THEORETICAL LENS ON INEQUALITIES IN SCIENCE: SOCIAL-ORGANIZATIONAL PERSPECTIVE

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Workshop on Women, Minorities, and Interdisciplinarity:
Transforming the Research Enterprise
Columbia University
12 November 2007

I. Focus – and Rationale

A. Focus:

→ **The study of academic and scientific organizations and occupations**

Ways in which participation and performance reflect and are affected by social and organizational features of science and academia.

B. Rationale:

1. Science is a critical institution, linked to spheres of power.

2. Science is a key site for the study of social inequalities (Fox, 1999).

3. Science is a strategic site for addressing organizational context.
   Organizational context is important in explaining attainments in education and the workforce, broadly.

   → But it is especially important in science (Fox, 1983 → 2007).

II. What This Means – in Current Projects

A. NSF ADVANCE Research Program

1. **Approach** → participation, performance, and advancement of women –and men—in academic science and engineering are organizational issues, subject to organizational transformation.

2. **Identifies factors** that operate in:
   - Teaching and research
   - Work settings
   - Processes of evaluation
   - Household/family-work arrangements

3. **Representative Finding:**
   - The means for promotion to full, compared to associate professor are less clear, less specified, less known–and reported to be more "variable" for candidates under consideration (Fox and Colatrella, 2006).

B. Study of Undergraduate Programs for Women in Science and Engineering – in collaboration with G. Sonnert.

1. **Focus** → types, characteristics, and outcomes associated with programs.

2. **Approach** → Programs as a strategic research site for investigating organizational definitions of issues and problems, and solutions, for women as an underrepresented group in science/engineering.

   Among the aims: Understand "what works" with programs – that is, characteristics of programs that are associated with most and least successful institutional outcomes in undergraduate degrees awarded to women.

3. **Representative Finding:**
   - Programs rooted in "organizational/structural-centered," as opposed to "individual-student-centered," perspectives are associated with the most positive outcomes in undergraduate degrees awarded to women in science/engineering (Fox, Sonnert, and Adkins, 2007).

C. Study of Faculty in Computing

1. Approach →

- Factors faced by women, compared to men, faculty in computing within (9) research universities.

- Factors associated with perceived "chances for promotion" to full professor among women associate professors in computing across US and Canadian universities.

2. Representative Finding:

Women's reported "chances for promotion" are significantly linked with reported characteristics of home department, specifically:

→ clarity in criteria for tenure and promotion, and a cluster of features of departmental "climate."

III. Implications

- The challenge and opportunity are to understand and address organizational practices and processes –for examples: patterns of communication, collaboration, and exchange; evaluative schemes; distribution of resources and rewards.

- Solutions for equity lie in the settings, structures, and compositions of the places in which people are educated and in which they work.

  → Just as organizations are structured, so they can be re-structured (Fox, 1996 → 2008).