Transforming Undergraduate Education in Engineering
Phase III: Voices on Women's Participation and Retention

June 12-13, 2015 | The W Seattle Hotel, Seattle, WA

Breakout Session I: The University Experience

What stand out?

- Resource issue
    - Institution under resource this
    - NSF has shifted from implementation to research
- Goes back to faculty
    - Resistance, awareness, empathy
- Women- disaggregate – solutions are different for women of color
- It's an ecosystem – systems approach is required
- Faculty are an explicit critical part of the system – for both other faculty and students drives retention
- Role models AA women found role models outside Engr. Could be men?
- Obligations to learn to be mentors as men faculty – reach out
- Welcoming – what does it look/feel like for students
- Necessary for success?
- Cumulative?
- Curricular (faculty) problem- based learning = social relevance. Some faculty thinking Engr. = equations/ can't get to social relevance ever
- Lack of current pedagogy, industry experience/ less relevant
    - State of body of Knowledge
    - Not gravitating to ENGRG
    - Know enough about why
    - Know enough to address better(solve)
    - Could measure(better) accountability
    - Tenure, P+T, Evaluation
    - Department heads – faculty issue WIE have this student metric.
    - Others have divorced
- Things tie back to faculty, translate to student experience
- Grabbed your heart?
- HBCUs provide a path – underlying mission

- Four frames – Frame 1= fixing women misconception = what's the faculty mindset
- Broken system
- Can't curriculum be delivered socially relevant/ compelling, engaging pedagogy surely they can be. What stops it?
- Knowledge, experience, incentive
- President wants 1000% engagement faculty reshaping curriculum
- Reflective practices
- Recruiting – women have significantly better GPAs – Admissions
- Marrow focus on math + science obscures other skills ENGRs need transition to career
- ENGRG as a problem-solving field and creativity is not promoted. Often it's about the applications themselves. Creativity may be an attracter
- Help us understand-further developed
- How to change/incentivize improvement in curriculums
  - Leader-bottom up faculty driven
  - Understand needs(industry)
  - Governance approval
  - Course outcome/ delivery
- ABET Student outcomes- what is learned?
  - Want variation across institutions
  - Student env. Issues are somewhat "local" vs. universal
  - Accred. is good assessing knowledge
  - Other skill "soft" are hard to measure and important
- Legacy issues keep things the same
  - Prescribed credit hours
  - Math, science, chem, physics
  - State legislature pressures for 120hrs
  - Every class must be great!
  - Curic. 40 Ya = same now
  - Quarter system = 3 courses = 1year material can be condensed – proven
  - Must free up time
- Industry speaks more loudly and w/ more $$ in business. Engrg. schools are professional programs
- Industry has legacy issues too
- B-Schools have built AA faculty from 3% to 15%. Why not engrg?
- Blueprint for diversity in engrg – 1970s
- GEM fellows
- The problem is broad, systemic, $$$
- No hiring incentive/ check box mentality = Got One!
- Lack of advocates

Agreements

- Faculty play a pivotal role
- Accountability is critical we must measure + incentivize
- It's a systemic problem
- Problems flow into corporate America
- Resources
    - faculty development
    - people on the ground – staff
- Advance is a good model … but …
- Accept all recommendations from RR
- Corps can have a leadership role at many layers

Why can't there be a grand challenge around diversity?

Commitment is critical