THE WIN-WIN OF WOMEN IN SCIENCE: EXCELLENCE AND EQUILIBRIUM

The Exemplars Symposium
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STILL FEW WOMEN AT THE TOP

Gains for women come extremely slowly in the executive ranks of the chemical industry

ALEXANDER H. TULLO, C&EN NORTHEAST NEWS BUREAU
18 C&EN / JULY 2, 2001

THE CHEMICAL INDUSTRY IN THE U.S. isn't shy about taking credit for ways that it has enhanced part-time careers. It talks about products that prevent injury, programs that make industry safer to work in, and an increasing number of initiatives that encourage women to stay with their careers.

BAD PRESS

ATHENA UNBOUND

THE ADVANCEMENT OF WOMEN IN SCIENCE AND TECHNOLOGY

HENRY ETZKOWITZ, CAROL KEMELGOR
AND BRIAN UZZI

MARRIAGE AND FAMILY

Marriage and children often affect women's careers in academia, science, and business. Having a child during graduate school, marriage at the point of seeking a job, and pregnancy preelection to tenure. In addition, we found some discrimination of marriage during the graduate student career. Women, but not men, are sometimes thought to be less than serious about their career if they do not stay single while in graduate school. A female graduate student recalled:

When I first interviewed to come here, I was single. On my last day of working in this department I had an engagement ring...
The win-win potential for motherhood and science

Women wishing to combine children with a research career should not be seen as taking a backstep but as bolstering both activities, argues Marlene Belfort.

Discrimination at any level cannot be tolerated. The tenure time-line needs to be adjusted for women with young children to relieve some of the pressures created by the ticking of the biological clock and the tenure clock in the same compressed time-frame. There must be more tolerance of unusual schedules, of non-traditional career paths, of exit and re-entry. Finally, concessions need to be made so that the fathers of our children can pitch in without sacrificing their careers.
GOOD NEWS, BAD NEWS, GOOD NEWS
Survival Analysis of Faculty Retention in Science and Engineering by Gender

Deborah Kaminski\textsuperscript{1}\textsuperscript{*} and Cheryl Geisler\textsuperscript{2}

Individual assistant professors (a total of 2966 faculty) hired in science and engineering since 1990 at 14 United States universities were tracked from time of hire to time of departure by using publicly available catalogs and bulletins. Results of survival analysis showed that the chance that any given faculty member will be retained over time is less than 50%; the median time to departure is 10.9 years. Of all those who enter as assistant professors, 64.2\% were promoted to associate professor at the same institution. Overall, men and women are retained and promoted at the same rate. In mathematics, however, faculty leave significantly earlier than other disciplines, and women leave significantly sooner than men, 4.45 years compared with 7.33 years.
MUTUALLY REINFORCING ROLES OF MOTHERHOOD AND SCIENCE

• Developing common skills
  – Resourcefulness and problem-solving
  – Nurturing (children, students, post-docs)
  – Multi-tasking and juggling
  – Cooking up experiments and designing meals

• Equilibrium
  – Work/home life
  – Ups/downs
  – Thrills/spills
  – Outside opportunities/home comforts

Belfort, Current Biology 2001
Belfort, ASM News 2003
WHAT IT TAKES

- Adaptability, flexibility
- Boundless reading
- Competence
- Compromises
- Energy, optimism, persistence
- Good fortune
- Passion, commitment, hard work
- Sacrifices (play and $)
- Support - partner, family, institution, community - COLLABORATION
COLLABORATION
BELFORT SCIENTIFIC COLLABORATIONS
MAP OF SCIENTIFIC COLLABORATION BETWEEN RESEARCHERS
Group Genius

The Creative Power of Collaboration

Keith Sawyer

Author of Explaining Creativity

GROUPTHINK

The brainstorming myth.

BY JONAH LEHRER

THE NEW YORKER, JANUARY 30, 2012
Emotional Abyss; Physical Cause?

By MARLENE BELFORT
Published: October 30, 2007
WHY IT’ S SO DIFFICULT - ACADEMIA

• Dependent on outside funding
• Geographic constraints
• Long/unpredictable hours
• Narrow choice of employers
• Relatively low income
WHY IT’ S SO DIFFICULT - ACADEMIA

BUT.....

• Independence
• Freedom of thought
• Freedom of time
• Ownership
COMMON ELEMENTS FOR SUCCESS

• Comfort with conformity and non-conformity
• Education in supportive environment (eg. Nuturing quantitative skills, Womens ‘schools)
• Minimizing obstacles
• Exemplars and confidence-builders
NOBEL PRIZE AWARDED TO WOMEN

- The Nobel Prize has been awarded to women 44 times between 1901 and 2012.

- 16 of female Nobel Laureates are in science (3% of total)
1903 - Marie Curie – Radiation phenomena
1935 - Irene Joliot-Curie – New radioactive elements
1977 - Rosalyn Yallow – Radioimmunoassays
1983 - Barbara McClintock – Mobile genetic elements
1986 - Rita Levi-Montalcini – Growth factors
1995 - Christiane Nusslein-Volhard – Embryonic development
2008 - Francoise Barre-Sinoussi – Human immunodeficiency virus
2009 - Elizabeth Blackburn, Carol Greider – Chromosome ends, telomeres
MOLECULAR (LAB) BABIES
BIOLOGICAL BABIES
THE MEN WHO SUPPORT US
THE MEN WHO SUPPORT US

UNIVERSITY AT ALBANY
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