All Hands on Deck!
Engaging Faculty Voices to Rise Above the Storm!

- Introduction

Five R’s to Diversify Engineering Faculties

- Recruiting Faculty Colleagues
- Relating to Faculty Colleagues
- Retaining Colleagues in the Academy
- Reshaping Colleague Conversations
- Recognizing Resourceful Peer Mentoring and Leadership

- Questions/Open Discussion
ADVANCE-ENG With PURPOSE:
Grand Challenges and Great Solutions

Professor Christine S. Grant
Associate Dean Faculty Development & Special Initiatives: College of Engineering
Professor: Department of Chemical and Biomolecular Engineering (CBE)
North Carolina State University
Raleigh, North Carolina
Promoting Underrepresented Presence on Science and Engineering Faculties (PURPOSE) Institute

“Institutional Changing Administrative/Faculty Collaborative Partnerships”

PURPOSE Institute Mission Statement

“To significantly increase the number and success of URM engineering and science faculty utilizing innovative programs that facilitate strategic institutional partnerships promoting URM faculty recruitment, promotion, retention and leadership.”

Support: NSF, NCSU, CASEE/NAE
Goals

**Partnerships:** To stimulate collaborative efforts between senior URM faculty and university admin. to promote success of URM faculty in engin. and sci.

**Events:** Advocate strategic initiatives enabling institutions to succeed in URM faculty recruitment/retention. Coordinate professional development programs to celebrate & empower current & aspiring faculty.

**Major Deliverable:** Establish Best Practices Guide for recruitment, promotion and retention of URM faculty based on career info from successful faculty and administrative leaders.

**Organization:** Establish strong coordinating infrastructure to facilitate productive development with and for key stakeholders. Achieve excellence in Institute operations

**Mentoring:** Advance development of peer mentoring communities for URM faculty. Capture and disseminate best practices in cross cultural faculty mentoring.
The PURPOSE Institute

- Institutional Administration
- Underrepresented Minority (URM) Faculty
- URM Students
- URM K-12 Students

Integrating the Pipeline....
**Advisory Group**

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<tr>
<th>Dr. Ansley Abraham, Director of the State Doctoral Scholars program of the Southern Regional Education Board (SREB);</th>
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<td>Dr. Frank Huband, Executive Director of the American Society for Engineering Education (ASEE);</td>
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<td>Dr. Shirley Ann Jackson, President of Rensselaer Polytechnic Institute;</td>
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<td>Dr. William Wulf, Former President of the National Academy of Engineering;</td>
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<td>Dr. James Johnson, Dean of Howard University College of Engineering;</td>
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<td>Dr. Eloy Rodriguez, James A. Perkins Endowed Professor of Biology and Environmental Studies at Cornell University</td>
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<td>Dr. David Wormley, Dean of Engineering at Pennsylvania State University</td>
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When URM Engineering Faculty Were Asked....
Do you think your dept./college is serious about diversifying the faculty?

- Yes and no. They would like to, but are clueless how to go about it. They still listen to the social workers on campus, who are clueless as to what makes an engineering faculty member.

............It simply never occurs to them that the research atmosphere and challenging colleagues have anything to do with faculty recruiting. All they can think of is faculty candidates "seeing" more faculty that look like them...”

- “No not completely. They are interested in part of it, as we do try to find women.”

- “I think my department/college is embarked on an effort to promote diversity. However, I am not sure how genuine this effort is. Sometimes I feel that they are looking for just a “number” to make the unit “look” better. Sometimes I think they speak different to you than they speak between themselves because you are “different”. This may be an issue of perception but this is what I feel.”
Do you have faculty diversity as a top priority in your college?

1. Yes
2. No
Do you have faculty diversity as a top priority in your university?

1. Yes
2. No
When your recruit or hire a chairperson/department head, how important is it that they are aligned with this objective?

1. Very important
2. Somewhat important
3. Neutral
4. Low importance
5. Not at all important
Are there incentives at your college or university level that promote recruiting diverse faculty?

1. Yes  
2. No

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Do you have concurrent initiatives at your university for staff and student diversification?

1. Yes
2. No
Empowering up!

From the Top Down!

Admin.

Faculty

Empowering up!

PURPOSE INSTITUTE
2007 ASEE EDI Session on Diversifying Engineering Faculties

Why This Session was Held?

- To begin a dialogue among the deans regarding issues among URM faculty within colleges of engineering

- To discuss the importance of identifying talented engineering faculty from minority groups that should be recruited into leadership positions within Colleges of Engineering.

- To discuss the creation of a culture of accountability among the council of deans regarding minority issues. It appears that the chairs, and the deans in engineering schools do not recognize this deficiency nor deem it something they should work to improve.
Diversifying Faculties, Voices from Within: An Interactive Multi-Media Event!

Act I: Take This Job and Love It!!

Act II/III: Subtle and Blatant Assaults

Act IV: Alienation/Isolation

Act V: Why I Left!!

Act VI: Service

Act VII: Mentoring

Act VIII: Leadership Development
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<th>Name</th>
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<th>Position/Department</th>
<th>Education</th>
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<tr>
<td>Dr. Gary May</td>
<td>Georgia Institute of Technology</td>
<td>Steve W. Chaddick School Chair, Professor, Electrical Engineering</td>
<td>B.S., M.S., Georgia Tech, Ph.D. - UC Berkeley</td>
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<tr>
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<td>Prairie View A&amp;M University</td>
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<td>University of Puerto Rico at Mayaguez</td>
<td>Professor Chemical Engineering Department</td>
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<tr>
<td>Dr. Ann Q. Gates</td>
<td>University of Texas at El Paso</td>
<td>Chair, Computer Science; Associate Professor, Computer Science</td>
<td>B.S., M.S. – UT El Paso, Ph.D. - New Mexico State Univ.</td>
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<td>Dr. Lance R. Collins</td>
<td>Cornell University</td>
<td>Professor and S.C. Thomas Sze Director, Mechanical and Aerospace Engineering</td>
<td>B.S. - Princeton, M.S., Ph.D. - U. Penn</td>
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PURPOSE Institute Developmental Activities

Interdisciplinary Think Tank: A Initial “Fact-Finding” Summit
(June 2005, NAE)

Underrepresented Minority ChE Women Faculty Summit
(July 21-24, 2005; NCSU, Raleigh, NC)

Celebrating Her Excellence!!
Mentoring Minorities and Women: 
Accomplishing Excellence in Science and Engineering

Schools include: 
Caltech 
UMBC 
UNC-Charlotte 
GA Tech

Organizations include: 
NSBE 
Industry 
NOBCChE 
Goggle
NSF Sponsored ADVANCE Leadership Award

Principal Investigators: Christine S. Grant PhD, Jessica DeCuir-Gunby, PhD

NSF ADVANCE Leadership 0545269

Goals
- Increase the number of Underrepresented Minority (URM) women faculty in Science and Engineering
- Create venues and environment to stimulate candid discourse on experiences and successes in moving through the ranks, addressing critical issues in race and gender in STEM disciplines
- Build global database of URM women faculty in Science and Engineering for purposes of networking and collaboration
- Improved retention and promotion into leadership of URM women faculty
- Assess and evaluate outcomes for publication
NSF Sponsored ADVANCE Leadership Award

• **1st summit**- NCSU in Raleigh, NC, 2007: over 60 women at all academic ranks focused on cross-cultural mentoring and the role of *top fifty* institutions.

• **2nd summit**- NCSU in Raleigh, NC, 2009: featured over 30 senior URM women engineering faculty as a catalyst for creating a strong peer leadership mentoring network and the initial development of a cohesive community serving as a powerful resource in the academy.

• **3rd summit**- California Institute of Technology, 2009: The culminating summit focused on women at all faculty ranks. Designed to pass on the depth of wisdom gleaned from Senior Women Engineering Leaders from the Spring 2009 Summit, and empower women URM faculty through a series of interactive sessions. Summit featured active mentoring by senior leadership and brainstorming activities to collectively solidify the critical voices and associated leadership roles they play in national areas such as the Engineering Grand Challenges, workforce, global technological needs, and university governance.

• All summits cultivated the formation of a network of peers, celebrating accomplishments, sharing strategies for success, and raising the bar even higher for all in the academy.
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Summit Highlights

- Presidents Roundtable Discussion, Q&A: candid dialog w/three University Presidents: Brown (Simmons), UC San Diego (Fox), Caltech (Chameau).
- University Administration Panels: Caltech (Tirrell, Hunt), NCSU (Martin-Vega)
- Outreach: NSF-AGEP Collaboration Lunch with URM
- Graduate and Undergraduate
NSF Sponsored ADVANCE Leadership Award

Summit Highlights

- First time convening of target group to glean from each other the tools of success in the academy, 2007.
- Outreach: 75 nationally established URM women engineering professors provided critical connection for 70 URM middle school girls to view themselves as future engineering professors, 2007.
- *ADVANCE Profiles in Leadership Summit at NCSU, 2009.* 30 senior women faculty from 20 colleges & universities across US, Puerto Rico & Virgin Islands attended
- Candid dialog between women and NCSU administration; focus on critical issues; NCSU departmental visits and connections
- Mentoring, networking, collaborating, and celebrating groundwork laid for next summit of faculty of all ranks
- *ADVANCE Summit at California Institute of Technology, Summer 2009* 60+ women representing 47 colleges & universities, 25 US States, Puerto Rico, and British Columbia attended
- Mentoring, network & collaboration, professional development, information sharing; Caltech departmental visits and connections and networking meals
ADVANCE-ENG With PURPOSE:
Grand Challenges and Great Solutions
All Hands on Deck!
Engaging Faculty Voices to Rise Above the Storm!
North Carolina State University

Louis Martin-Vega

Dean of COE
9 Depts.

Faculty
Total: 250
URM: 20 (est.)
Women: 40 (est.)
Ohio State University

Greg Washington
Professor of Mechanical Engineering

Dean of COE
12 Depts.

Faculty
Total: 282
Minority: 27%
Women: 14%
Texas A&M State University

Valerie Taylor
Professor of Computer Science

Department Head
Computer Science

Total Faculty: 39
Women: 7
URM: 4
University of Central Florida

Professor Lesia Crumpton-Young

Former Department Chair Industrial

16 faculty
4 URM
4 women
6. What could the Purpose Institute do to assist you with reaching your objectives to diversify the COE faculty? (Select up to 3)

1. Nothing
2. Targeted traveling seminars on faculty diversity in engineering for your college leadership
3. Provide diverse scholarly seminar speakers to your departments for technical seminars
4. An advisory group of senior URM engineering faculty for your college leadership
5. A resource guide for best practices for recruitment, retention and promotion of URM faculty
6. A set of mentors for your current and future URM faculty
Do you believe that it is truly possible to diversify all engineering faculties at a level that mirrors US demographics?

1. Yes
2. No
• Thank You!!!
Broadening Participation
.... an NSF Legacy.....
History and Accomplishments

• Created vision in 2004
• Formed an advisory group of nationally recognized STEM leaders
• Held five national think tank summits in the 2005-2006 year
• Developed a strategic plan, core staff, and communication vehicles
• Established collaborative relationships with national agencies
• Built industry connections and obtained verbal commitments of Institute support from major corporations
• Conducted educational research on best practices
• Reached over 400 constituents from the three targeted URM communities: faculty (100+), students (300+), and administration (50+)
• Awarded over $50K in funding for use through FY 2006 exclusively for Institute development

Future Events and Funding

• Partnerships and sponsorships with industry supporters
• Interactions with 100+ women engineering faculty during three summits over the next three years
• Presentations to 100+ engineering deans during engineering deans institute
• Contact with engineering faculty during the NAE/CASEE and Frontiers in Education meeting
• Introduction of the Institute to interested audiences and organizations to generate interest in future joint activities
• Publication of best practice literature geared toward specific populations
• Creation of mentoring network for benefit of three targeted communities
• Awards totaling $393,000 for exclusive use over the next three years for Institute development and project execution