

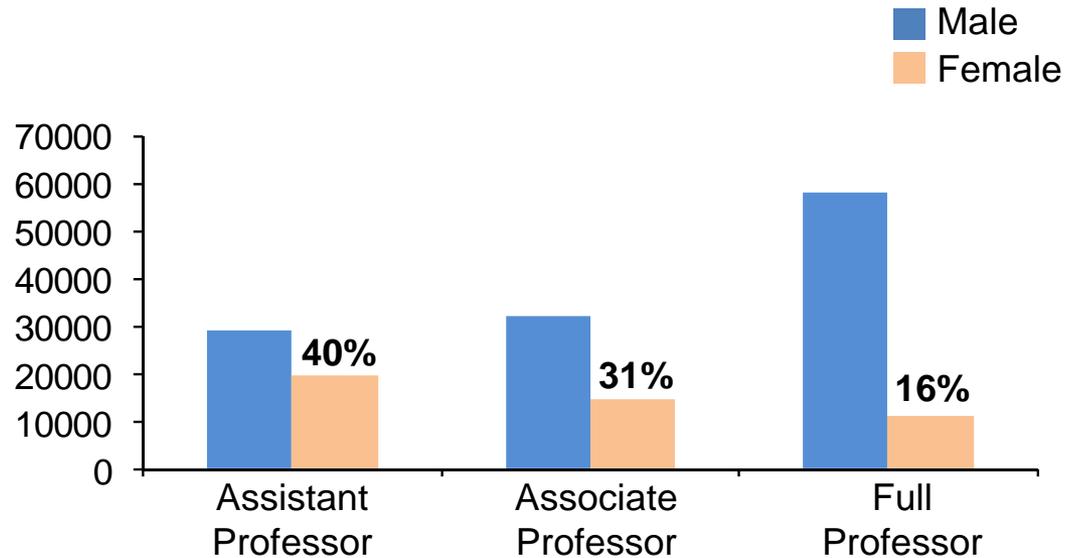
# ADVANCE

INCREASING THE PARTICIPATION AND ADVANCEMENT OF WOMEN  
IN ACADEMIC SCIENCE AND ENGINEERING CAREERS

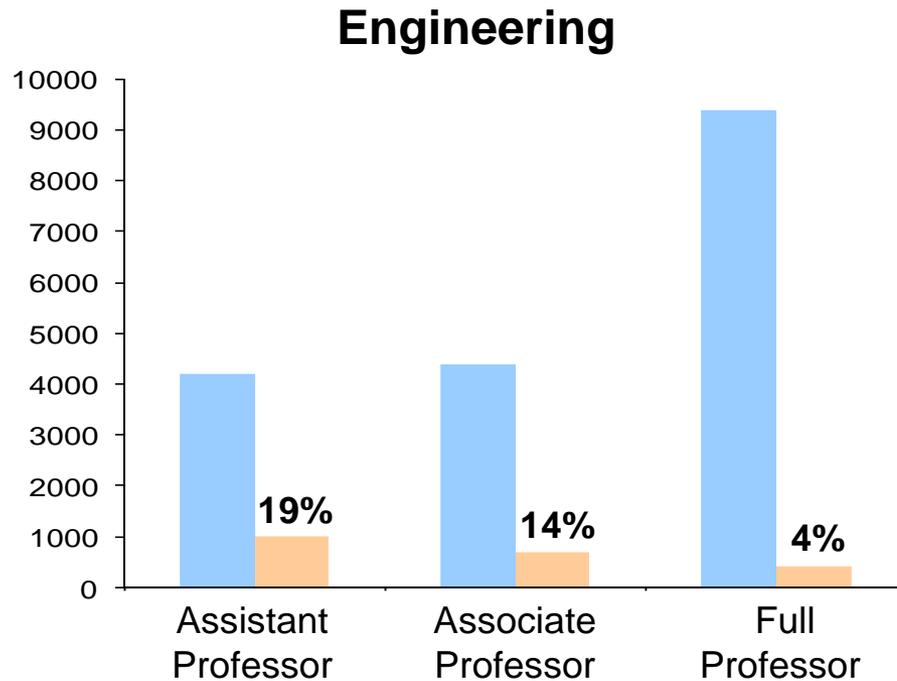
Kelly Mack, PhD  
Program Officer, ADVANCE

# S&E Doctorate Holders at Universities/4 year Colleges

Total Science and Engineering Faculty by Gender



# S&E Faculty by Discipline and Gender



# NSF ADVANCE Program

- ❑ **Program Goal:** Increase the representation and advancement of women at all levels in academic science and engineering careers
- ❑ **Program History**
  - ❑ Initiated at the National Science Foundation in 2001
  - ❑ Over \$130M invested to support various ADVANCE projects
  - ❑ >100 ADVANCE projects funded thus far at institutions of higher education and STEM related not-for-profit organizations in 41 states, the District of Columbia and Puerto Rico

# ADVANCE Characteristics and Criteria

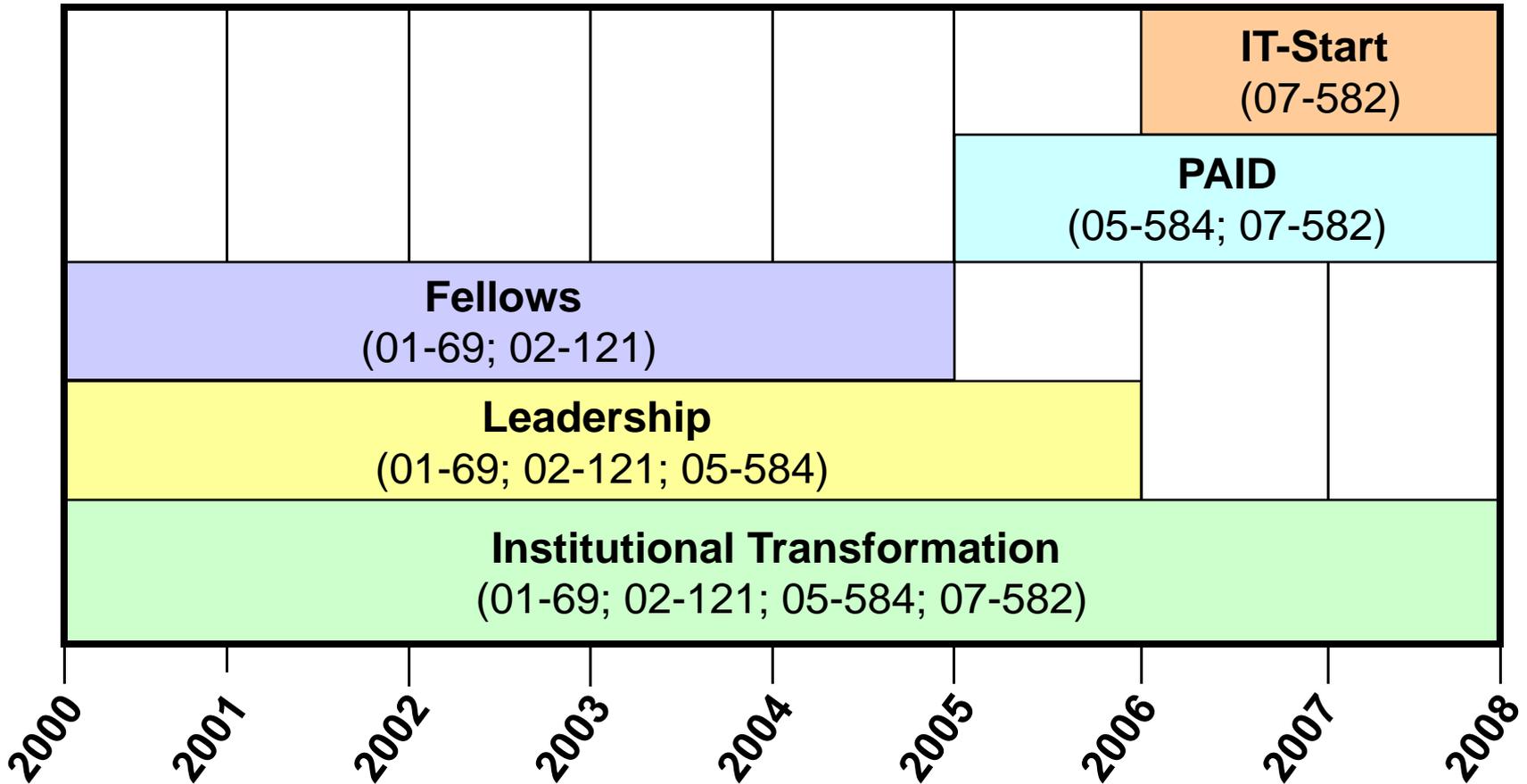
## □ Major Characteristics

- Support new approaches to **improving the climate** for women in U.S. academic institutions and to **facilitate women's advancement** to the highest ranks of academic leadership
- Include **international activities** that directly support the goals of ADVANCE

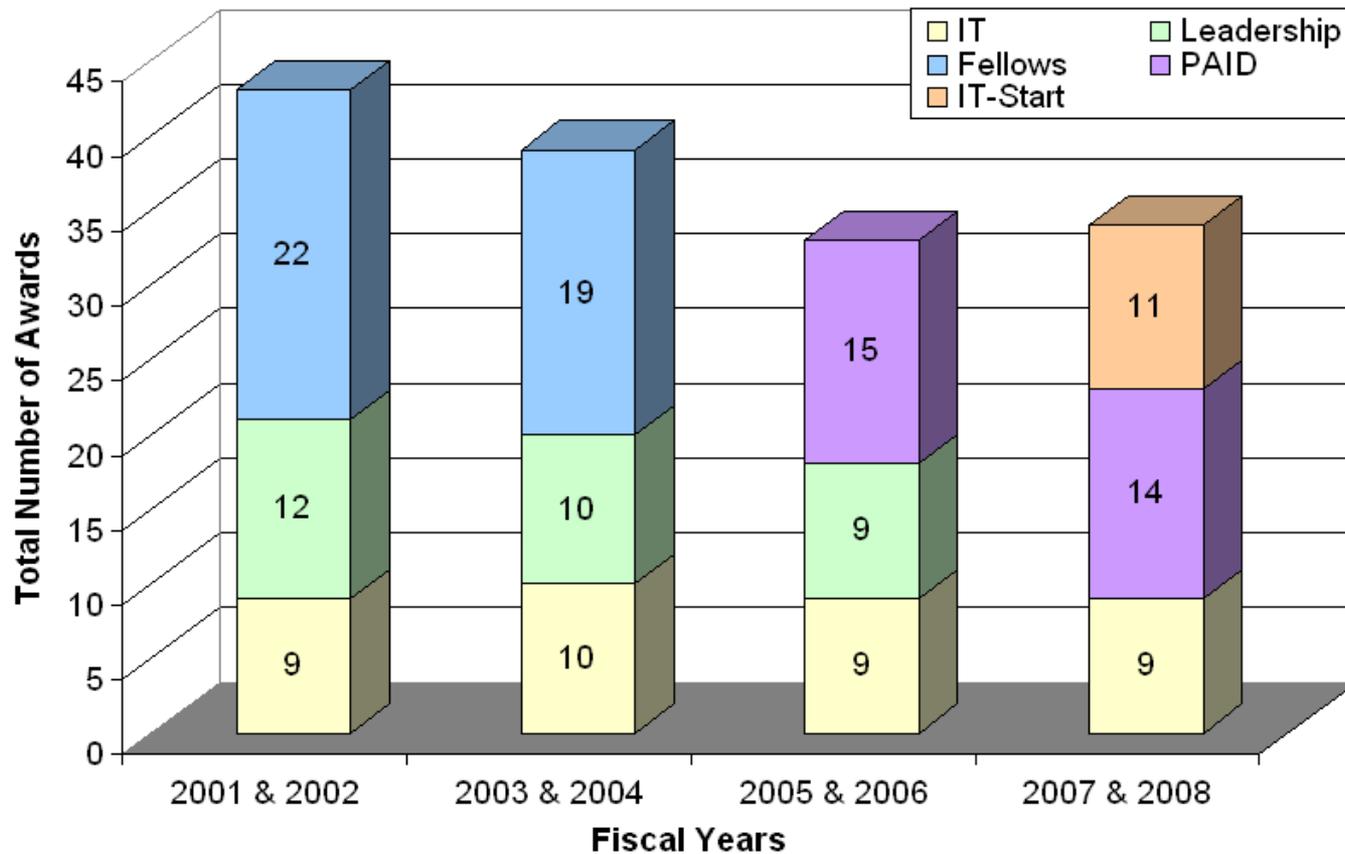
## □ Major Criteria

- Relevant **data** on STEM faculty and institution leadership
- Identification of and commitment to **policy** review, revision and implementation
- Demonstrated commitment of **institutional leadership**
- Commitment to **sustainability**
- Based on conceptual framework grounded in existing literature regarding organizational change and diversity

# ADVANCE Program Evolution



# ADVANCE Awards, 2001-2008



# Current Award Mechanisms

## ▣ Institutional Transformation (IT)

- ▣ Comprehensive, **institution-wide**, projects transform the culture of the institution

## ▣ Institutional Transformation Catalyst (IT-Catalyst)

- ▣ **Planning grants** to support basic work to prepare for transformation

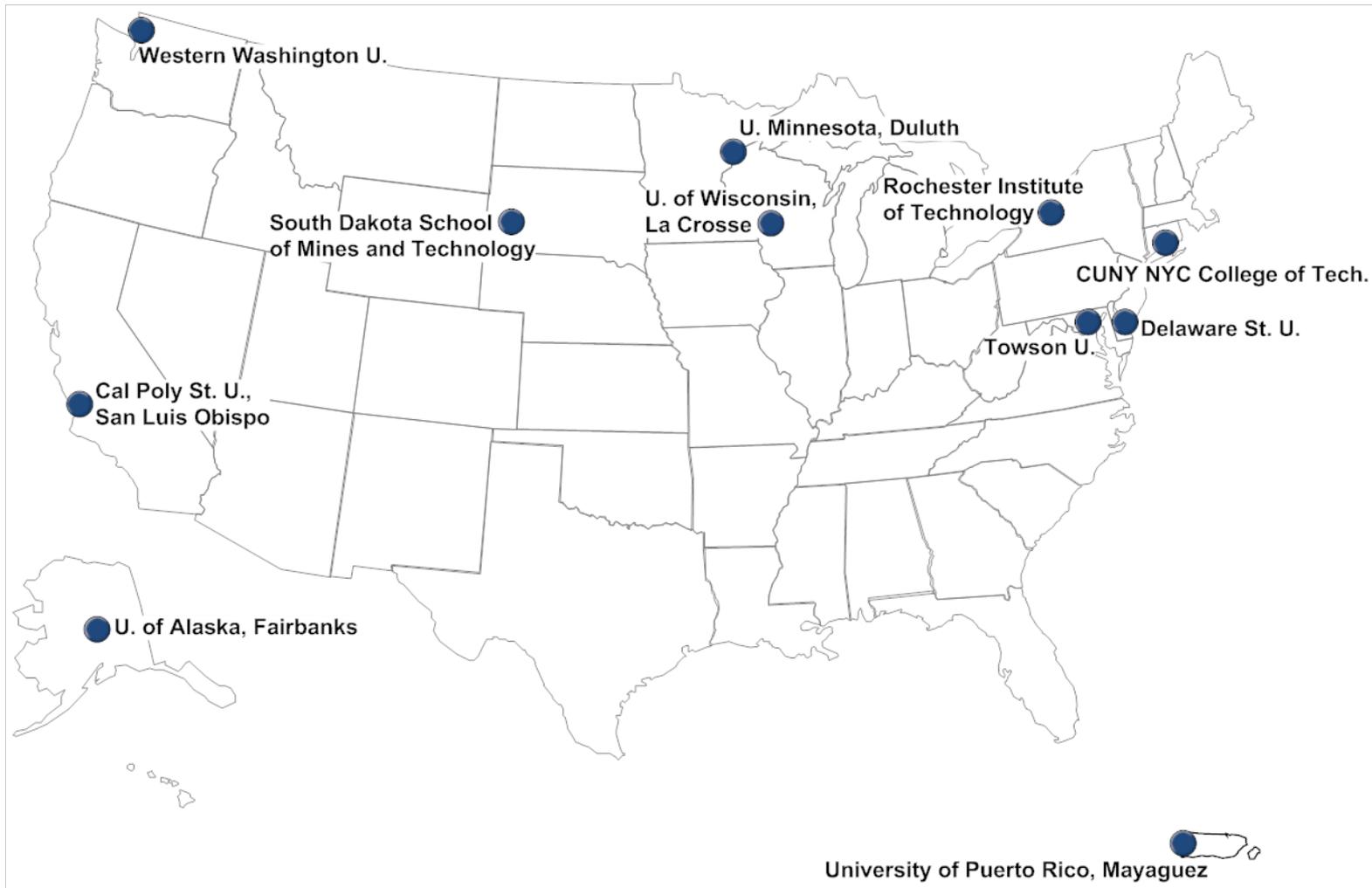
## ▣ Partnerships in Adaptation, Implementation and Dissemination (PAID)

- ▣ Support for **use of existing innovative materials and practices**

# ADVANCE IT - Catalyst

- ❑ Purpose
  - ❑ Planning grants to support basic work to prepare for transformation at institutions with limited resources
  
- ❑ Funding
  - ❑ 2-year project period; \$200,000 maximum for 2 years
  
- ❑ IT Catalyst Project Characteristics
  - ❑ Data collection on faculty, administrators
  - ❑ Awareness building
  - ❑ Policy review
  - ❑ Pilot activity implementation

# ADVANCE IT-Start Grantees 2008 (now IT-Catalyst)



# ADVANCE PAID Awards

## Partnerships in Adaptation, Implementation and Dissemination

### Purpose

- Adaptation and implementation of materials, tools, research, and practices that have been demonstrated to be effective in increasing the participation and advancement of women in STEM academic careers
- Dissemination and diffusion
- Scientific research designed to advance understanding of gender in the STEM academic workforce

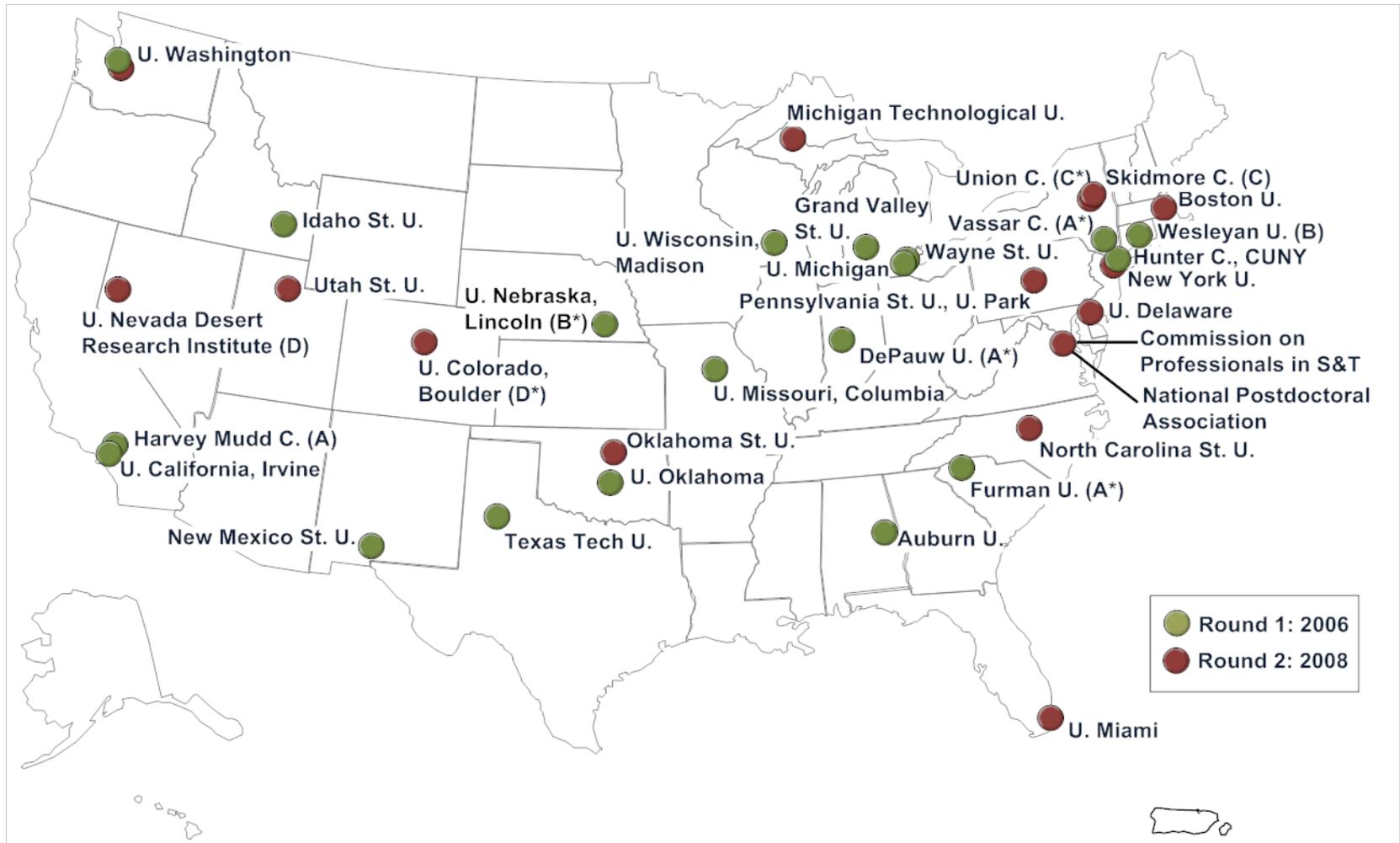
### Funding

- 1 to 5 year projects with variable funding; no limit on funding request

### PAID Project Characteristics

- Workshops
- Leadership Development Programs
- Centralized Resource Centers
- Social Science Research Related to Women in STEM Academics

# PAID Grantees 2006-2008



# ADVANCE IT

## Institutional Transformation

### ❑ Purpose

- ❑ Comprehensive, institution-wide, projects to transform the culture of the university or college

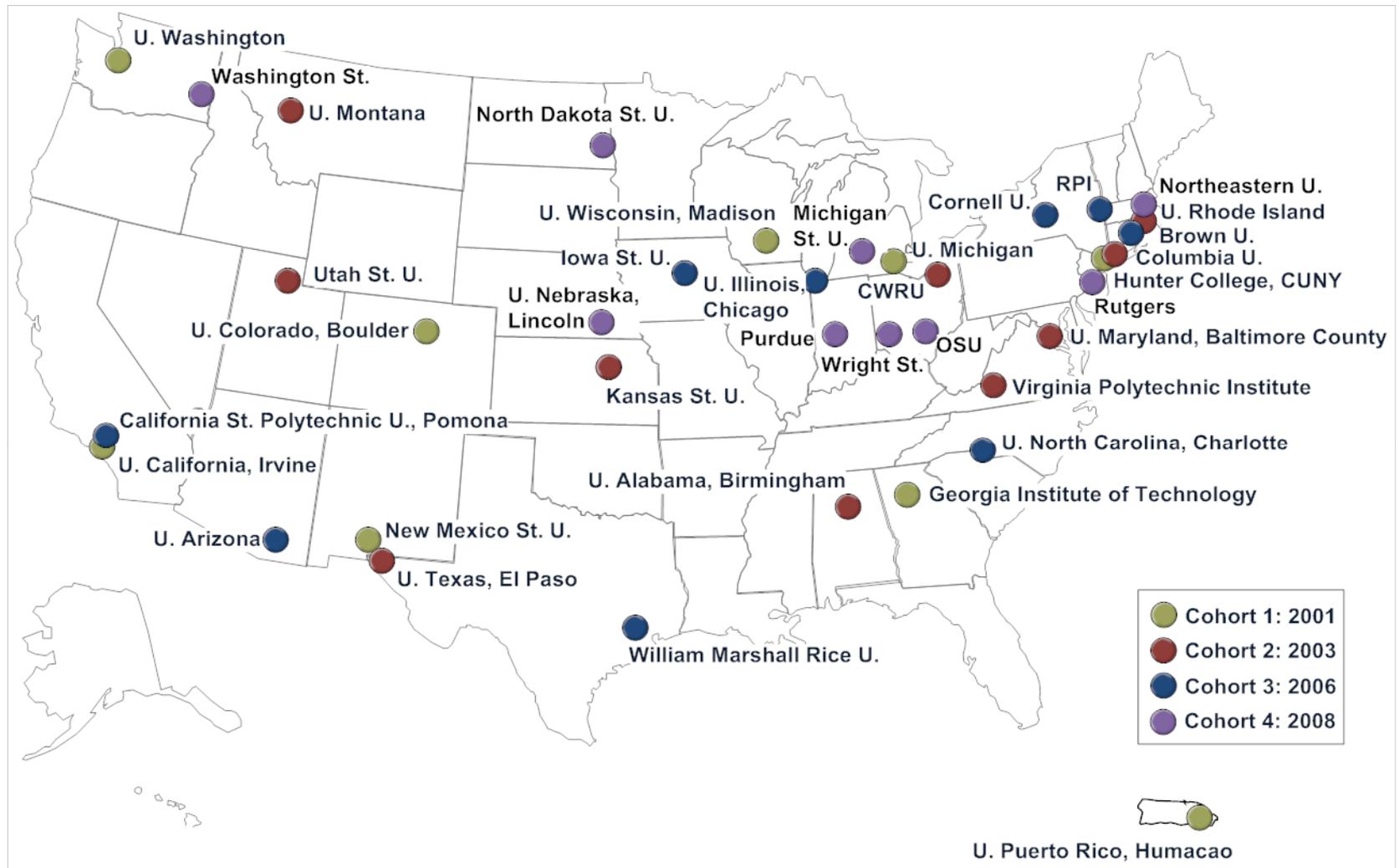
### ❑ Funding

- ❑ 5-year projects at average \$2M to \$4M funding level

### ❑ IT Project Characteristics

- ❑ Focus on "integrated approach" toward policy changes to enhance the potential for demonstrable and sustainable change
- ❑ Projects are grounded in existing social science literature regarding organizational change and diversity
- ❑ Inclusion of input from institutional departments and from ALL levels of the administration

# ADVANCE Institutional Transformation Grantees 2001-2008



# ADVANCE Best Practices - *Implicit Bias*

- ❑ **Perceptions** about different categories of individuals and actions that are taken based on those perceptions
- ❑ University of Michigan STRIDE (Strategies and Tactics for Recruiting to Improve Diversity and Excellence) Committee
  - ❑ Provides training on the unconscious bias literature for **senior STEM faculty** who work with **recruitment committees** and promotion and tenure committees is very effective
  - ❑ Reduces influences of implicit bias on search committees and promotion and tenure committees
- ❑ Outcomes
  - ❑ Increase in women hired in science and engineering tenure track positions (14% in 2001 – 34% in 2006)

# ADVANCE Best Practices - *Department Leadership*

- University of Wisconsin at Madison
  - Provides chairs with tools and resources to identify issues and to develop action plans to address issues:
    - Training on:
      - Need for and use of climate survey data
      - Importance of their role in mentoring new faculty
      - Implicit bias (related to letters of recommendation/commendation, annual evaluations, etc.)
- Outcomes
  - Increase in number of female department chairs (2 – 10/3 years)
  - Positive changes in faculty climate surveys (less reports of isolation, better “fit”)

# ADVANCE Best Practices – *Faculty Development*

- ❑ Approaches for faculty development grants:
  - ❑ Supporting attendance at professional meetings, leadership development conferences
  - ❑ Providing funds to visit an external mentor or to bring one to campus
  - ❑ Encouraging interdisciplinary collaboration
  - ❑ Support for bridge funding: between start up funding and first external award, or between external funding awards
  
- ❑ Approaches for Mentoring:
  - ❑ Formal and informal networks
    - ❑ Emphasis on research networks
  - ❑ Inter and intra-institutional mentoring
  - ❑ Career coaching
  - ❑ Faculty advocates

# ADVANCE Best Practices - *Policies/Procedures*

- ❑ Review and revision of key institutional policies
  - ❑ Tenure and promotion decision making
  - ❑ Requests for leave or tenure clock stopping
  - ❑ Access to resources or services
  - ❑ Allocation of teaching, service workload
  - ❑ Work-Life Balance
    - ❑ Policies and practices that address dual career household issues
      - ❑ Dual hiring policies and practices
    - ❑ Tenure clock stopping policies and practices
    - ❑ Conversion of part-time positions to tenured or tenure track positions

# ADVANCE Best Practices - *Women of Color*

- ❑ Social support for campuses in remote locations
  - ❑ Collaborations with culturally relevant organizations/institutions
  - ❑ Access to/appreciation for opportunities for civic engagement
- ❑ Culturally competent mentoring
- ❑ Awareness programs focused on issues directly related to women of color (implicit bias, microinequities, health equity)
- ❑ Targeted seminar series featuring women of color scientists
- ❑ Work-life balance programs targeted toward women of color (dependent care for single parenthood)

# Program Management

## ADVANCE is a “NSF-wide” program

- ▣ The Assistant Directors (ADs) of each participating directorate reviews and approves the program solicitation and management plan
- ▣ Program funds are located in the participating directorates and offices

## ADVANCE Implementation Committee (AIC)

- ▣ One or more representatives from each participating Directorate and Office
- ▣ Acts as an advisory committee
- ▣ Meets monthly to discuss program management and related issues

# ADVANCE

## Program Directors:

- ▣ Jessie DeAro - [jdearo@nsf.gov](mailto:jdearo@nsf.gov)
- ▣ Kelly Mack – [kmack@nsf.gov](mailto:kmack@nsf.gov)

## Integrative Activities Specialist:

- ▣ Pat Simms – [psimms@nsf.gov](mailto:psimms@nsf.gov)

## AAAS Fellow

- ▣ Erin Seney – [eseney@nsf.gov](mailto:eseney@nsf.gov)

## ADVANCE NSF Website

- ▣ [www.nsf.gov/advance](http://www.nsf.gov/advance)

## ADVANCE Web Portal

- ▣ [www.advance-portal.net](http://www.advance-portal.net)