



A Global Look at Women's Leadership in Biotechnology Research

NSF-EU Workshop Summary

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The US–EC Task Force on Biotechnology Research

- Established 1990
 - ◆ Operates under Administrative Arrangement between the President's Science Advisor and the Commissioner for Science and Research of the European Commission
- Purpose
 - ◆ To increase mutual understanding of US and EC programmes and activities related to biotechnology research.
 - ◆ To serve as a forum for information exchange and planning of cooperative activities.

The EC-US Task Force on Biotechnology Research

- Representatives from US Federal Funding Agencies (NSF, NIH, DOE, USDA, EPA ...) and OSTP
- Representatives from the European Commission, Research Directorate General and Joint Research Centre.
- http://ec.europa.eu/research/biotechnology/ec-us/workshop_en.html

Workshop Agenda

San Francisco June 23-24, 2009

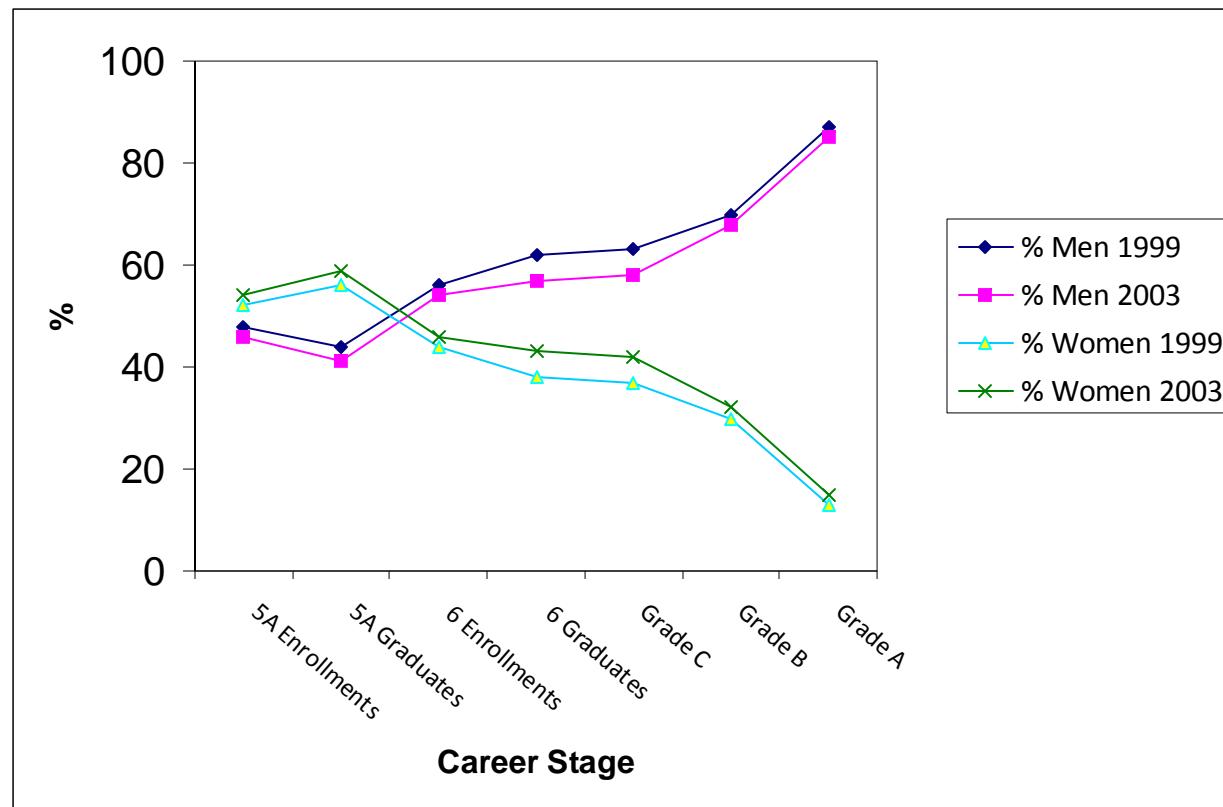
- Day 1
 - ◆ Introductions and Welcome
 - ◆ Session 1: Setting the Stage
 - ◆ Session 2: Women in Academic Biosciences
 - ◆ Session 3: Women in Biotechnology Industry
 - ◆ Session 4: Women as Biotechnology Entrepreneurs
- Day 2
 - ◆ Session 5: Globalisation in Biotechnology Research and Women's Careers
 - ◆ Session 6: EC-US Task Force: Where do we go from here?

Importance of Gender Equity

- Global Challenges
 - ◆ Climate Change
 - ◆ Life Style Diseases
 - ◆ Feeding and Fuelling 9 billion people
- Needed: Research, Talent and Leadership
- Women's talent and leadership potential are underexploited

Adapted from slides of Lene Lange, Dean of Research, Aalborg University, AAU, Denmark

Scissors Diagram: Proportion of Men and Women at Different Stages of a Typical Academic Career, EU25



Eurostat Education Data
Presented by Andrew Collins. University of Oslo, Norway

Factors for Success

- Appropriate training
 - ◆ Strong scientific base
 - Advantage of PhD training
 - ◆ How to ask questions
 - ◆ Identify important Questions
 - ◆ Understanding of Business
 - MBA
 - Experience
- Support
 - ◆ Environment
 - ◆ Network
 - ◆ Mentors
- Personal Traits
 - ◆ Persistence
 - ◆ Tenacity
 - ◆ Flexibility
 - ◆ Self-confidence

Importance of National Policies to Proportion of Women in Academic Positions

- Good policy, good results: legislation favoring women, childcare provision (Scandinavia)
- Good intention, weak results: gender equality legislation poorly implemented; poor childcare provision; low representation on boards; tradition (German-speaking countries, UK, France, Slovenia)
- Countries with recently introduced good policies: poor childcare facilities compensated by strong family support (Mediterranean countries, notably Spain)
- Weak policies, weak commitment: good childcare; very low gender awareness (among women as well as men) (Most ex-communist countries)

Presented by Andrew Collins. University of Oslo, Norway

Capacity Building: Policies and Programs

- Understand the current situation
- Build programs to increase participation
 - ◆ Review current initiatives for their
 - Appropriateness
 - Successes and outputs to implement interventions
 - Create and maintain a database of women in biosciences
 - ◆ Girls and young women
 - Vertically integrate initiatives into high school level
 - Provide gender-specific performance incentives
 - Support women role models and mentoring schemes
 - ◆ The workplace
 - Retain women in bioscience jobs via professional development, career advancement, networking

Career systems and personal referral networks

- Career success is linked to one's ability to generate a dense referral network
 - ◆ Women may generate less useful networks (Cynthia Robins-Roth has suggested this for biotech)
- Institutions structuring career systems strongly impact how personal networks are generated
 - ◆ Within the hierarchical German system it is difficult for more junior people to develop dense networks – impacting their ability to move into more senior positions
 - ◆ More frequent career moves within the US may help generate more 'useful' networks
 - Research should examine the position of women scientists and managers in such networks

Research Findings from Norway

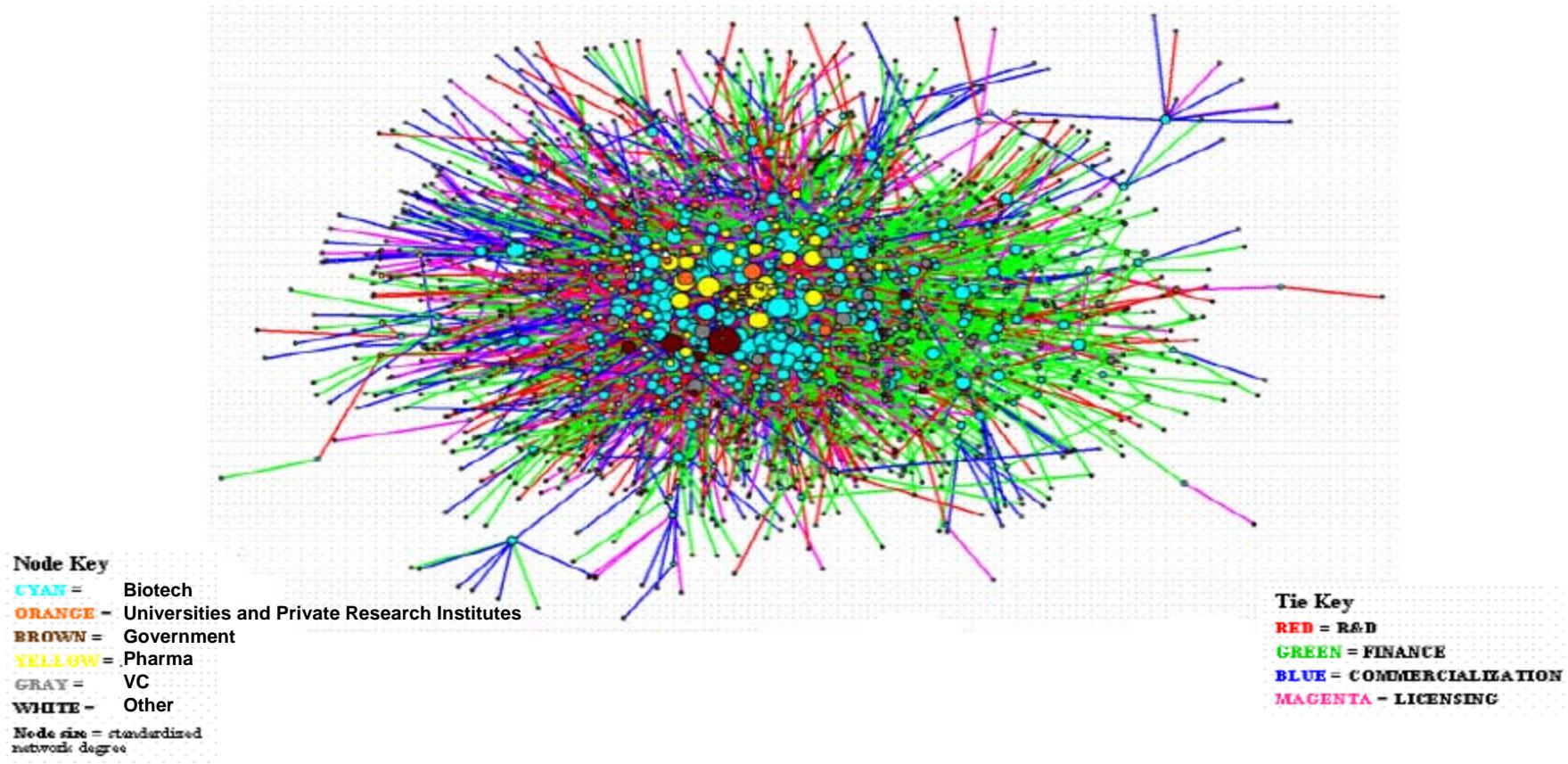
- Women researchers are less well integrated
 - ◆ Participate less than men in formal and informal networks
 - ◆ Less likely to take part in international collaborations
- Women publish less than men of equal position
- Women are not disadvantaged in receipt of national research grants (data from the Norwegian Research Council)
 - ◆ However, tend to be in areas of research that are less well funded, e.g. humanities and social sciences, rather than in technical areas where men dominate.
- Differences in salaries for men and women in equivalent positions are negligible.

Successful Practices in Norway

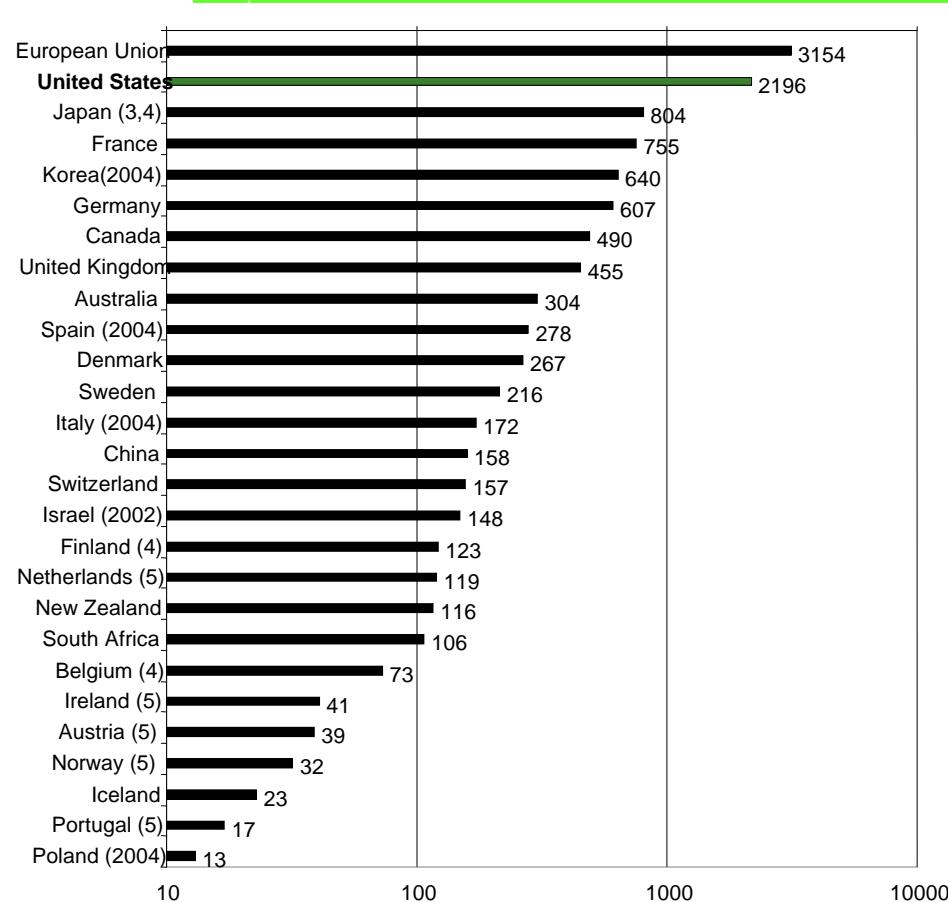
- Active Recruitment: seeking out suitably qualified female candidates for a post in recognition that women are not as thoroughly networked as men, do not hear about opportunities, and are more difficult to trace. This policy has been carried out successfully at the University in Trondheim.
- Mentoring programs – one-to-one links between professor (male or female) and post-doc to help to meet the challenges.
- An appointment committee must have at least one female (out of 3).

Life science innovation today is so interwoven that it is difficult to delineate government, academic from commercial activities

Map of Interactions in life sciences. Walter W. Powell AJS Volume 110 Number 4 (January 2005): 1132–205



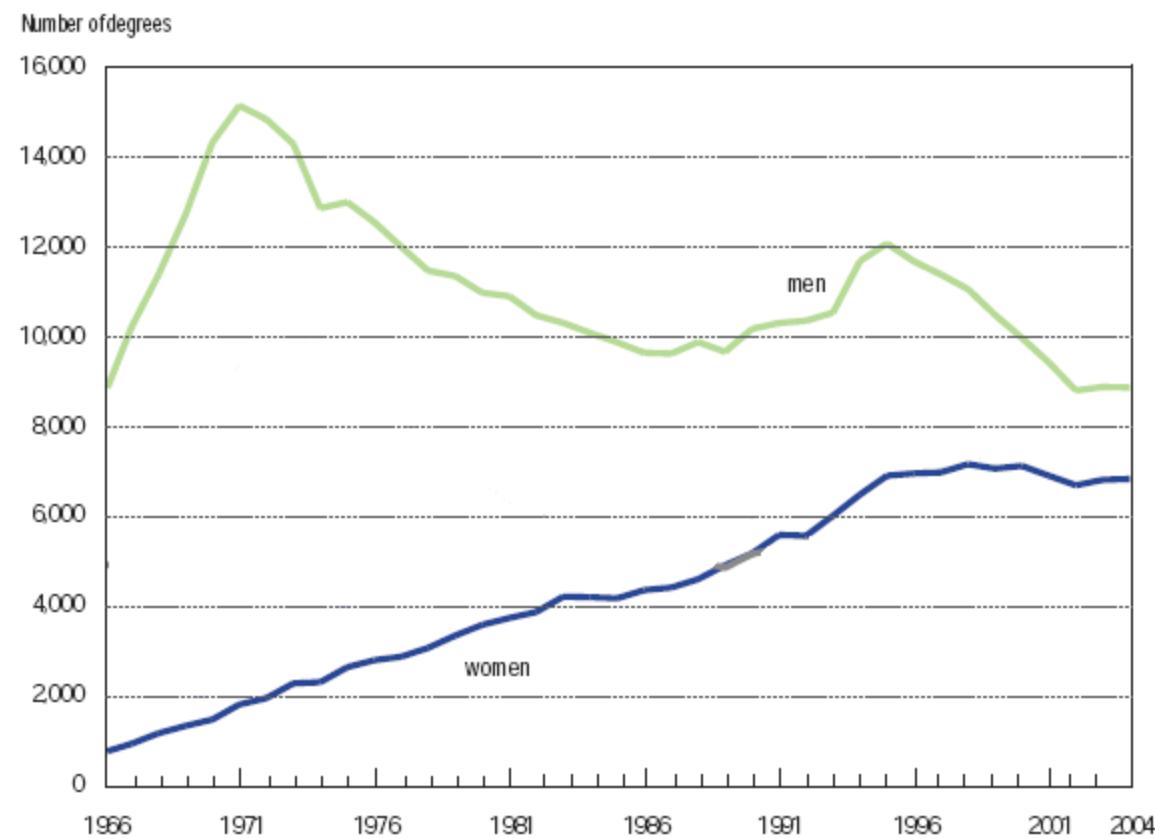
Increased International Competition: In 2001 the US lost to the EU in number of biomed companies



Number of biotechnology companies in distinct geographic areas (Van Beuzekom and Arundel 2006; OECD biotechnology statistics).

Hermans, Löffler, Stern (2008)

S&E Doctoral Degrees Awarded



SOURCE: National Science Foundation, Division of Science Resources Statistics, Survey of Earned Doctorates, 1966-2004.

Recommendations

- Collect and disseminate the data
- Success requires
 - ◆ Policies that promote good practice
 - ◆ Buy-in at highest levels
 - ◆ Formal and informal mechanisms to provide women with “rules of the game”
 - ◆ Accountability

Action Items

- *Establish new prize*: Biotech Diversity Leadership award (occasion: 20th anniversary).
- *Establish*: Mentorship circle; leadership training; network for entrepreneurs
- *Publish*: Letter to the editor about need for data, research and evidence based statistics.
- *Revitalize the gender discussion* by placing in context of what needs to be done to address the major global challenges!

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