NSF Division of Chemistry

Plan for Broadening Participation in Chemistry

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NSF Division of Chemistry
Plan for Broadening Participation in Chemistry
Executive Summary

Strategies and Activities: During FY07 the Division of Chemistry (CHE) will undertake the following strategies and activities to broaden participation in chemistry:

Hold a follow-up meeting to Gender Equity Workshop in FY07, at the April 2007 Council of Chemical Research Meeting.

Sponsor a workshop on Under-Represented Minorities (URM) in FY07 to be modeled after the Gender Equity Workshop.

Deliver presentations beginning in FY07 to CHE panels on bias in evaluations.

Require a departmental plan for broadening participation in chemistry in the CRIF:MU (Chemistry Research Instrumentation and Facilities – Multiuser) competition beginning in FY08.

Monitor CHE principal investigator (PI) demographics and engage in mentoring and other forms of outreach.

Update progress and include diversity efforts in annual Division report.

NSF Division of Chemistry
Plan for Broadening Participation in Chemistry
FY 2007

I. Guiding Principles

As stated in the American Competitiveness Initiative: "America's economic strength and global leadership depend in large measure on our Nation's ability to generate and harness the latest in scientific and technological developments and to apply these developments to real world applications. These applications are fueled by: scientific research, … ; a strong education system that equips our workforce with the skills necessary … ; and an environment that encourages entrepreneurship, risk taking, and innovative thinking."[1] Achieving the goals of this initiative will require that all qualified individuals are allowed and encouraged to participate in the scientific endeavor.

In striving for the highest standards of excellence in chemistry research and education, the National Science Foundation (NSF) Division of Chemistry (CHE) draws its staff, reviewers and advisors from all demographic sections of the U.S. population. The Division feels that utilizing the entire pool of qualified scientists is essential to attaining its vision, which is one of *supporting innovative research in the chemical sciences, integrated with education, through strategic investments in a globally-engaged workforce reflecting the diversity of America*.

NSF's investments in people enable the Foundation to meet its mission of promoting the progress of science, while facilitating the creation of a diverse, competitive and globally-engaged workforce of scientists, engineers, technologists and well-prepared citizens.[2] NSF takes a holistic view of opportunities and challenges, embracing diversity in all activities and at all levels.[3] As a specific objective, NSF promotes greater diversity in the science and engineering workforce through increased participation of underrepresented groups and institutions in all NSF programs and activities.[4] In addition, NSF is dedicated to the following:

> **Excellence**: continually improving our ability to identify opportunities; investing optimally the resources entrusted to us; managing a diverse, capable, motivating organization; rewarding accomplishment; and sharing our best insights with others. [5]

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[1] "American Competitiveness Initiative: Leading the World in Innovation," Domestic Policy Council, Office of Science and Technology, Overview, p. 1, February, 2006. http://www.whitehouse.gov/stateoftheunion/2006/aci/. See also: National Competitiveness Investment Act (NCIA on calendar in Senate as S.3936).

[2] NSF Strategic Plan 2003-2008. II. Strategic Goals, A. People Goal, p. 14.

[3] NSF Strategic Plan 2003-2008. Appendix C, NSF Values and Attributes, p. 34.

[4] NSF Strategic Plan 2003-2008. II. Strategic Goals, A. People Goal., p. 15.

[5] "Investing in America's Future," NSF Strategic Plan 2006-2011. II. Mission and Core Values, p. 4. http://www.nsf.gov/pubs/2006/nsf0648/nsf0648.jsp.

Being 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.[5]

A diverse, globally engaged STEM workforce: NSF will focus on broadening participation in STEM disciplines. We will work with academic and industry partners to ensure that STEM education and workforce preparation are broadly available, for the technical workforce as well as for future scientists and engineers, and provide the skills and knowledge needed to flourish in a global knowledge economy.[6]

Expanding efforts to broaden participation from underrepresented groups and diverse institutions in all NSF activities: NSF will continue to enforce its merit review policy and increase the diversity of reviewers; increase its competitive awards investments in the participation of groups, types of institutions, and geographic regions underrepresented in STEM; and continue to increase the diversity of NSF's STEM workforce.[7]

Improving our processes of recruiting and selecting highly qualified reviewers and panelists: NSF will recruit potential reviewers and automatically add new investigators to an integrated, Foundation-wide database of reviewers, establishing an increasingly diverse pool of highly qualified reviewers for future selection. Reviewers and panelists will reflect the diversity in our community.[8]

Recruiting, hiring and empowering highly qualified professional staff members who reflect the diversity of our community: Program Officers, Division Directors and other science and engineering professional staff are the principal means by which NSF projects values and receives ideas from the science, engineering and education research communities. We must continue to attract and, for permanent staff, retain scientists, engineers and educators with the necessary expertise, experience and impeccable reputations to act as stewards of national research and education programs.[8]

The Division of Chemistry also notes the following institutional goals drawn from (1) the NSF Human Capital Plan, (2) the NSF Government Results and Performance Act (GPRA) Report and (3) the Congressional Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (CAWMSET).

NSF Human Capital Plan: To improve diversity representation throughout the Foundation, NSF will ensure that diversity considerations are embedded in activities related to agency staffing of scientists and engineers.[9]

NSF GPRA Report 2006: Promote greater diversity in the science and engineering workforce through increased participation of underrepresented groups in NSF activities.[10]

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[6] "Investing in America's Future," NSF Strategic Plan 2006-2011. III. Investment Priorities, B. Learning, p. 7. http://www.nsf.gov/pubs/2006/nsf0648/nsf0648.jsp.

[7] "Investing in America's Future," NSF Strategic Plan 2006-2011. III. Investment Priorities, D. Stewardship, p. 9-10. http://www.nsf.gov/pubs/2006/nsf0648/nsf0648.jsp.

[8] "Investing in America's Future," NSF Strategic Plan 2006-2011. III. Investment Priorities, D. Stewardship, p.10. http://www.nsf.gov/pubs/2006/nsf0648/nsf0648.jsp.

[9] NSF Human Capital Management Plan (2003). http://www.inside.nsf.gov/oirm/hrm/wpab/human_capital/human_capital_management_plan_version_final_12.31.03.doc.

CAWMSET Standard: One measure of success is parity with respect to the workforce population distribution.[11] This is taken to be the same distribution as in the U.S. Census. Therefore, in keeping with NSF's strategic goals, the Division of Chemistry recognizes the CAWMSET data as a strategic reference point in broadening participation at all of the Division's operating levels. Intermediate short term diversity measures may be established, and are discussed in detail in Section III below.

II. Current Status

Diversity is a term used to describe an inclusive collection of individuals and groups who bring varied human characteristics, backgrounds, interests, and perspectives to enrich the workforce. It is used broadly to refer to many demographic variables, including, but not limited to, race, religion, color, gender, national origin, disability, sexual orientation, age, education, geographic origin, and skill characteristics.[12] Other definitions relevant to diversity are given in Appendix I.

The present status of gender, racial and ethnic diversity in various populations of concern to CHE are given in Tables 1-5 in Appendix II.

Table 1 compares the current demographic distributions for chemistry degrees awarded and among chemistry and physical science faculty to the U.S. population. Table 2 shows similar data for the NSF Division of Chemistry internal workforce staff. In some categories, the Division meets or exceeds the percentage in the U.S. population, but in others it does not.

We have also tracked the gender percentages for those reviewers who self-identified as either male or female. The results, shown in Table 3, are divided into individuals from whom a review has been requested (selected reviewers) and those who actually respond with a written review. Individuals of unknown gender are excluded from the percent calculations, as the Female/Male (F/M) ratio among these is assumed to be the same as that of those of assigned gender. The total number of reviewers does not equal the sum of males and females across ad hoc and panel reviewers because some individuals served as both ad hoc reviewers and panelists. This accounts for the F/M workload ratio of all reviewers and panelists being higher than that for either reviewers or panelists alone, which indicates some female reviewers (ad hoc or panelists) are more frequently selected for service than male reviewers are.

Comparing the percentage of reviewers who are female with the pool of women Ph.D. chemists or professors (cf. Tables 1 and 3), shows that CHE is presently seeking reviews from women at

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[10] NSF GPRA Report 2006. http://www.nsf.gov/pubs/2007/nsf0701/index.jsp.

[11] *Land of Plenty*: Diversity as America's Competitive Edge in Science, Engineering and Technology, Report of the Congressional Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development (CAWMSET) to Congress, the National Governor's Association and the President. September, 2000, p. 9. http://www.nsf.gov/publications/pub_summ.jsp?ods_key=cawmset0409.

[12] Department of Interior, Office of Civil Rights. http://www.doi.gov/diversity/workforce_diversity.html.

about the rate expected from the pool. On the other hand, the percentage of women participating in panels, and submitting panel reviews, (34-38%) is substantially higher than their representation in the pool. The relative number of reviews provided by women for both ad hoc and panel reviews is 23%, i.e. higher than the level available in the pool.

The percentage of PIs who are women is approximately equal to that of the general pool of U.S. chemists and chemistry professors (17.6%, cf. Tables 1 and 4), but substantially below that of the general population. Table 4 also shows that African Americans, Hispanics and Native Americans are substantially less well represented among CHE PIs than in the U.S. population. Hawaiian/Pacific Islanders are represented at the same rate as in the U.S. population. Relative to all U.S. chemistry Ph.D.s, Native Americans are represented at the same rate and African Americans are closely represented. Asian Americans are represented at an appreciably lower rate and Hispanics at a slightly higher rate. Figure 1 shows annual trends for some of the aggregate data.

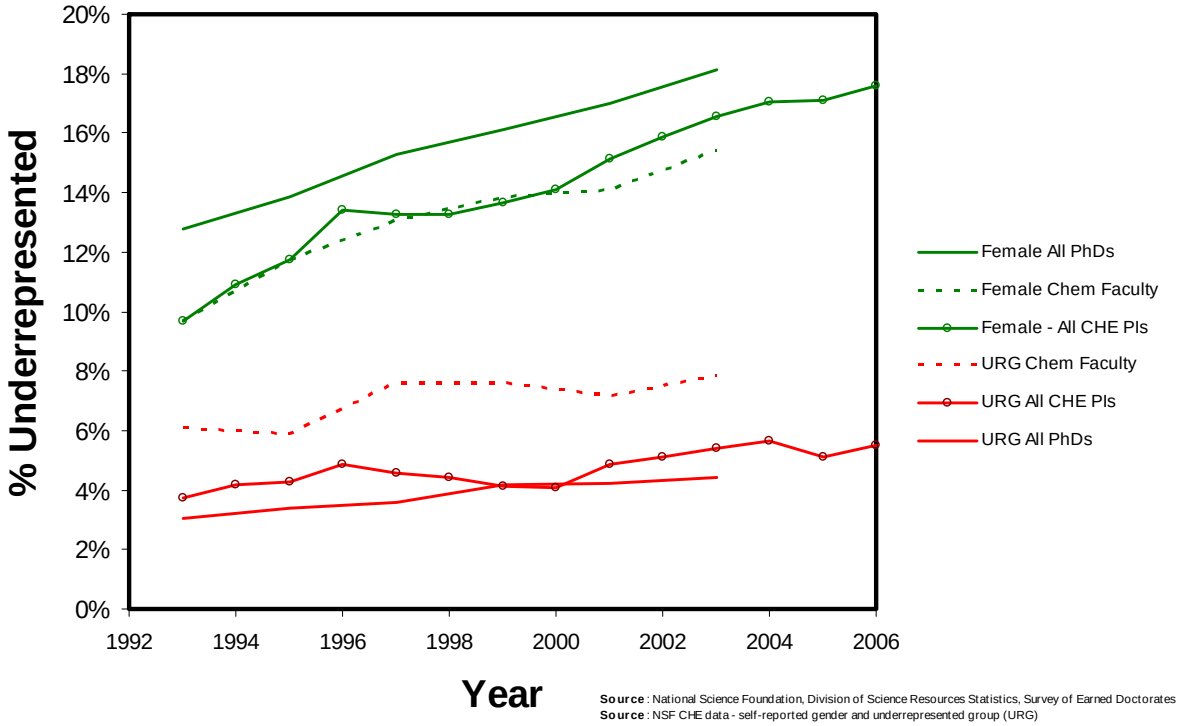

Figure 1. Chemistry Ph.D.s (employed), Faculty (4 year colleges and universities) and CHE PIs from 1992 - 2006. The figure illustrates that the percentage of female CHE PIs has been somewhat below the percentage of female chemistry Ph.D.s, while the underrepresented groups (URG) more closely match the pool of graduates. All of the percentages in Figure 1 are substantially below the percent of women and minorities in the U.S. population.

The number and percentage of people with non-severe and severe disabilities in the 25-64 age group of the U.S. population is given in Table 5. It is noteworthy that the proportion of people with disabilities decreases with increasing educational level. Approximately 5.2% of Americans with baccalaureate degrees and above have some degree of disability and about half of these (2.4% overall) are able to work. Only 1.7% of CHE PIs and Co-PIs report a visual, hearing, mobility or other impairment, which would include learning disabilities, mental illness, etc., (cf. definitions of impairment versus disability in Appendix I).

Web links to additional resources are given in Appendix III.

III. Broadening Participation

CHE aims to aggressively broaden participation in its programs and activities, i.e., we will strive to increase the number of underrepresented individuals in hiring staff within the Division, making committee, workshop and reviewer selections, and through participation as funded principal investigators. Intermediate guides based on graduation rates may be set in some cases. Where benchmarks are set with respect to graduation rates, these will be based on three-year averages. All demographic data used will be the latest available.

CHE Committee of Visitors: In order to attain greater diversity, the Division of Chemistry believes that its leaders and evaluators must be committed to broadening participation. Consequently, the Division of Chemistry will seek to increase diversity within its tri-annual Committee of Visitors (COV), using as a guide the diversity of the country's population with regard to gender, ethnicity, race and disability as indicated in Tables 1, 2 and 5 of Appendix II. While the COV typically consists of approximately 30 members, this is small relative to the number of Ph.D. chemists in the U.S. and the diversity measure will need to be met only once every three years. We, therefore, consider the CAWMSET data as a useful reference in measuring how well we are increasing diversity and broadening participation within the COV membership (see Table 6).

CHE Workforce: In order for CHE to make outstanding strategic investments in chemistry research and to be at the forefront of broadening participation in chemistry to all segments of the population, the CHE workforce itself should ideally reflect the population as a whole. While NSF is an attractive employer, the demographics of the available pool from which we can hire qualified technical staff is decidedly different from that of the population as a whole. Consequently, we will use for our benchmark for the technical staff the demographic distribution reflected in the graduating Ph.D. pool 3-5 years prior to the current date, as data against which to measure our diversity efforts. These benchmarks, which are given in the first column of Table 1 (Appendix II), are higher than the general pool of chemistry Ph.D.s and chemistry faculty, but lower than that of the gender, ethnic, racial and disability demographic distribution of the general population. Our efforts for increasing diversity among the CHE support staff will, however, be measured against the demographic distribution of the general population (CAWMSET standard).

CHE Reviewers: The NSF Proposal and Award Manual (PAM) states[13] that optimally reviewers should have:

[13] NSF Proposal and Award Manual (PAM), Dec. 31, 2005, p. V-5.
http://www.inside.nsf.gov//pubs/pam/pam1205/toc.htm

(Ch5,a.4) to the extent possible, diverse representation within the review group. The goal is to achieve a balance among various characteristics. Important factors to consider must include: (b) Reviewer diversity. Special attention should be paid to obtaining qualified persons from underrepresented groups, such as ethnic minorities, women, and individuals with disabilities.

(Ch5,b) It is seldom possible to meet all of the above criteria in a small group reviewing a variety of proposals. Nonetheless, Program Officers should strive to achieve a wide representation in the aggregate group of reviewers used. A regular rotation of participants should occur on continuing or standing review panels. Replacements should be chosen to preserve or enhance representation as outlined in these criteria. Particular attention should be given to types of reviewers who should be well represented but presently are not.

CHE reviewers are drawn from chemistry Ph.D. holders who are usually chemistry faculty and, therefore, the demographics of the available pool of reviewers is as shown in Table 1, column 3. The availability of women and reviewers from underrepresented minority groups in chemistry faculties and among chemists as a whole (see Appendix II, Table 1, columns 2-4) is significantly less than that of the general population. Therefore, in selecting reviewers, CHE will use the demographic distribution of all chemists (Table 1, column 2) as a measure of our diversity efforts, and will also look to the most current three-year average among graduating Ph.D. chemists (column 1) as an intermediate guide.

CHE Panel Reviewers: Many of the considerations in selecting panelists are the same as selecting mail reviewers. However, since panelists constitute a smaller group than ad hoc reviewers, CHE will use as a guide in selecting panelists the demographic distribution for the most current three-year average among graduating Ph.D. chemists.

CHE Workshop Participants: Since one of the goals of all NSF workshops is to broaden participation in chemistry, CHE will use as a guide in selecting topical workshop participants the demographic distribution for the most current three-year average among graduating Ph.D. chemists.

CHE Input to MPS-AC concerning the MPS-AC CHE Subgroup: As the CHE membership of the MPS Advisory Committee (MPS-AC) is a relatively small group, its demographic distribution will always be nonstatistical. Nevertheless, CHE will provide MPS with a list of candidates for the MPS-AC that reflect the demographic distribution of the U.S. population.

IV. Strategies and Activities

CHE Principal and CoPrincipal Investigators: The demographic distribution of applicants for CHE funding is largely determined by the demographic distribution among chemistry faculty (see Table 1) and their motivation to apply for funding. CHE will monitor the distribution of its PIs relative to the demographic distribution of all Ph.D. chemists (Table 1, column 2) and strive to increase the level of participation by women and other underrepresented minorities.

The CHE Plan for Broadening Participation in Chemistry is to be updated on an annual basis, and annual monitoring of CHE's progress in meeting the plan's diversity efforts will be included in the Division's Annual Report.

At all levels, CHE will engage in outreach activities, periodic workshops, and other endeavors to encourage applications from underrepresented groups and will list these activities in the CHE Annual Report.

In charging review panels beginning in FY07, CHE will present a series of slides that address unconscious, implicit biases during evaluation processes.

Individual investigator programs within CHE will consider funding proposals submitted under the GPG for one year to assist PIs in initiating promising new research programs. Disabled individuals and those from underrepresented groups in science should be strongly encouraged to apply for these one-year awards.

A follow-up meeting to the 2006 Gender Equity Workshop will be held, at the spring 2007 Council of Chemical Research Meeting, to train department chairs in leadership and diversity.

A Workshop on Under-Represented Minorities (URMs), which will be modeled after the Gender Equity Workshop, will be held in 2007.

Planning for a possible Workshop on the Disabled in Chemistry will begin. This workshop may be held in 2008.

Beginning in FY08, the Program Announcement for the CRIF-MU (Chemistry Research Instrumentation and Facilities – Multiuser) competition will include a requirement that departments submit a departmental Plan for Broadening Participation in Chemistry as part of the CRIF-MU application.

The Division of Chemistry continues its pioneering pilot project to seek new reviewers, particularly those with disabilities or from underrepresented groups, through outreach and its new reviewer website (http://www.nsf.gov/mps/che/reviewer/reviewer_info.jsp).

V. Other Types of Diversity

Program officers are referred to the NSF Proposal and Award Manual (PAM). Chapter V, for guidance in selecting reviewers, panelists, COV members, etc., with regard to diversity in experience, type of organization, and geographic distribution.

Appendices

Appendix I. Definitions

CAWMSET (Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology Development) **Standard**: Demographic distribution as in the U.S. Census for 2000: 51% female, 0.9% Native American, 3.6% Asian, 12% African American, 12.5% Hispanic.[14]

Diversity is a term used to describe an inclusive collection of individuals and groups who bring varied human characteristics, backgrounds, interests, and perspectives to enrich the workforce. It is used broadly to refer to many demographic variables, including, but not limited to, race, religion, color, gender, national origin, disability, sexual orientation, age, education, geographic origin, and skill characteristics.[15] Secondary dimensions include geographic diversity, and diversity of experiences in various academic and professional endeavors and institutions, such as community colleges through major research universities.

Human Capital:[16] **A** diverse, agile, results-oriented cadre of NSF knowledge workers committed to enabling the agency's mission and to constantly expanding their abilities to shape the agency's future.

Physical Impairment: Any physiological disorder, or condition, cosmetic disfigurement, or anatomical loss affecting one or more of the following body systems: neurological, musculoskeletal, special sense organs, respiratory (including speech organs), cardiovascular, reproductive, digestive, genito-urinary, hemic and lymphatic, skin, and endocrine.[17]

Mental Impairment: Any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness, and specific learning disabilities.[18]

Disabled:[19] The term "disability" means, with respect to an individual-
(A) a physical or mental impairment that substantially limits one or more of the major life activities[20] of such individual; (B) a record of such an impairment; or (C) being regarded as having such an impairment.

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[14] *Land of Plenty*: Diversity as America's Competitive Edge in Science, Engineering and Technology, Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology Development, (CAWMSET) Report, p. 9. http://www.nsf.gov/pubs/2000/cawmset0409/cawmset_0409.pdf.

[15] Department of Interior, Office of Civil Rights
http://www.doi.gov/diversity/workforce_diversity.html.

[16] NSF Human Capital Management Plan (2003).
http://www.inside.nsf.gov/oirm/hrm/wpab/human_capital/human_capital_management_plan_version_final_12.31.03.doc.

[17] 29 C.F.R. 1630.2(h)(1) (2004).
[18] 29 C.F.R. 1630.2(h)(2) (2004).
[19] Americans with Disabilities Act of 1990 42 U.S.C. §12102(2).http://www.ada.gov/pubs/ada.htm.

[20] Major life activities means functions such as caring for one's self-performing manual tasks, walking, seeing, hearing, speaking, breathing, learning, working, thinking, concentrating, interacting with others, and receiving educational or vocational instruction. See Equal Employment Opportunity Commission, Guide to Employment Law and Regulations 73:6 (1997).

Appendix II. Demographic Tables

Table 1. Number and Percentage of U.S. Chemistry Ph.D. Graduates and Faculty by Gender and Race/Ethnicity

	Chem. Ph.D. Graduates Ave. 2002-2004[a]	All Chem. Ph.D.s 2003[a]	Chem. Faculty Top 50 Univ. 2003[b]	All Chem. Faculty 2003[a]	All Physical Science Faculty 2003[a]	2000 U.S. Census[c] * CAWMSET Standard
Total No.	1,984	69,460	1,654	15,920	39,320	281,421,906
Gender	**Number**	**Number**	**Number**	**Number**	**Number**	**Number**
Female	642	12,600	200	2,800	7,196	143,368,343
Race/Ethnicity	**Number**	**Number**	**Number**	**Number**	**Number**	**Number**
African American	44	1,340	20	520	786	34,658,190
Asian	115	12,520	118	2,210	5,505	10,242,998
Hispanic	42	1,440	29	610	1,101	35,305,818
Native American	4	290	3	0	236	2,475,956
Gender	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
Female	32.4%	18.1%	12.1%	17.6%	18.3%	51.0%
Race/Ethnicity	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**	**Percentage**
African American	2.2%	1.9%	1.2%	3.3%	2.0%	12.0%
Asian	5.8%	18.0%	7.1%	13.9%	14.0%	3.6%
Hispanic	2.1%	2.1%	1.8%	3.8%	2.8%	12.5%
Native American	0.2%	0.4%	0.2%	0.0%	0.6%	0.9%

*Percentages calculated by dividing population of one race/ethnicity by total population.

Sources:
a. National Science Foundation/Division of Science Resources Statistics, 2003 Survey of Doctorate Recipients. http://www.nsf.gov/statistics/doctoratework/. Doctoral scientists and engineers are defined in this report as individuals under the age of 76 who have received a doctorate in a science, engineering, or health field from a U.S. academic institution and resided in the United States or one of its territories on October 1, 2003.
b. Professor Donna Nelson, University of Oklahoma, http://cheminfo.chem.ou.edu/~djn/diversity/top50.html.
c. U.S. Census, http://factfinder.census.gov/servlet/DTTable?_bm=y&-geo_id=01000US&-ds_name=DEC_2000_SF1_U&-_lang=en&-mt_name=DEC_2000_SF1_U_P001&-mt_name=DEC_2000_SF1_U_P003&-mt_name=DEC_2000_SF1_U_P004&-format=&-CONTEXT=dt.

Table 2. National Science Foundation, Division of Chemistry, Workforce Gender, Race/Ethnicity and Disability November, 2006

	2000 U.S. Census %[c] *	Chemistry Ph.D. Graduates Ave. 2002-2004[a]	Division of Chemistry[d]	%	Technical Staff	%	Support Staff	%
Gender								
Female	51%	32.4%	12	41%	7	30%	5	83%
Male	49%	67.6%	17	59%	16	70%	1	17%
Race/Ethnicity								
African American	12.0%	2.2%	5	17.2%	2	8.7%	3	50.0%
Asian	3.6%	5.8%	2	6.9%	2	8.7%	0	0.0%
Hawaiian/Pacific Islander	0.1%	NA**	0	0.0%	0	0.0%	0	0.0%
Hispanic	12.5%	2.1%	1	3.5%	1	4.3%	0	0.0%
Native American	0.9%	0.2%	0	0.0%	0	0.0%	0	0.0%
Some Other Race	5.5%	NA**	0	0.0%	0	0.0%	0	0.0%
White	75.0%	89.7%	21	72.4%	18	78.3%	3	50.0%
Disability (not severe,								
College educated, 25-64								
age group)			0	0.0%				
Total			29		23		6	

*Percentages calculated by dividing population of one race/ethnicity by total population.
** Not Available.

Sources:
a. National Science Foundation/Division of Science Resources Statistics, 2003 Survey of Doctorate Recipients.
c. 2000 U.S. Census Data.
d. NSF Data.

Table 3. National Science Foundation, Division of Chemistry, Proposal Reviewer and Panelist Gender and Workload* FY06

	Responding Reviewers[d]			Selected Reviewers[d]		
Gender	**Ad Hoc**	**Panel**	**All**	**Ad Hoc**	**Panel**	**All**
Female	513	71	548	770	128	845
Male	2,507	135	2,550	3,831	271	4,005
Unknown	280	8	284	437	18	452
Total	3,300	214	3,382	5,038	417	5,302
Female (%)	17.0%	34.5%	17.7%	16.7%	32.1%	17.4%

	Returned Reviews[d]			Requests for Reviews[d]		
Gender	**Ad Hoc**	**Panel**	**All**	**Ad Hoc**	**Panel**	**All**
Female	913	653	1,566	1,385	2,897	4,282
Male	4,194	1,054	5,195	6,448	4,940	11,388
Unknown	361	59	418	552	319	871
Total	5,468	1,766	7,179	8,385	8,156	16,541
Female (%)	17.9%	38.3%	23.2%	17.7%	37.0%	27.3%

Female/Male Workload Ratio	**Ad Hoc**	**Panel**	**All**	**Ad Hoc**	**Panel**	**All**
Proposals/Female Reviewers	1.78	9.20	2.86	1.80	22.63	5.07
Proposals/Male Reviewers	1.67	7.81	2.04	1.68	18.23	2.84
Ratio	1.06	1.18	1.40	1.07	1.24	1.78

* FY06, Proposal Reviewer and Panelist Gender and Workload, where the % Female numbers represent the contribution of females divided by both males and females. Those of unknown gender are excluded from the percent calculations as the Female/Male (F/M) ratio among these is assumed to be the same as that of those of assigned gender. Also, the data indicate the number of individuals, some of who served as both Ad Hoc and Panel reviewers. Consequently, the total number of reviewers does not equal the sum of females and males. This accounts for the F/M workload ratio of all reviewers and panelists being higher than either reviewers or panelists alone.

Source:
d. NSF Data.

Table 4. National Science Foundation, Division of Chemistry
Principal and Co-Principal Investigators by Gender, Race/Ethnicity and Disability
FY06

By Declared Gender[d]	No.	%
Female	411	17.6%
Male	1,924	82.4%
Total	2,404	

By Race/Ethnicity[d]	No.	%		2000 U.S. Census %[c*]	All Chemistry Ph.D.s 2003 %[a]
African American	44	1.8%		12.0%	1.9%
Asian	243	10.1%		3.6%	18.0%
Hawaiian/Pacific Islander	2	0.1%		0.1%	NA**
Hispanic	71	3.0%		12.5%	2.1%
Native American	10	0.4%		0.9%	0.4%
Some Other Race	NA**	NA**		5.5%	0.0%
Unknown	68	2.8%		NA**	NA**
White	1,963	81.8%		75.0%	NA**
Total	2,401				

By Disability[d]	No.	%	
Hearing Impaired	11	0.7%	
Mobility Impaired	7	0.5%	
Vision Impaired	3	0.2%	
Other Impairment	5	0.3%	
None	1,472	98.3%	
Total	1,498	1.7%	

*Percentages calculated by dividing population of one race/ethnicity by total population.
** Not Available

Sources:
a. National Science Foundation/Division of Science Resources Statistics, 2003 Survey of Doctorate Recipients.
c. 2000 U.S. Census.
d. NSF Data.

Table 5. Selected Characteristics of Civilians 25 to 64 Years Old With a Work Disability, by Educational Attainment 2005 (Numbers in Thousands)

	Total No.	No. with Disability	%	No. with No Severe Disability	%	No. with Severe Disability	%
25 to 64 years old	153,434	17,948	11.7%	4,904	3.2%	13,044	8.5%
High school graduate	47,945	6,849	14.3%	1,651	3.4%	5,198	10.8%
Associate's degree or some college with no degree	41,238	4,361	10.6%	1,583	3.8%	2,778	6.7%
Bachelor's degree or more	45,401	2,343	5.2%	1,077	2.4%	1,265	2.8%

A severe disability is essentially one that prevents a person from working; see http://www.census.gov/hhes/www/disability/cps/cpstableexplanation.pdf.

Source: http://www.census.gov/hhes/www/disability/cps/cps105.html.

Table 6. Demographics of 2007 CHE Committee of Visitors

Gender/Race/Ethnicity	2000 U.S. Census	% of COV Members	No. of COV Members
Male	49%	59%	17
Female	51%	41%	12
African American (C)	12.0%	10%	3
Asian (B)	3.6%	7%	2
Hawaiian/Pac Isl (HA)	0.1%	3%	0
Native American (NA)	0.9%	7%	2
Hispanic (H)	12.5%	17%	5
White (W)	75%	55%	16

Appendix III. Additional Resources

NSF Strategic Plans
2003-2008 http://www.nsf.gov/pubs/2004/nsf04201/FY2003-2008.pdf
2003-2011 http://www.nsf.gov/pubs/2006/nsf0648/nsf0648.jsp

NSF Proposal and Award Manual (PAM)
http://www.inside.nsf.gov//pubs/pam/pam1205/toc.htm

NSF Human Capital Management Plan 2003
http://www.inside.nsf.gov/oirm/hrm/wpab/human_capital/human_capital_management_plan_version_final_12.31.03.doc

NSF GPRA Performance Report
http://www.nsf.gov/about/performance/index.jsp
http://www.nsf.gov/pubs/2007/nsf0701/toc.jsp

NSF Gender Equity Workshop
http://www.chem.harvard.edu/groups/friend/GenderEquityWorkshop/

ADVANCE Websites www.advance-portal.net
U Michigan http://Sitemaker.umich.edu/advance Georgia Tech http://www.advance.gatech.edu
U Washington http://www.engr.washington.edu/advance/ U Wisconsin http://wiseli.engr.wisc.edu

Federal Statutory Definitions of Disability
http://www.icdr.us/documents/definitions.htm

CAWMSET Report
http://www.nsf.gov/od/cawmset/

Diversity in the Sciences: Action Plans 2006
http://www.williams.edu/biology/divsciences/

Donna Nelson's Chemistry Top 50:
http://cheminfo.chem.ou.edu/faculty/djn/diversity/top50.html

ACS 2006 Employment & Salary Survey
http://pubs.acs.org/cen/employment/84/8438salary.html

Tutorials for Change: Gender Schemas & Science Careers
http://www.hunter.cuny.edu/gendertutorial/tutorials.htm

STRIDE Faculty Recruitment Workshops
http://www.umich.edu/~advproj/handbook.pdf

Implicit Association Tests
https://implicit.harvard.edu/implicit/australia/selectatest.jsp