Effective Strategies to Diversify STEM Faculty

Your name here
Your school here
Teams of Faculty Developed Recommendations

- Faculty, administrators, and diversity experts from 7 universities worked as teams to evaluate and propose these strategies for use in STEM departments
  - New Mexico State University, University Texas, El Paso, University New Mexico, University Washington, University California Irvine, University Texas, Brownsville, Michigan Tech
  - Colleges of Engineering, Arts & Science, Agriculture & Home Economics
  - Deans, Department Heads/Chairs, Professors

- Process:
  - Spring 2005—Information gathering
  - Summer 2005—Working retreat to develop presentation
  - Fall 2005—Review process
Why Is Diversity Imperative?
Academic Administrators’ Answers:

• “A matter of national need.”
• “S & E workforce impacts our ability to compete in the global marketplace. All talent is needed.”
• “We cannot afford to lose women and URM* students.”
• “Female and URM faculty will help attract and retain female and URM students.”
• Quality of Education – “diversity of viewpoints and experiences provides a richer educational environment for students and faculty alike.”
• “Diverse teams are more effective problem solvers.”

*URM: “under represented minority,” includes African Americans, American Indians and Alaska Natives, Pacific Islanders, and Latinos/as.
National Science Foundation Identifies Diversity as a National Need

If our 21st Century science and engineering workforce is not representative of our citizenry, we as a nation will miss the most promising opportunity for continued U.S. success. The loss will cut two ways – it will rob worthy individuals of the chance to enrich their lives and to contribute to the engine of our economy and culture, and it will undermine the ability of our nation to prosper within an increasingly competitive world.

– Joseph Bordogna, former Deputy Director, NSF, September 17, 2003, Engineering Societies Diversity Summit II.
The “Leaky Pipeline”

- Women and URM students are often “lost” along the pipeline.
  - Pipeline transitions: HS → B.S. → M.S. → Ph.D.
  - Hostile climate.
  - Demands of family responsibilities.
  - Lack of role models.
  - First generation to attend college.
Student Population Projected to be 50% URMS by 2050
U.S. Population 18-24 Years Old, by Race/Ethnicity: July 1990-99 and Projections to 2050

Doctorate Recipients: 2005

Percent Female Among Doctorate Recipients, 2005

Parity Line: 49%


http://www.cpst.org
Doctorate Recipients: 2005

Percent Asian/Pacific Islanders Among Doctorate Recipients, U.S. Citizens and Permanent Residents, 2005


http://www.cpst.org
Doctorate Recipients: 2005

Percent URM Among Doctorate Recipients, U.S. Citizens and Permanent Residents, 2005

Parity Line: 31%


http://www.cpst.org
Women as a Percent of Ph.D.s Employed in Universities & 4-Year Colleges by STEM Field and Rank, 2003


http://www.cpst.org
Top Ten Rationalizations Participants Have Heard for Not Hiring Women and URM

#10 Women and URM are not interested in academic careers.
#9 There are no “qualified” women and URM.
#8 Women with children are not serious academics.
#7 Women and URM do not apply.
#6 We can’t compete for them.
#5 Women and URM are too expensive to hire.
#4 We can’t find women or URM that fit our special needs.
#3 Why should we spend more time getting these applicants?
#2 It’s too expensive to advertise more widely.
#1 If it ain’t broke, why fix it?
Objectivity is Compromised by Unconscious Bias (Cognitive Errors)

- Peer review process assumed to be objective.
- Unconscious errors.
  - Often unintentional.
  - Everyone makes them.
  - Making decisions quickly is more susceptible to problems due to unconscious bias.
  - Go either way: can be advantage or disadvantage.
Example of Gender Bias

- Study of Swedish Medical Research Council review of post-doctoral fellowship applications.
- Women needed to produce more than 99 “impact factors” to be perceived as competent as men with only 20 impact factors.

Example of Gender Bias

Consequences of Cognitive Errors
(Unconscious Bias)

- First impressions
- Negative/positive stereotyping
- Elitism
- Raising the bar
- Cloning
- Good fit/bad fit

- Provincialism
- Self-fulfilling prophecy
- Premature ranking/digging in
- Wishful thinking: opinions not facts
- Character over context

Adapted from Moody 2005.
Resources for Discovering Personal Biases

• Rising above cognitive errors: guidelines for search, tenure review, and other evaluation committees. Moody (2005).
  http://www.DiversityOnCampus.com

• ADEPT Tool: interactive case studies in portfolio evaluation developed by the Georgia Tech ADVANCE Program.
  http://www.adept.gatech.edu/download.htm

• Self Assessment: Implicit associations test.
  https://implicit.harvard.edu/implicit/demo/index.jsp
How to Effect Change and Promote Diversity

• Establish clear and transparent written guidelines and procedures that minimize cognitive errors.
• Promote diversity and ensure an equitable workplace at every level of the institution.
• Acknowledge that effective hiring and retention will attract individuals that will provide diversity for competitive advantage.
Effective Strategies to Diversify STEM Faculty

Strategies for Effective Hiring
# Hiring is a Shared Responsibility

<table>
<thead>
<tr>
<th>Actions</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate identification</td>
<td>Faculty</td>
</tr>
<tr>
<td>Verbal negotiation of salary and start-up</td>
<td>Department chair</td>
</tr>
<tr>
<td>Resource allocation</td>
<td>Department chair, dean, other administrators, faculty</td>
</tr>
<tr>
<td>Written offer</td>
<td>Dean, EEO, personnel/human resources, etc.</td>
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</tbody>
</table>
Faculty Actions That Promote Diversity in Recruitment

- Recruit all the time.
- Invite diverse speakers to departmental seminar series (who may become future recruits).
- Be proactive in recruiting — don’t wait to search.
  - Develop professional contacts with women and URM.
  - Develop professional contacts with doctoral students at professional and society meetings.
Faculty Actions to Increase Diversity in the Search Process – Cast a Wide Net

- Craft an advertisement with:
  - Broad position description.
  - Emphasis on flexible work/family balance policies.
  - Emphasis on institutional commitment to diversity.
- Post ads on appropriate websites.
- Contact national organizations and alumni lists.
- Create a diverse search committee.
- Be consistent in interview process.
- Use phone interviews to create a longer “short list”.
- Have women and URM candidates meet with other women and URM faculty regardless of discipline.
Faculty Actions During File Review

• Make process transparent and minimize cognitive errors.
  ▪ Use a matrix.
  ▪ Insist on concrete evidence in each dimension.
  ▪ Have each applicant’s file presented to the committee by a committee member.

• Look at multiple dimensions of the job.
  ▪ Productivity/fundability.
  ▪ Teaching needs.
  ▪ Possible collaborations.
  ▪ Record on diversity.
  ▪ Evidence of good citizenship/leadership potential.

• Avoid ranking early in the applicant review process.
Department Chair Actions to Increase Diversity in Recruitment

- Verbalize how diverse faculty strengthen the institution, department, and program.
- Construct search committee to maximize diversity.
- Ensure that search committee members are appropriately informed about diversity and aware of unconscious bias.
- Involve all faculty in broadening the pool of applicants.
  - If possible, use advertising language that will attract the broadest possible pool.
  - Look for the best person rather than a carbon-copy of the person who previously held the position.
  - Use the search to broaden the expertise of your department/program.
- Maintain a timely search.
Construction of the Search Committee

• Invite members from other departments or programs.
• Members should:
  ▪ Recognize the significance of diversity as it contributes to the institution’s goals and competitiveness.
  ▪ Have diverse points of view.
  ▪ Come from diverse backgrounds.
• Identify non-committee members or representatives from program offices to meet with candidates during campus visits to provide more information about your university and community.
Department Chairs’ Actions During Candidate Review

• Promote the department and the university to the candidates.
  ▪ Demystify P & T and performance evaluation process.
  ▪ Describe support given to junior faculty.
• Insist upon equal and respectful treatment during:
  ▪ Review of applicants’ packets.
  ▪ Phone and campus interviews.
• Maintain contact with candidates on short list.
• Work aggressively on dual career or partner-accommodation packages.
Deans’ Actions to Increase Diversity in Recruitment

• Meet with search committees.
  ▪ Emphasize institutional priorities, including diversity.
  ▪ Stress importance of best practices.
• Post relevant work/family policies on the college webpage or include in a brochure.
• Incorporate diversity into the college’s strategic goals and objectives.
Deans’ Resource Allocation Actions

• Facilitate institutional support.
• Ensure that search committees have adequate funding and administrative support by offering:
  ▪ Timely letters.
  ▪ Competitive and equitable start-up packages.
  ▪ Dual career accommodations.
• Reward chairs/heads who use “best practices” in searching.
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Strategies for Effective Retention
A Collegial Work Environment Provides a Foundation for Recruitment and Retention of All Faculty

• Set up process to develop a “code of conduct” (essential).
• A departmental retreat can be one strategy to develop a code:
  – Find a good moderator who is not in your group.
  – Someone who understands higher education.
  – Experts at your university (e.g., school of business).
  – Experts at other universities.
• Refer to AAUP statement.
• Be aware that things that look fine to senior faculty may not for junior faculty.
• Review code on a regular basis.
Best Practices: Retention
Creating a collegial, welcoming, and open environment

• Value diversity in the department.
• Resolve conflict and harassment rapidly.
• Be transparent in operations, including fair and open P&T guidelines
• Mentor faculty.
  ▪ Facilitate and monitor carefully.
  ▪ Volunteer to review colleagues’ work.
  ▪ Enhance research collaborations.
Best Practices: Retention
Institutional Efforts

• Hold orientation sessions for new faculty.
• Institute flexible and accommodating work/family policies and practices.
  ▪ Dual career hires.
  ▪ Family/personal leave.
  ▪ Tenure clock.
  ▪ On-site daycare.
• Support career development.
  ▪ Use annual review process as opportunity to plan and support.
  ▪ Support at junior and mid-career levels.
Mid-Career Retention

- Ensure equity in job assignments and rewards for job performance.
- Create a collegial work environment.
- Provide opportunities to obtain seed money for new professional directions.
- Accommodate family and health needs.
- Encourage leadership.
  - Endorse women and minorities as leaders.
- Ensure competitive salaries.
Data Resources

• Various reports on science and engineering education and labor force are available from the Commission on Professionals in Science and Engineering: http://www.cpst.org/


• Availability data are computed by the University of California, Office of the President and made available online at: http://www.ucop.edu/acadadv/datamgmt/welcome.html

• The National Science Foundation publishes data on doctoral recipients every two years. The most current data are available at: http://www.nsf.gov/statistics/nsf06308/

• Other data from the National Science Foundation can be obtained from the Division of Science Resource Statistics website: http://www.nsf.gov/statistics/

• NSF’s most recent Science and Engineering Indicators report is available: http://www.nsf.gov/statistics/seind06/
Participating Teams

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