partnerships

2011 ABET Annual Conference
What is WEPAN?

- Manages the body of knowledge on women in STEM
- [www.wepanknowledgecenter.org](http://www.wepanknowledgecenter.org)
- Promotes research-based practices to attract, recruit, retain women in engineering
- Strong systems approach—strategic workforce development
- 600+ members, 140 engineering schools
- Not-for-profit, founded 1990
WEPAN Member Locations
WEPAN’s Core Purpose

• To propel higher education to increase the number and advance the prominence of diverse communities of women in engineering.
WEPAN’s Big Goal: 50/50 by 2050
Women Earn Greater Percentage of Law and Medicine Degrees than Engineering

Source: CPST, data derived from NSF, NCES, American Bar Association, and Association of American Medical Colleges
The Educational Pathway for Women in Engineering

- Engineering Ready H.S. Seniors:
  - 52% of Males (about 890,000)
  - 48% of Females (about 820,000)

- Freshman Engineering Students:
  - 84% Male (86,465)
  - 16% Female (16,896)

- Engineering Baccalaureates:
  - 80% Male (60,721)
  - 20% Female (15,282)

- Engineering PhDs:
  - 83% Male (5,368)
  - 17% Female (1,136)

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Women Still Earn Few Bachelor’s Degrees in Engineering Disciplines than Men

Source: CPST, data derived from Engineering Workforce Commission
WEPAN’s Core Values

- **Knowledge**: research, statistics, pedagogy and practice on women in engineering to drive change
- **Collaboration**: key to advancing women in engineering
- **Diversity**: inclusion of diverse communities of women improves engineering
- **Leadership**: pivotal to advancing the success of women in engineering
WEPAN’s Ongoing Transformation Work

• ENGAGE project [www.engageengineering.org](http://www.engageengineering.org)
  • NSF, 5-years, $2.5M, 30 schools, research-based instruction improvements, classroom
  • Everyday engineering examples, spatial visualization, faculty-student interaction

• WEPAN Knowledge Center [www.wepanknowledgecenter.org](http://www.wepanknowledgecenter.org)

• WEPAN National Conference: June 26-28, 2012, Columbus OH
  • Getting to the Heart of It All: Connecting Faculty, Student Programs and Research on Gender in STEM

• WEPAN Professional Development Webinars

• Advocate, collaborate in leveraged venues
  • ASEE, E-Week, ASCE, TMS, AAAS, NAMEPA
How Can We Work Together?

- Access body of knowledge on women in engineering
- Gain familiarity with root causes of underrepresentation
- Access network of women in engineering professionals
Office of Diversity & Outreach
College of Engineering

Mary C. Juhas, Associate Dean

Clinical Assoc. Prof, Materials Science & Engineering

Program Director Project CEOS
Comprehensive Equity at Ohio State
Engineering Bachelor’s Degrees by Ethnicity

Data on ethnicity does not include schools from Puerto Rico or foreign nationals.

The 2010 percentage of Hispanic graduates is 8.3% if the two schools from Puerto Rico are included. American Indians (0.5%), Hawaiian/Pacific Islanders (0.1%) and Two or More (0.6%) are combined under Other. Fourteen institutions reported virtually all of their U.S. residents in the Unknown category or they reported all White students in the Unknown field. These institutions were removed from the calculations for race and ethnicity.
CoE Diversity Excellence Council

• Three subcommittees that focus on recruitment and retention of underrepresented groups in engineering
  – Undergraduate subcommittee
  – Graduate subcommittee
  – Faculty subcommittee

• Each subcommittee is comprised of faculty, staff, and students

• Provides guidance to the dean for strategic planning initiatives e.g.,
  – Partner hiring, search committee training
  – Building an External Advisory Board on Diversity for CoE
  – Focused recruitment at national conferences (SWE, NSBE, SHPE)
  – Sexual harassment awareness and prevention
Support for Faculty Interviews and Dual Career Hires

- Associate dean works with the Engineering dean, the department chairs, the search committees, and external entities to enhance faculty interviews.
  - “Two-body opportunities”
  - Helps network women and underrepresented minority candidates
- OSU is an NSF ADVANCE institution – widely recognized by many faculty candidates.
“You cannot do well what you say is your mission without diversity.”

- Dr. Johnnetta Cole