## 112TH CONGRESS 1ST SESSION

# H. R. 889

To provide for fulfilling the potential of women in academic science and engineering, and for other purposes.

# IN THE HOUSE OF REPRESENTATIVES

March 2, 2011

Ms. Eddie Bernice Johnson of Texas (for herself, Mr. Stark, Mr. Reyes, Mr. Markey, Ms. Edwards, Ms. Fudge, Mr. Honda, Mr. Hinojosa, Mr. Tonko, Mr. Holt, Mr. Wu, Mr. Davis of Illinois, Ms. Wasserman Schultz, Ms. Woolsey, Ms. Wilson of Florida, Mr. Grijalva, and Ms. Norton) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

# A BILL

To provide for fulfilling the potential of women in academic science and engineering, and for other purposes.

- 1 Be it enacted by the Senate and House of Representa-
- 2 tives of the United States of America in Congress assembled,
- 3 SECTION 1. SHORT TITLE.
- 4 This Act may be cited as the "Fulfilling the Potential
- 5 of Women in Academic Science and Engineering Act of
- 6 2011".
- 7 SEC. 2. FINDINGS.
- 8 The Congress finds the following:

- 1 (1) Many reports over the past decade have 2 found that it is critical to our Nation's economic 3 leadership and global competitiveness that we edu-4 cate and train more scientists and engineers.
  - (2) In its 2007 report entitled "Beyond Bias and Barriers", the National Academies stated that, in order to maintain its scientific and engineering leadership amid increasing economic and educational globalization, the United States must aggressively pursue the innovative capacity of all of its people—women and men.
  - (3) Research shows that the number of women who are interested in science, technology, engineering, and mathematics (STEM) careers is reduced at every educational transition, from high school on through full professorships.
  - (4) According to data compiled by National Science Foundation in 2006, women now earn about half of all science and engineering bachelor's degrees, but major variations persist among fields. For example, women still receive only 20 percent of all bachelor's degrees awarded in engineering and physics.
  - (5) Even in science and engineering fields with a higher representation of women, such as the social

- and behavioral sciences, women remain underrepresented among university faculty. According to data compiled by the National Science Foundation, for over 30 years women have made up over 30 percent of the doctorates in social sciences and behavioral sciences and over 20 percent in the life sciences. Yet, at the top research institutions, only 15.4 percent of the full professors in the social and behavioral sciences and 14.8 percent in the life sciences are women.
  - (6) Across fields, women remain a small portion of the science and engineering faculty members at major research universities, and they typically receive fewer institutional resources for their research activities than their male colleagues.
  - (7) Studies have not found any significant biological differences between men and women in performing science and mathematics that can account for the lower representation of women in academic faculty and scientific leadership positions in these fields.
  - (8) A substantial body of evidence establishes that most people hold implicit biases. Decades of cognitive psychology research reveals that most people carry prejudices of which they are unaware but

- 1 that nonetheless play a large role in evaluations of 2 people and their work. Unintentional biases and out-3 moded institutional structures are hindering the access for women to, and advancement of women in, science and engineering.
  - (9) Workshops held to educate faculty about unintentional biases have demonstrated success in raising awareness of such biases.
- 9 (10) The Federal Government provides over 60 10 percent of research funding at institutions of higher education, and through its grant making policies has 12 had significant influence on institution of higher 13 education policies, including policies related to insti-14 tutional culture and structure.

### 15 SEC. 3. FULFILLING THE POTENTIAL OF WOMEN IN ACA-16 DEMIC SCIENCE AND ENGINEERING.

#### 17 (a) Definitions.—In this section—

- (1) the term "Federal science agency" means any Federal agency that is responsible for at least 2 percent of total Federal research and development funding to institutions of higher education, according to the most recent data available from the National Science Foundation;
- (2) the term "institution of higher education" 24 25 has the meaning given such term in section 101(a)

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- of the Higher Education Act of 1965 (20 U.S.C.
- 2 1001(a);
- 3 (3) the term "STEM" means science, tech-
- 4 nology, engineering, and mathematics; and
- 5 (4) the term "United States" means the several
- 6 States, the District of Columbia, the Commonwealth
- 7 of Puerto Rico, the Virgin Islands, Guam, American
- 8 Samoa, the Commonwealth of the Northern Mariana
- 9 Islands, and any other territory or possession of the
- 10 United States.
- 11 (b) Workshops To Enhance Gender Equity in
- 12 ACADEMIC SCIENCE AND ENGINEERING.—
- 13 (1) IN GENERAL.—Not later than 6 months
- after the date of enactment of this Act, the Director
- of the Office of Science and Technology Policy shall
- develop a uniform policy for all Federal science
- agencies to carry out a program of workshops that
- educate program officers, members of grant review
- panels, institution of higher education STEM de-
- 20 partment chairs, and other federally funded re-
- 21 searchers about methods that minimize the effects of
- gender bias in evaluation of Federal research grants
- and in the related academic advancement of actual
- and potential recipients of these grants, including
- hiring, tenure, promotion, and selection for any

- 1 honor based in part on the recipient's research record.
  - (2) Interagency coordination.—The Director of the Office of Science and Technology Policy shall ensure that programs of workshops across the Federal science agencies are coordinated and supported jointly as appropriate. As part of this process, the Director of the Office of Science and Technology Policy shall ensure that at least 1 workshop is supported every 2 years among the Federal science agencies in each of the major science and engineering disciplines supported by those agencies.
    - (3) Organizations eligible to carry out the program of workshops under this subsection by making grants to eligible organizations. In addition to any other organizations made eligible by the Federal science agencies, the following organizations are eligible for grants under this subsection:
      - (A) Nonprofit scientific and professional societies and organizations that represent one or more STEM disciplines.
      - (B) Nonprofit organizations that have the primary mission of advancing the participation of women in STEM.

1	(4) Characteristics of workshops.—The
2	workshops shall have the following characteristics:
3	(A) Invitees to workshops shall include at
4	least—
5	(i) the chairs of departments in the
6	relevant discipline from at least the top 50
7	institutions of higher education, as deter-
8	mined by the amount of Federal research
9	and development funds obligated to each
10	institution of higher education in the prior
11	year based on data available from the Na-
12	tional Science Foundation;
13	(ii) members of any standing research
14	grant review panel appointed by the Fed-
15	eral science agencies in the relevant dis-
16	cipline;
17	(iii) in the case of science and engi-
18	neering disciplines supported by the De-
19	partment of Energy, the individuals from
20	each of the Department of Energy Na-
21	tional Laboratories with personnel manage-
22	ment responsibilities comparable to those
23	of an institution of higher education de-
24	partment chair; and

- 1 (iv) Federal science agency program
  2 officers in the relevant discipline, other
  3 than program officers that participate in
  4 comparable workshops organized and run
  5 specifically for that agency's program officers.
  - (B) Activities at the workshops shall include research presentations and interactive discussions or other activities that increase the awareness of the existence of gender bias in the grant-making process and the development of the academic record necessary to qualify as a grant recipient, including recruitment, hiring, tenure review, promotion, and other forms of formal recognition of individual achievement, and provide strategies to overcome such bias.
  - (C) Research presentations and other workshop programs, as appropriate, shall include a discussion of the unique challenges faced by women who are members of historically underrepresented groups.
  - (D) Workshop programs shall include information on best practices and the value of mentoring undergraduate and graduate women

students as well as outreach to girls earlier in their STEM education.

## (5) Report.—

- (A) IN GENERAL.—Not later than 5 years after the date of enactment of this Act, the Director of the Office of Science and Technology Policy shall transmit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report evaluating the effectiveness of the program carried out under this subsection to reduce gender bias towards women engaged in research funded by the Federal Government. The Director of the Office of Science and Technology Policy shall include in this report any recommendations for improving the evaluation process described in subparagraph (B).
- (B) MINIMUM CRITERIA FOR EVALUATION.—In determining the effectiveness of the program, the Director of the Office of Science and Technology Policy shall consider, at a minimum—

1	(i) the rates of participation by
2	invitees in the workshops authorized under
3	this subsection;
4	(ii) the results of attitudinal surveys
5	conducted on workshop participants before
6	and after the workshops;
7	(iii) any relevant institutional policy
8	or practice changes reported by partici-
9	pants; and
10	(iv) for individuals described in para-
11	graph (4)(A) (i) or (iii) who participated in
12	at least 1 workshop 3 or more years prior
13	to the due date for the report, trends in
14	the data for the department represented by
15	the chair or employee including faculty
16	data related to gender as described in sec-
17	tion 4.
18	(C) Institutional attendance at
19	WORKSHOPS.—As part of the report under sub-
20	paragraph (A), the Director of the Office of
21	Science and Technology Policy shall include a
22	list of institutions of higher education science
23	and engineering departments whose representa-
24	tives attended the workshops required under

this subsection.

1	(6) Minimizing costs.—To the extent prac-
2	ticable, workshops shall be held in conjunction with
3	national or regional disciplinary meetings to mini-
4	mize costs associated with participant travel.
5	(e) Extended Research Grant Support and In-
6	TERIM TECHNICAL SUPPORT FOR CAREGIVERS.—
7	(1) Policies for caregivers.—Not later
8	than 6 months after the date of enactment of this
9	Act, the Director of the Office of Science and Tech-
10	nology Policy shall develop a uniform policy to—
11	(A) extend the period of grant support for
12	federally funded researchers who have
13	caregiving responsibilities; and
14	(B) provide funding for interim technical
15	staff support for federally funded researchers
16	who take a leave of absence for caregiving re-
17	sponsibilities.
18	(2) Report.—Upon developing the policy re-
19	quired under paragraph (1), the Director of the Of-
20	fice of Science and Technology Policy shall transmit
21	a copy of the policy to the Committee on Science,
22	Space, and Technology of the House of Representa-
23	tives and to the Committee on Commerce, Science,
24	and Transportation of the Senate.

1 (d) Collection of Data on Federal Research 2 Grants.— 3 (1) IN GENERAL.—Each Federal science agency 4 shall collect standardized annual composite informa-5 tion on demographics, field, award type and budget 6 request, review score, and funding outcome for all 7 applications for research and development grants to 8 institutions of higher education supported by that 9 agency. 10 (2) Reporting of Data.— 11 (A) The Director of the Office of Science 12 and Technology Policy shall establish a policy to ensure uniformity and standardization of 13 14 data collection required under paragraph (1). 15 (B) Not later than 2 years after the date 16 of enactment of this Act, and annually there-17 after, each Federal science agency shall submit 18 data collected under paragraph (1) to the Na-19 tional Science Foundation. 20 (C) The National Science Foundation shall 21 be responsible for storing and publishing all of 22 the grant data submitted under subparagraph 23 (B), disaggregated and cross-tabulated by race,

ethnicity, and gender, in conjunction with the

biennial report required under section 37 of the

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- 1 Science and Engineering Equal Opportunities
- 2 Act (42 U.S.C. 1885d).
- 3 (e) Publication of List of Institutional Par-
- 4 TICIPATION IN WORKSHOPS TO ENHANCE GENDER EQ-
- 5 UITY IN ACADEMIC SCIENCE AND ENGINEERING.—The
- 6 Director of the Office of Science and Technology Policy,
- 7 on the basis of data reported by the Federal science agen-
- 8 cies, shall publish annually a list of institutions of higher
- 9 education science and engineering departments rep-
- 10 resented by individuals who attend the workshops de-
- 11 scribed in this section. The list shall be publicly available
- 12 through the Web site of the Office of Science and Tech-
- 13 nology Policy. Any institution of higher education science
- 14 and engineering department that is publicized on the list
- 15 may publicize its receipt of such recognition on its Web
- 16 site, in printed materials, or through other means.
- 17 SEC. 4. COLLECTION OF DATA ON DEMOGRAPHICS OF FAC-
- 18 ULTY.
- 19 (a) COLLECTION OF DATA.—The Director of the Na-
- 20 tional Science Foundation shall report, in conjunction with
- 21 the biennial report required under section 37 of the
- 22 Science and Engineering Equal Opportunities Act (42
- 23 U.S.C. 1885d), statistical summary data on the demo-
- 24 graphics of STEM discipline faculty at institutions of
- 25 higher education in the United States, disaggregated and

1	cross-tabulated by race, ethnicity, and gender. At a min-
2	imum, the Director shall consider—
3	(1) the number and percent of faculty by gen-
4	der, race, and age;
5	(2) the number and percent of faculty at each
6	rank, by gender, race, and age;
7	(3) the number and percent of faculty who are
8	in nontenure-track positions, including teaching and
9	research, by gender, race, and age;
10	(4) the number of faculty who are reviewed for
11	promotion, including tenure, and the percentage of
12	that number who are promoted, by gender, race, and
13	age;
14	(5) faculty years in rank by gender, race, and
15	age;
16	(6) faculty attrition by gender, race, and age;
17	(7) the number and percent of faculty hired by
18	rank, gender, race, and age; and
19	(8) the number and percent of faculty in leader-
20	ship positions, including endowed or named chairs,
21	serving on promotion and tenure committees, by
22	gender, race, and age.
23	(b) Recommendations.—The Director of the Na-
24	tional Science Foundation shall solicit input and rec-
25	ommendations from relevant stakeholders, including rep-

- 1 resentatives from institutions of higher education and non-
- 2 profit organizations, on the collection of data required
- 3 under subsection (a), including the development of stand-
- 4 ard definitions on the terms and categories to be used in
- 5 the collection of such data.
- 6 (c) Report to Congress.—Not later than 2 years
- 7 after the date of enactment of this Act, the Director of
- 8 the National Science Foundation shall submit a report to
- 9 Congress on how the National Science Foundation will
- 10 gather the demographic data on STEM faculty, includ-
- 11 ing—
- 12 (1) a description of the data to be reported and
- the sources of those data;
- 14 (2) justification for the exclusion of any data
- described in paragraph (1); and
- 16 (3) a list of the definitions for the terms and
- 17 categories, such as "faculty" and "leadership posi-
- tions", to be applied in the reporting of all data de-
- scribed in paragraph (1).

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