



NATIONAL ACADEMY OF ENGINEERING
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Assessing Participation and Advancement in Engineering and Science of Individuals and Institutions Underrepresented as Federal Grantees

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CASEE



Overview

- Background
- Strategy for Underrepresented Populations
- Strategy for Underparticipating Institutions
- Recommended Metrics
- Your Feedback



Background

- NSF Core Values include

Broadly Inclusive: seeking and accommodating contributions from all sources while reaching out especially to groups that have been underrepresented; serving scientists, engineers, educators, students and the public across the nation; and exploring every opportunity for partnerships, both nationally and internationally.



Background

- 2004 Committee on Equal Opportunities in Science and Engineering (CEOSE) recommendations to the National Science Foundation:
 - Expand and improve accountability of grantees on the broader participation criterion
 - Design and use policies that encourage PIs and their institutions to focus on the diversity aspects of the broader participation criterion



Background

- NSF Grant (REC-0643048)
- CASEE Staff: Norman Fortenberry and Beth Cady
- Working Group Members:
 - Fitzgerald Bramwell
 - Beatriz Clewell
 - Eric Jolly
 - Vicki Flaris
 - Heather Macdonald
 - Dianne Martin
 - Muriel Poston
 - Tony Rodriguez
 - Roberta Spalter-Roth



Background

- Our Purpose:

Advance the STEM community's initial response to these challenges by convening a working group that will identify potential metrics for use in judging the participation and advancement of underrepresented populations and institutions in NSF-supported STEM activities



Background

Project Goals: Develop metrics to assess participation in NSF-supported activities by

- Individuals from populations underrepresented in Science, Technology, Engineering, and Math (STEM) fields
 - Women,
 - Underrepresented minorities,
 - Persons with disabilities
- Individuals from institutions underrepresented as NSF-grantees
 - Baccalaureate colleges,
 - Community colleges
 - Minority-serving institutions, etc.



Background: Organization of Metrics and Data

	Individually-held Data	Institutionally-held Data
Research and Education Activities within an Institution	<i>Metrics related to the S&E workforce preparation, utilization and advancement of individuals from underrepresented populations or underparticipating institutions. – research, teaching, service at all levels.</i>	
Research and Education Activities across Institutions		



Underrepresented Populations

Characterize efforts to identify, attract, engage, prepare, support, retain, sustain, utilize and advance, a diverse science and engineering workforce.

- Faculty/Teachers
- Students
- Administrators
- Staff



Underrepresented Populations

Sample Metrics

- Comparisons of recruitment, retention, and promotion **activities, numbers** and **rates** for faculty/teachers by gender and ethnicity over time [Data is generally held by institutions]
- **Numbers** and **rates** of participation of students in research activities, publications, presentations, etc. [Data is generally held by individuals]



Underrepresented Populations

We suggest juxtaposing institutionally-held diversity data with the publicly available data on NSF funding received by institutions in order to display the human resource return on the NSF investment.

As a practical matter, we believe this would (minimally) result in an augmentation of the current “Award Summary: Top 200 Institutions”

<<http://dellweb.bfa.nsf.gov/Top50Inst2/default.asp>> to include that section of the three most recent affirmative action plans for the awardee institution that indicates whether and to what degree it has met its utilization goals for women and minorities.



Underparticipating Institutions

Characterize efforts to engage and collaborate with individuals from community colleges, baccalaureate institutions, minority serving institutions, etc. in ways that build self-sustaining capacity



Underparticipating Institutions

Sample Metrics (numbers and rates)

- Project **participation** and **leadership**
- Project **management** and share of **funds**
- Facilities **access** and **use**
- Development of **capacity** and **experience** in grant management

Data is variously held by institutions and individuals



Underparticipating Institutions

We suggest juxtaposing institutionally-held data with the publicly available data on NSF funding received by institutions in order to display the institutional diversity return on the NSF investment.

As a practical matter, we believe this would (minimally) result in an augmentation of the current “Award Summary: Top 200 Institutions”
<<http://dellweb.bfa.nsf.gov/Top50Inst2/default.asp>>
to include data on the identified metrics and tracking overtime of metrics of the UI’s participation in NSF activities.



Your Feedback

- Are the basic strategies sound?
- Are the metrics reasonable?
- How best do we build support for the strategies within NSF and the grantee communities?