The APS 2007 Meeting on Gender Equity in Physics

American Physical Society
March 13, 2008
Arthur Bienenstock
Fundamental Goal of the Meeting

• To increase the number of women physicists significantly by:
  – Assessing the current status of women in physics and gender-related issues
  – Generating recommendations of best practices to attract, hire, retain and increase women faculty and scientists in physics
  – Generating recommendations of best practices to recruit, retain, mentor and educate students that represent the next generation
Some Meeting Particulars

- May 6-8, 2007 – American Center for Physics
- Organizer – Committee on the Status of Women in Physics (CSWP)
- Chairs
  - Norah Berrah – CSWP chair
  - Arthur Bienenstock – then APS President-elect
- Funding
  - Department of Energy
  - National Science Foundation
Some Meeting Particulars - 2

• Attendees
  – 50 chairs of research university physics departments
  – 14 national laboratory managers
  – DOE and NSF staff
  – APS staff

• Why Bienenstock?
  – OSTP experience indicates that we must increase participation of women and under-represented minorities in S&T
  – Introductory talk
Scientific and Technological Workforce
- View From OSTP – 1997-8 - 1

• Perception that science & technology very important to economy
  – Over 50% of productivity increase over past half century ascribed to science and technology

• Very low unemployment rate

• Statements that unavailability of science and technology workers is limiting economic growth

• Requests for increases in H-1B visas

• Must increase productivity to maintain standard of living as population ages and ratio of workers to retirees declines
Figure 1-3.
Percent of 22 Year Olds Earning Science & Engineering Degrees - 1995

- African-Americans - 5.7
- Asians - 21.6
- Hispanic - 4.8
- non-Hispanic White Females - 11.8
- non-Hispanic White Males - 13.8
Projections of Future Situation

• If participation rates of all the groups remain the same and demographic projections are correct,

• then fraction of workforce that is ST&E will decrease significantly at time when increase is likely to be needed.
Calculated Fraction of 22 Year Olds Receiving Bachelors Degrees in Science & Engineering if Award Rates of Various Groups Remain Constant

Figure 1-4.
There has been progress

Figure 1-14. Earned BS/BA degrees in ST&E fields, by Race/Ethnicity, 1977-1
(U.S. citizens and permanent residents)
Bill Gates Quote in Today's New York Times

• "The shortage of scientists and engineers is so acute that we must do both: reform our education system and our immigration policies."
US Women in Physics

www.aps.org
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Overall | 6    | 8    | 10   |

Recruiting Female Students

• Actively recruit physics majors
  – Inform them of broad B.S. and M.S. opportunities
  – Only 1 in 7 physics B.S. holders go on to PhD
    • Many other important functions in society
• Design physics major that start in sophomore year
• Encourage undergrads to work in labs.
• Design major that includes physics education courses
  – Terrible shortage of credentialed high school physics teachers
• Chairs should hold meetings with women students to assess environment for them.
Building A Respectful Environment

• Ensure that all policies (e.g., hiring, tenure, promotion, harassment, space allocation, teaching assignments) are transparent and easily available

• Ensure that harassment policies are clear, equitable and enforced uniformly

• Develop policies that support a work/life balance
  – Dependent care leaves
  – Don't schedule meetings late in the day
Recruiting Practices

• Actively recruit women
  – Keep track of women in the pipeline
  – Make sure they know you want them to apply
• Advertise broadly
• Invite more women to interview
• Be creative regarding dual career families
  – Women physicists are much more likely to marry scientists than are men
Female Retention

- Provide new faculty with more than one mentor
- Train mentors
- Stopping the tenure clock for family leave
- Nominate women for small and large awards
Action Items for Funding Agencies

Topics

• Building a Diverse Community
• Improving the Grant Process
  – Early Funding
  – Grant Structure and the Proposal Process
  – Proposal Review
• Integrating Family Care
• Outreach/Pipeline Building
Bienenstock Comment

• The recommendations w.r. faculty and students would make good sense even if gender were not an issue. They are good management practices.