

ADVANCE

AT THE EARTH INSTITUTE AT COLUMBIA UNIVERSITY



A Plan For Institutional Change

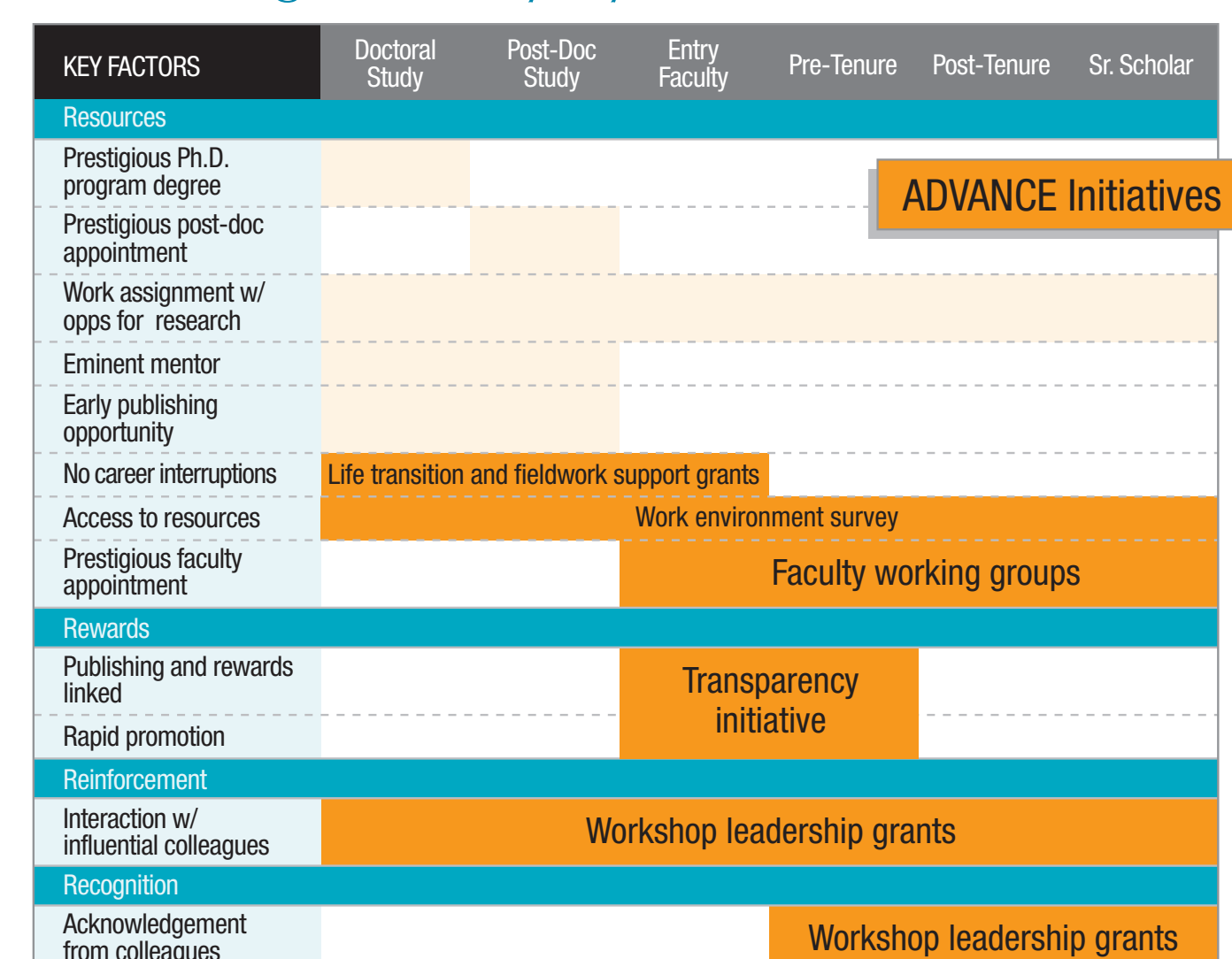
The ADVANCE Program

Funded by a five-year \$4.2 million NSF ADVANCE award, the ADVANCE Program at The Earth Institute seeks to transform the way in which women scientists and engineers are recruited, retained, and promoted at Columbia University. The goals of the program are to:

- change the demographics through intelligent hiring practices and by identifying emerging and established women leaders in the Academy;
- provide research support to women scientists and engineers during demanding life transitions;
- enhance mentoring and networking opportunities;
- increase the transparency of promotion procedures and policies; and
- conduct an institutional self-study.

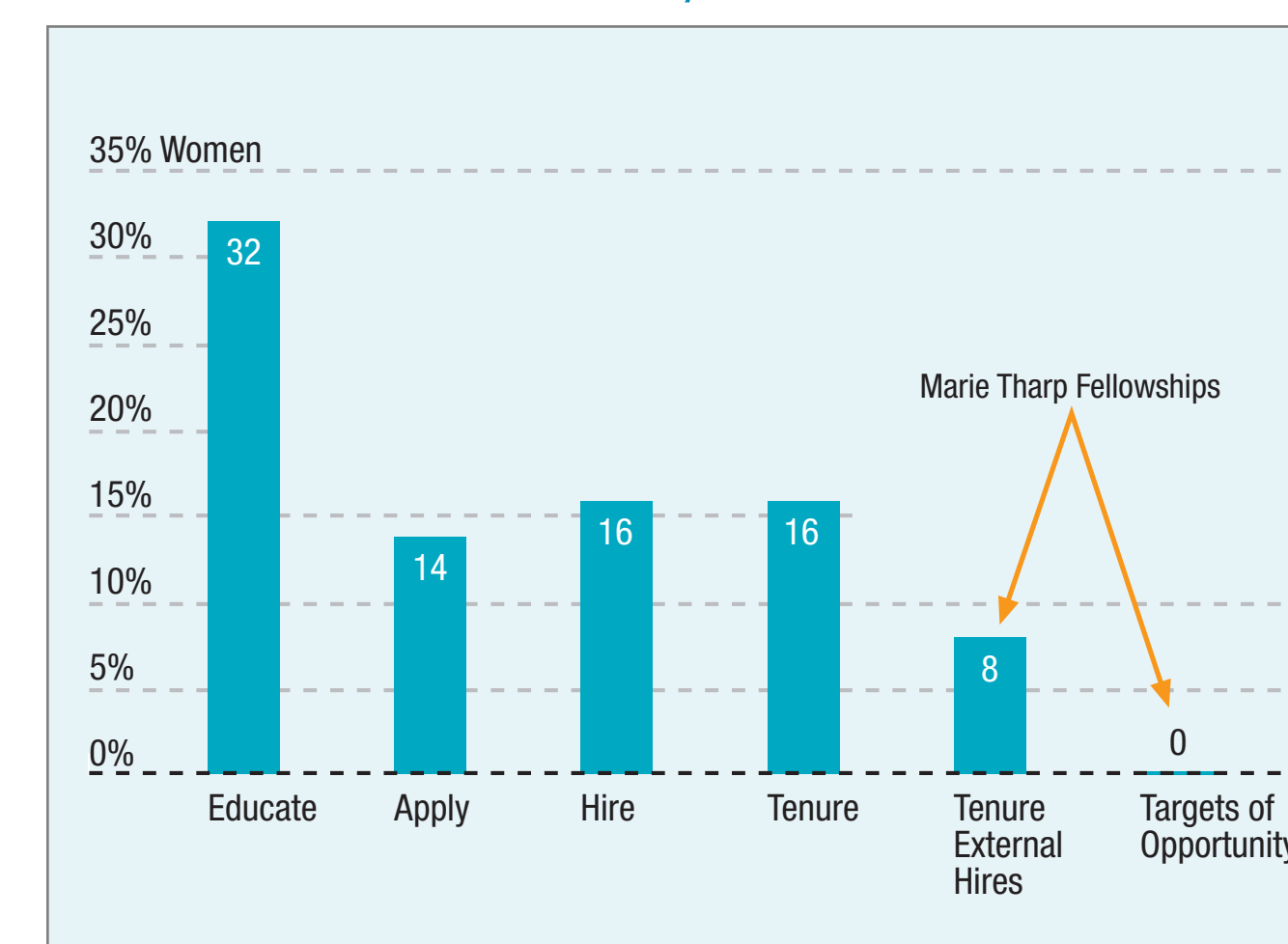
To achieve these goals, the ADVANCE Program is convening senior faculty working groups, administering funding competitions for women scientists and engineers, codifying explicit criteria for advancement and promotion, and conducting a comprehensive survey of the university faculty.

Key Events Associated with Prolific Publishing that Vary by Gender



Source: Creamer, E.G. 1998, *Assessing Faculty Publication Productivity: Issues of Equity*, ASHE-ERIC Higher Education Report Vol 26, No 2.

Women in the Natural Sciences at Columbia University



Source: *The Commission on the Status of Women*, Columbia University, 2001

Principal Investigators

Robin E. Bell
ADVANCE Director & Doherty Senior Research Scientist
robinb@ideo.columbia.edu

Roberta Balstad
Director of the Center for International Earth Science Information Network (CIESIN)
roberta@ciesin.columbia.edu

Mark Cane
G. Unger Vetlesen Professor of Earth and Climate Sciences
mcane@ideo.columbia.edu

John Mutter
Professor of Earth and Environmental Sciences
Deputy Director of the Earth Institute at Columbia University
jmutter@ei.columbia.edu

Stephanie Pfirman
Chair of Environmental Science Department, Barnard College
spfirman@barnard.columbia.edu

Program Coordinator

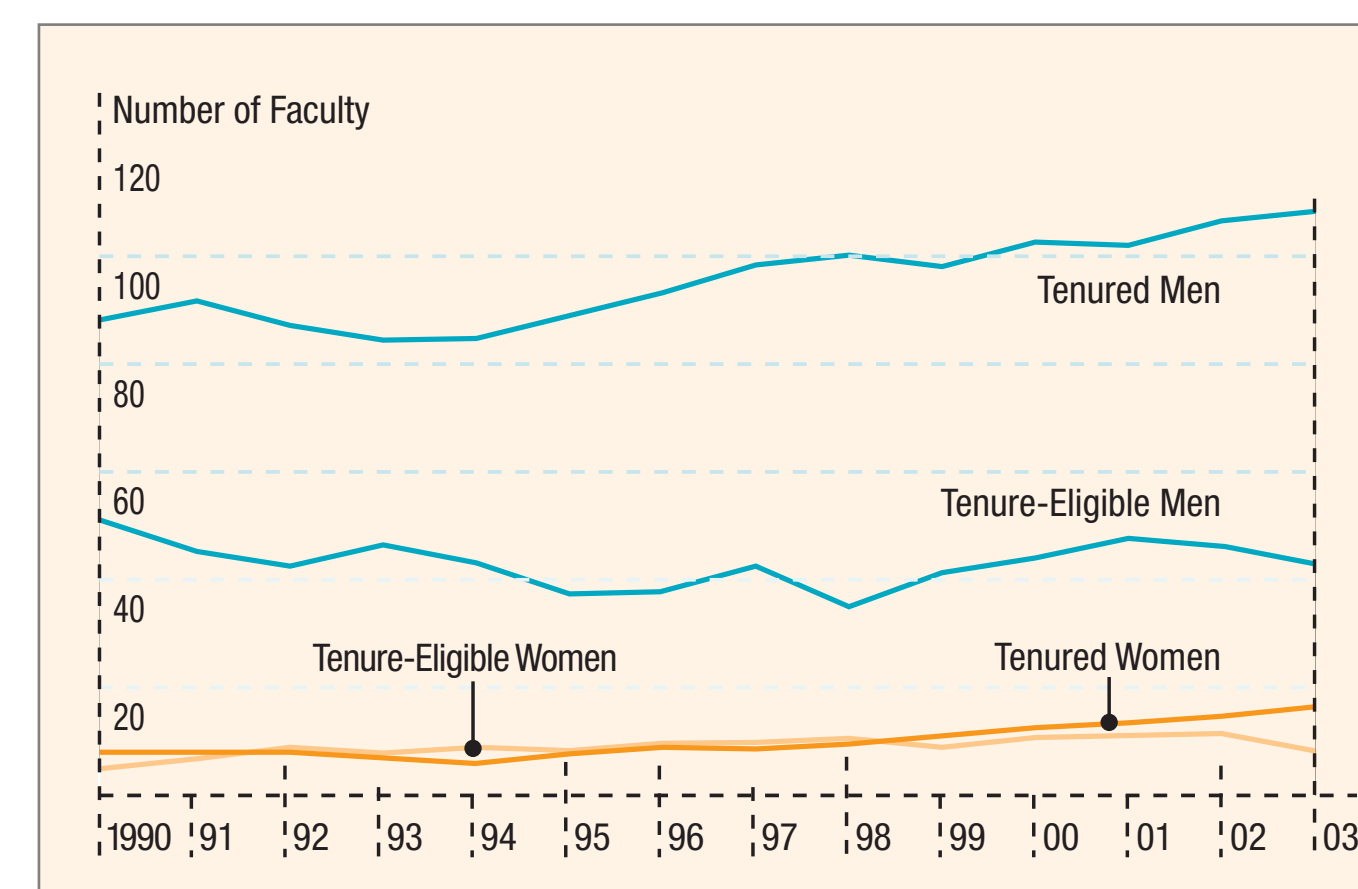
Jennifer Laird
(845) 365-8620
laird@ideo.columbia.edu

Motivation

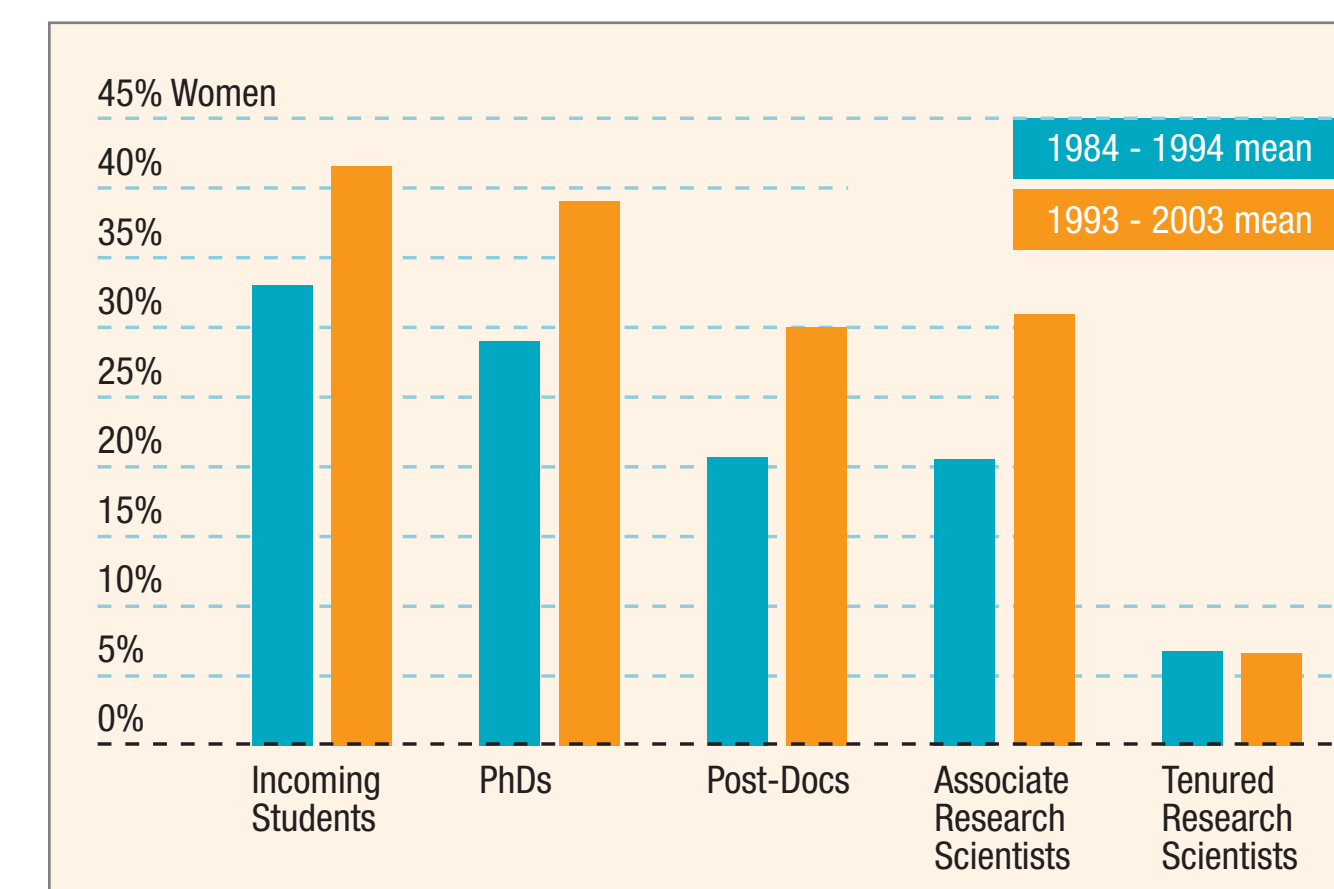
A systematic study of the Graduate School of Arts and Science at Columbia University from 1990 - 2000 revealed a pervasive lack of faculty diversity.¹ Although some departments have recently made considerable progress toward hiring more women, the problem is particularly acute in the natural sciences, and disparities increase as women move up the tenure track.

This situation is not unique to Columbia. A study of doctorate recipients across the country found that from 1979-1995, men had a steady 14 percentage point advantage over women in obtaining faculty positions.² There are many factors that contribute to these trends, but social science experiments have shown that one of the most ubiquitous factors is an unconscious bias that both women and men display toward women.³ Because the bias is small and difficult to detect, the accumulation of it over time can easily go unnoticed.⁴

Gender Disparities in the Natural Sciences at Columbia University



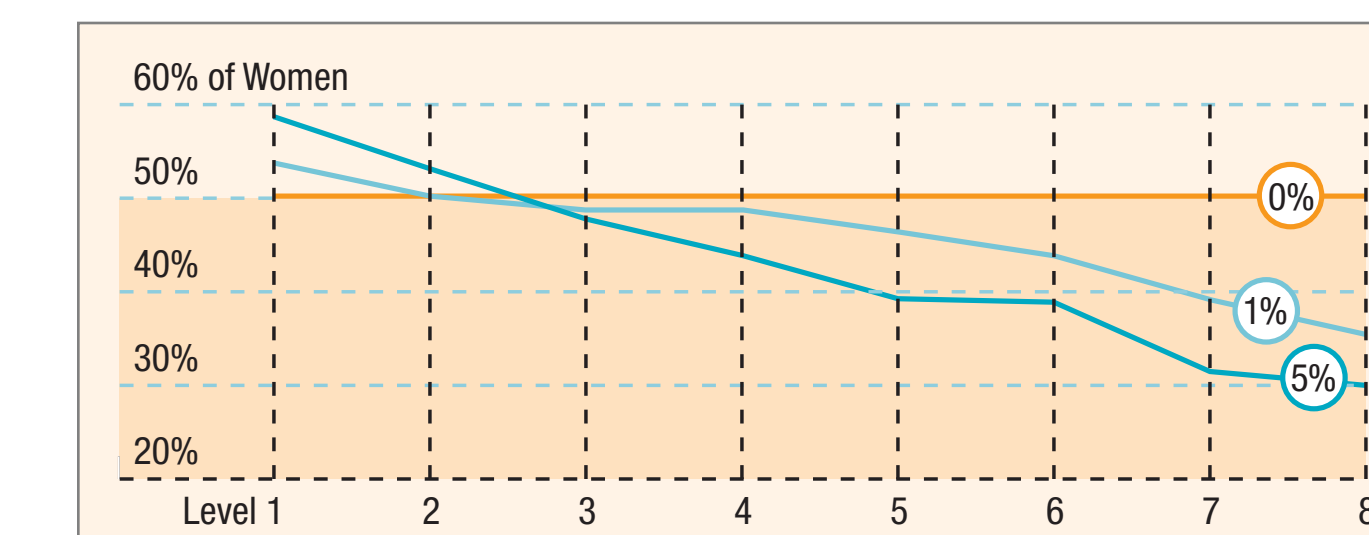
The Pipeline at Lamont-Doherty Earth Observatory



The Accumulation of Small Differences Over Time

Computer simulation modeled a hierarchal community with initial conditions of equal men and women; 1% bias toward promoting men imposed.

Result: A community with a steady state of 65% men at the senior, leadership level.



Source: Martell et. al, *American Psychologist*, 1996