



## ENHANCE

Enhancing the participation of women scientists and engineers in the chemical industry

**Goal:** Using the chemical industry, the leading employer of scientists and engineers in the U.S., as the model sector:

- Document and analyze the career paths and experiences of women formally trained in science and engineering in order to identify factors that impede or facilitate their careers.
- Identify and share effective corporate practices, as identified by women and management, in the recruitment, retention, and promotion of women formally trained in science and engineering.

**Background:** Science and engineering (S&E) fields are considered crucial to U.S. economic growth and are expanding rapidly. Demographic trends indicate that women and minorities represent the greatest increases in workforce participation; however, the continued under-representation of women (including minority women) in S&E fields is well documented. While much of the attention to women's relative absence from S&E fields has focused on women in academe, very little is known about women in other S&E intensive settings, especially industry.

Because the \$450 billion U.S. chemical industry is the largest employer of scientists and engineers, individual companies and the industry as a whole need to:

- Extract the greatest value and contribution from women formally trained as scientists and engineers
- Define where women formally trained as scientists and engineers stand compared with men in:
  - Career progression within technical and other professional roles
  - Job types
  - The contextual factors and workplace climate they experience
  - Retention and promotion
- Develop and implement effective industry-wide programs to support the retention of women and the promotion of women into leadership positions in both technical and non-technical roles.

**Methodology:** To accomplish the goals, three primary studies and one secondary study are planned.

### Primary Studies:

Study 1: (A) A quantitative web-based survey to determine the professional experiences of women formally trained as scientists and engineers regarding:

- Job Satisfaction
- Organization/Company Support
- Home-Work Interface
- Job Stress and Coping
- Workplace Climate
- Mentoring Experiences
- Advancement and Leadership Opportunities and Challenges
- Company Mechanisms to Facilitate Career Success

(B) A follow-up qualitative interview study of selected survey participants to further explicate the career trajectories and experiences of women formally trained as scientists and engineers.

Study 2: (A) A quantitative web-based survey to determine management perceptions and practices regarding support for the career development of women formally trained as scientists and engineers.

(B) A follow-up qualitative interview study to further explicate the perceptions of managers regarding the career progression of women formally trained as scientists and engineers.

Study 3: A compilation of current "best practices" as reported by women and management in Studies 1 and 2 (and supplemented by a review of the literature) regarding programs, initiatives, and

methods employed by companies in the chemical industry to support the career progression of women formally trained as scientists and engineers.

Secondary Study: Documentation of company patterns of the career progression of women and men formally trained as scientists and engineers.

To assist and advise us with the planning, design, and implementation of the various studies, we have established the ENHANCE Development and Implementation Oversight Committee. Committee members all have extensive chemical industry background and represent a cross-section of levels and functions: marketing, sales, technology, HR, and manufacturing. Names of committee members are available upon request.

#### **How You Can Help:**

- Have your company participate in the three primary studies, and (if possible) in the secondary study.
- Encourage women in your company who were formally trained in science and engineering (regardless of current job function) to complete the quantitative survey and participate in follow-up qualitative interviews, if invited.
- Designate appropriate senior level managers (VP, director level) representing multiple pertinent functions (e.g., business, technical, manufacturing, HR) to complete the quantitative surveys and participate in follow-up qualitative interviews if invited.
- Encourage your colleagues in other companies to participate in order to help ensure a rich and comprehensive database.

#### **Projected Timeline:**

##### Primary Studies:

- Study 1A: Quantitative studies for women – Start: beginning Q4 2003; End: end Q4 2003.
- Study 2A: Quantitative studies for management – Start: beginning Q1 2004; End: end Q1 2004.
- Studies 1B & 2B: Qualitative studies for both women and management – Start: mid to end Q1 2004; End: end Q2, beginning Q3 2004.
- Study 3: “Best practices” study (based on information provided in first two studies; no additional information required from companies) -- End: Q1 2005.

##### Secondary Study:

- Start: end of Q3 of 2004; End: end Q4 2004.

#### **Investigators and Funding:**

Research funding is provided by the National Science Foundation. Research will be conducted by project leaders Dr. Ruth E. Fassinger, University of Maryland and Dr. Judith C. Giordan, Visions in Education, Inc. and a research team of doctoral students at the University of Maryland.

**PLEASE** participate in the **anonymous survey** and encourage your colleagues to do so as well!

The survey takes 30-40 minutes to complete and can be done online from your home or office -- just place the URL: <http://enhance.technopsychology.com/survey.html> in your browser window. Your responses are important! Through you, we can better understand the working lives of women in the chemical industry and help to create satisfying, rewarding workplaces for women.

Or contact us at: [Project-Enhance@umd.edu](mailto:Project-Enhance@umd.edu)