Objectives and Goals
This proposal to the ADVANCE program of the National Science Foundation establishes AFFIRM (Advancement of Female Faculty: Institutional climate, Recruitment and Mentoring) at the University of San Diego (USD). AFFIRM will enhance efforts to recruit women faculty, in particular women of color, in the STEM and social/behavioral science disciplines. AFFIRM will also improve the experiences and career development of all women faculty through climate initiatives, mentoring and professional development. AFFIRM has three interconnected goals:

Goal 1: Foster an environment that understands, embraces and supports a diverse faculty
Action 1.1: Establish baselines for institutional climate and measure perceptions of institutional factors related to hiring and advancement.
Action 1.2: Utilize interactive theatre to engage faculty and administrators in a campus-wide dialogue on issues affecting female faculty, particularly female faculty of color.

Goal 2: Recruit women faculty, with a particular emphasis on women of color
Action 2.1: Create and implement new faculty recruitment strategies to attract women faculty, especially women of color.

Goal 3: Support the retention and advancement of female faculty
Action 3.1: Implement workshops that target key career transition points and necessary skills, and address other barriers identified through the Climate Survey and Focus Groups.
Action 3.2: Establish a comprehensive mentoring program.
Action 3.3: Host Visiting Distinguished Professors who will address strategies to retain and advance female faculty, especially female faculty of color.

AFFIRM has the university’s full support. The Provost has committed to institutionalizing project initiatives and creating new faculty lines for women of color, once strategies are in place to support and retain them. AFFIRM’s aims will ensure a long-term impact on the institution and will contribute to the increased participation of women faculty, particularly women of color, in the STEM and social/behavioral disciplines.

Overview of the University, College and Engineering Programs
The University of San Diego (USD) is a Roman Catholic institution committed to advancing academic excellence, expanding liberal and professional knowledge, creating a diverse and inclusive community, and preparing leaders dedicated to ethical conduct and compassionate service. The university enrolls more than 7,500 total students including 5,388 undergraduate students, with 55% female students and 31% students from underrepresented racial and ethnic groups.

The College of Arts and Sciences (CAS) offers STEM baccalaureate degrees in biology, biochemistry, chemistry, computer science, marine science, mathematics and physics, as well as social/behavioral science baccalaureate degrees in psychological sciences and sociology. The College emphasizes a commitment to teaching as well as excellence in scholarship, and has won national acclaim for its attention to the liberal arts, the formation of values, and community service.1 Hallmarks of the College include individualized student attention expressed through small classes, faculty-led advising, and undergraduate research opportunities.
The Engineering Programs at USD offer ABET-accredited undergraduate degrees in electrical engineering, mechanical engineering, and industrial and systems engineering. They are ranked 21st by U.S. News and World Report in their listing of ‘Best Undergraduate Engineering Programs’ in the nation for schools whose highest degree is a bachelor’s or master’s. Unique to USD is the dual B.S./B.A. degree for all engineering students, emphasizing a well-rounded holistic education within a personalized, laboratory-intensive curriculum.

Background
Volumes of literature in the past decade have documented the need to increase the participation of women and historically underrepresented groups in the STEM work force. Despite this resounding call to action, and the fact that women earned 43% of STEM doctorates awarded to U.S. citizens and permanent residents in 2004, male STEM faculty continue to outnumber female STEM faculty by more than 2 to 1 nationwide. The percentage of doctorates earned by historically underrepresented groups has increased substantially over the past few years, yet fewer than 10% of faculty (men or women) at four-year institutions are African American, Hispanic or Native American. The 2010 National Academies report further states that the U.S. is clearly at a “crossroads” and that “the most underrepresented groups in STEM are among the fastest growing in the population”.

The University of San Diego began systematically addressing issues of diversity in the 1990s and has made some progress. Women and faculty of color were grossly underrepresented in the early 1990s, for example, and campus discussions about institutional sexism and racism were relatively mute. With funding in the late 1990s from an institutional grant from the Irvine Foundation to examine issues of diversity, USD implemented numerous changes that began to have an impact, most recently culminating with the USD Presidential mandate to support diversity initiatives as part of the University’s strategic planning efforts. The proposed AFFIRM initiatives will build on these changes and promising directions by specifically targeting issues related to women faculty in the STEM and social/behavioral science disciplines, with an emphasis on women of color.

Status of, and Challenges, to Gender, Racial and Ethnic Faculty Diversity at USD
Table 1 shows the current USD gender diversity for faculty in STEM and social/behavioral science departments. There are 91 total tenured or tenure track faculty in these departments, with 41% female faculty. Excluding the social/behavioral science departments, 33% are female faculty. With the exception of 3 departments, the percentage of female faculty is good to excellent. The Department of Physics and the Program in Industrial and Systems Engineering have one female faculty member each, while Mechanical Engineering has no women faculty.

The percentages of female faculty members at different ranks parallel the percentages of the group as a whole. Thus for the STEM and social/behavioral sciences combined, there are 38% female faculty at the full professor rank, and 42% each at the associate and assistant professor rank. For the STEM departments only, 34% of the full professors are female, with 33% female associate professors and 29% female assistant professors.
Table 1. Gender Diversity in USD STEM and Social/Behavioral Science Departments

<table>
<thead>
<tr>
<th>Department</th>
<th>Male Full Prof</th>
<th>Male Assoc Prof</th>
<th>Male Asst Prof</th>
<th>Female Full Prof</th>
<th>Female Assoc Prof</th>
<th>Female Asst Prof</th>
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<td>14</td>
<td>13</td>
<td>11</td>
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</tbody>
</table>

More sobering are the data regarding racial and ethnic diversity among faculty in the STEM and social/behavioral disciplines (Table 2). There is only one African-American faculty member, a male full professor in Electrical Engineering. There are four Hispanic faculty members: a male full professor in Biology, Latina associate professors in the Departments of Mathematics and Computer Science and Sociology, and a Latina assistant professor in Psychological Sciences. There is one female Filipino associate professor in Psychological Sciences.

In the last few years, the upper-administration at USD has experienced dramatic turnover. Therefore, the changes proposed by AFFIRM are timely. Currently, USD has significant representation of women in its academic leadership: the President, Executive Vice-President and Provost, three of six Deans (including the Dean of the College of Arts and Sciences), as well as the Director of Engineering Programs, and the Chairs of the Departments of Chemistry/Biochemistry and Sociology, are women.

With both the national imperative to engage those from underrepresented groups in the STEM and social/behavioral disciplines, as well as the need for a faculty that mirrors the gender, racial and ethnic diversity of USD’s student population, it is critical that USD implement the AFFIRM initiatives that will measure and address issues of climate, implement recruitment practices that will attract women faculty, particularly women of color, and provide the professional development resources needed to retain and advance all women faculty in the STEM and social/behavioral science disciplines.
Table 2. Racial and Ethnic Diversity in USD STEM and Social/Behavioral Departments

<table>
<thead>
<tr>
<th>Department</th>
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<td>F</td>
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<td>Engineering</td>
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<tr>
<td>Social and Behavioral Sciences</td>
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AFFIRM PROJECT INITIATIVES
Goal 1: Foster an environment that understands, embraces and supports a diverse faculty
Action 1.1: Establish baselines for institutional climate and measure perceptions of institutional factors related to hiring and advancement

While numerous studies vary in specific recommendations for remedying the underrepresentation of women and people of diverse racial and ethnic groups on university faculties, all note that “climate” at the personal, departmental and university level is critical to attracting and advancing these individuals. Research suggests that assessing climate is valuable because the underrepresentation of women in STEM is convincingly explained by an academic culture that provides women fewer opportunities, limited support, and inequity in leadership.11 The cross-campus collaborative efforts in AFFIRM will begin with a survey to generate information about attitudes and perceptions about campus climate and retention and advancement efforts affecting women faculty and faculty of color, creating a benchmark for future assessment.

Using a cross-sectional approach, the climate survey will examine differences in perceptions by gender, race and ethnicity of institutional climate and specific academic work environments. Climate-related concepts will include perceptions of diversity, collegiality, leadership, mentoring, work/family balance and institutional support and inequities. Respondents will also provide demographic information. All data collection procedures will be approved by the USD Institutional Review Board. Survey responses will be anonymous and the identities of respondents will be protected.
The AFFIRM team will administer a tested and validated survey instrument that has been used at both the University of Michigan and University of Colorado as part of their NSF ADVANCE programs.\textsuperscript{12,13} It will include additional questions regarding USD’s Catholic identity as it relates to institutional policies. The survey will be conducted using an online, commercially-available tool (SurveyMonkey), and data will analyzed with SPSS, a statistical analysis software program. To ensure a high response rate, faculty will receive an email invitation from the Provost describing the importance of the study, requesting their participation, and directing them to the survey link. Two subsequent emails will serve as reminders to non-respondents. A reminder phone call from the Provost’s office will serve as a third contact, encouraging remaining non-respondents to participate and offering a paper-format survey as an alternative. The aim is to receive a response rate of at least 70%. Parametric and non-parametric statistical tests will be used to examine differences on diversity indicators and climate measures by gender, rank, ethnicity and relevant demographic characteristics.

AFFIRM will employ focus groups to obtain additional data regarding climate. Focus groups provide a method to obtain information from groups that are often marginalized and might be put off by or be unresponsive to direct questioning in an interview setting or through surveys.\textsuperscript{14} Madriz suggests that within the cultures of women of color, particularly African Americans, Asians, Latinas, and Native Americans, conversations with other women about problems and feelings are the norm and that a group setting is more familiar and comfortable than a one-on-one interview where power clearly rests with the interviewer.\textsuperscript{14} Separate focus groups will be held for male and female faculty from the STEM and social/behavioral sciences. Questions for the focus groups will be designed using major themes and responses from the climate survey. A systematic process as described by Krueger\textsuperscript{15} will be employed to prepare data collection and analysis.

The results of the climate study and focus groups will inform AFFIRM initiatives including content for professional advancement workshops, the Interactive Theatre initiative, selection of the Visiting Distinguished Professors, and allow for longitudinal evaluation of campus climate.

**Action 1.2: Utilize interactive theatre to engage faculty and administrators in a campus-wide dialogue on issues affecting female faculty, particularly female faculty of color**

Interactive theatre, an innovative methodology to engage faculty in difficult dialogues and sensitive subjects, has been used with great success at several universities with funding from NSF ADVANCE.\textsuperscript{16} Interactive theatre uses actors and a “sketch” of a social problem to enact complex scenes related to a social issue. The enactment accomplishes what many didactic faculty workshops attempt to convey, but differs because faculty become involved in generating interventions and possible solutions to the problem. Audience members may also contribute on-stage, replay scenarios, or criticize or comment on the actors (still in their roles) to gain a deeper understanding of the issue at hand. A trained facilitator moderates the activities, beginning with a presentation about research related to the interactive scenes and later guiding the exchange between the audience and the actors. The facilitator helps the audience uncover subtle biases in the actors’ comments, points out implicit assumptions or fallacies related to the discourse, and creates dialogue about the efficacy of audience interventions. The presentation concludes with questions from the audience, and the facilitator provides relevant resource and action-based strategies.
Interactive theatre programs in AFFIRM will involve faculty and chairs from STEM and social/behavioral disciplines, as well as deans and other administrators, as audience members to probe and deepen their understandings about issues related to recruitment of women faculty, especially women of color, mentoring, family/work balance, and tenure/promotion. AFFIRM will contract with the well-established InterACT Performance Troupe to design specific curricula that address the needs of USD based on the outcomes of the climate survey and focus groups. The four-hour curriculum will include interactive scenes and a facilitated presentation with current research focusing on women and racial/ethnic diversity in academia. Sessions will be offered twice per year during Years 2 and 3 of the grant period.

Goal 2: Recruit women faculty, with a particular emphasis on women of color
The STEM and social/behavioral departments at USD anticipate 9-15 faculty searches over the next five years. Recruitment of female faculty, with particular attention to women of color, into these lines is critical to addressing the status of women at USD. Our goal is to fill at least 40% of the lines with women of color. Even in the recent difficult economic times, USD has continued to recruit and hire into faculty lines, including several new lines. In addition, the Provost has committed to creating at least two additional faculty lines as targets of opportunity with the highest priority those disciplines in the STEM and social/behavioral science disciplines lacking women and women of color. (See letter of support from Provost Sullivan).

Bilimoria and Buch argue that traditional recruitment procedures perpetuate a white, male-dominated faculty. They maintain that current practices are passive, time-limited, non-inclusive and run by search committees that are most likely not diverse, lack expertise in hiring practices and thus are bias-prone. As with other institutions that have received ADVANCE funding, e.g. Utah State University, Cornell University, and the University of Texas-El Paso, our recruitment efforts will focus on three central parts of the search process: institutional commitment to diversity, reduction of evaluation errors and bias, and providing resources and materials for inclusive searches.

Action 2.1: Implement new faculty recruitment strategies to attract women faculty, especially women of color.
A study published in 2006 by the Committee on Women in Science and Engineering of the National Research Council lists challenges for recruiting women faculty including 1) perceptions that working conditions are more negative for female than male faculty; 2) lack of diversity within the department may dissuade people from applying; 3) search committees cast the net too narrowly; and 4) women are more rigorously evaluated than their male counterparts.

At USD, faculty searches currently utilize a passive recruitment approach. AFFIRM aims to change this practice and establish campus-wide systematic recruitment procedures to enhance diversity. Early efforts, suggesting opportunities for deeper change, are underway. For example, this year the USD Provost organized a Task Force to develop resources to enhance faculty diversity through more effective search and recruitment practices. The Task Force will develop written faculty recruiting guidelines and a Toolkit for conducting proactive, inclusive searches for current hires. The Toolkit will provide faculty the resources needed to integrate best practices for achieving diversity into their recruiting and hiring procedures. It will include information on proactive recruiting strategies as recommended by Turner as well as a comprehensive list of external conferences and seminars that provide opportunities for faculty to
engage in diverse recruiting and networking. AFFIRM intersects with these efforts by providing a platform to target the development of resources for the recruitment of African-American, Latina, and Native American women in the STEM and social/behavioral science disciplines.

The USD Center for Educational Excellence (CEE), in partnership with AFFIRM, will develop and launch a series of recruiting workshops and training sessions on use of the Toolkit, as well as workshops on evaluating and improving cross-cultural competency and uncovering and eliminating hidden biases; cultivating the support, retention, and advancement of new faculty. All departments searching for new faculty members will be required to have representatives at these workshops. The department will also prepare a detailed recruitment plan to submit to the Dean and EEO/AA Director that describes the selection and training of the search committee, plans for advertising the position, and a strategy to welcome and support the new faculty member through promotion to full professor. AFFIRM will also provide funds for travel to targeted conferences for recruitment of women of color.

Goal 3: Ensure the retention and advancement of female faculty

Action 3.1: Implement workshops that target key career transition points and necessary skills, and address other barriers identified through the Climate Survey and Focus Groups

Women, and in particular women of color, are more likely to drop out of academia or choose non-tenure track options compared to their male counterparts. Studies have shown that faculty of color are less satisfied with their careers in academia compared to their white male counterparts across all ranks. Issues of dissatisfaction include feelings of isolation, increased demands for advising or campus service and work/family balance. Two junior women faculty in the STEM disciplines have recently left USD, one citing climate issues, the other lack of support. Such losses at a small campus signal the imperative for providing attention to climate and mentoring.

New faculty require opportunities to develop community and navigate their institutions, and the CEE currently offers several workshops and social events targeted at new faculty. However, more is needed to assist women faculty through the progression of their career. To respond to these needs, the CEE, in partnership with AFFIRM, will develop and offer targeted workshops. These workshops will be offered periodically throughout the grant period and will continue after funding ends. AFFIRM will provide stipends for workshop participation.

- **Enhancing Work/Life Balance** – A recent post-ADVANCE survey at the University of Rhode Island found that 16% of respondents reported that work-life themes were the best part of the ADVANCE program. CEE/AFFIRM workshops will focus on various aspects of the work/life balance including time management, stress reduction, and wellness. As women of color are hired into faculty positions, additional workshops will be offered to broaden the campus-wide discussions on specific issues, including tokenism, service committee overloads, excessive student advising and campus diversity work that disproportionately falls on women of color. Institutional issues exploring alternative family/work policies will be broached in workshops. Similarly, issues such as “bias acceptance”, “bias resistance” and “daddy privileges” will also be discussed.

- **Tenure and Promotion Workshops** – USD has a robust review system for untenured faculty, with multiple pre-tenure full reviews (at the Department, College, Dean, Provost and President levels). Workshops will assist faculty in preparing for these key transition
points. Separate workshops will be arranged for associate professors to continue their advancement to full professor. Additionally, workshops will be offered to enhance leadership abilities for those faculty interested in administrative positions. These will be modeled after the University of Washington ADVANCE project.\textsuperscript{33}

- **Professional Writing: Grants and Scholarly Work**— In conjunction with the USD Office of Sponsored Programs, workshops will assist faculty in identifying funding sources and preparing successful proposals. Workshops will also be offered on prolific writing techniques to assist faculty with the preparation of scholarly manuscripts.

**Action 3.2: Establish a comprehensive mentoring program**

Since mentoring is important to faculty success but is an area where inequities persist, AFFIRM will establish a mentoring program for women faculty in STEM and social/behavioral science disciplines. Boyle and Boice showed that less than a quarter of new faculty found mentors on their own and that those that did tended to be white males (both mentor and mentee).\textsuperscript{34} They described a successful inclusive structured mentoring program which includes mentors from outside the department. Levinson et al. report that women in academic medicine who are mentored have more publications and higher overall career satisfaction than those who are not.\textsuperscript{35} All new faculty face challenges of developing courses and establishing an independent research program. Women faculty and under-represented faculty may face additional pressures including increased demands for service, increased requests for mentoring racially/ethnically diverse students and potentially feelings of isolation at a predominantly white university.\textsuperscript{10,36} Regular meetings with the Chair and/or mentors have been shown to ease the transition and to address these issues as they develop.\textsuperscript{10} According to Justus et al. the first three years are critical in terms of success of women and underrepresented faculty and special consideration should be given to reduced teaching and service as well as careful mentoring during this period.\textsuperscript{37}

AFFIRM will include a comprehensive mentoring program that will prepare pre-tenure women faculty members (mentees) in STEM and social/behavioral disciplines to successfully advance at USD, as well as establish the positive respect of their colleagues outside the institution. Each mentee will work closely with two faculty mentors at USD, including one tenured faculty member from the mentee’s home department (the department mentor), and a second mentor from a different department in the STEM and social/behavioral disciplines (the “external” mentor). The mentoring model envisions that both the mentors and mentees will learn from each other, with mutual respect through honest collaboration and successful professional development. The mentors will attend CEE workshops, developed through AFFIRM, on cultural competency and gender-informed mentoring strategies which emphasize egalitarian rather than hierarchical approaches.\textsuperscript{38} AFFIRM will provide stipends for workshop participation.

The department mentor will assist the mentee with teaching, the development of a research program and working with undergraduate research students. The external mentor will provide a wider perspective on the USD community, assist in making connections with faculty in other departments, and provide a safe sounding board for issues a new faculty member may be reluctant to discuss with faculty in her home department who will be voting on her re-appointment and tenure.
Gibson found that the politics of the university and department had a large influence on mentoring of female faculty. It is important that the mentoring activities be valued and rewarded by the administration in terms of promotion and merit pay. Thus the mentors will be selected through a competitive process, with recognition as part of the annual review process that mentoring is a valued activity. As part of the university’s commitment to the mentoring program, mentors will be compensated financially or through teaching reassignment.

During their first two years, new women faculty will receive additional resources from the institution to travel to conferences or to meet with collaborators. The new faculty will also receive information and encouragement to take advantage of mentoring opportunities outside USD such as Project NExT and the ADVANCE-supported MentorNet initiative.

**Action 3.3: Host Visiting Distinguished Professors who will address strategies to retain and advance female faculty, especially female faculty of color**

Given the small numbers of women of color on the faculty at USD and particularly in the STEM and social/behavioral science fields, it is important to provide opportunities for the USD campus to interact with scholars in these disciplines who are women of color. A Distinguished Visiting Professor Program will be established to annually bring noted scholars in STEM and social/behavioral science disciplines who will serve as role models of successful women of color. Role models can be particularly important to helping advance the careers of women faculty. Based on our review of many visiting scholar programs funded by ADVANCE and a conversation with Dr. Eve Riskin, co-PI of the University of Washington’s ADVANCE IT grant, we propose short visits modeled on the UW ADVANCE Center for Institutional Change Visiting Scholar's Program. This program features nationally-recognized scholars working in STEM or in fields that study STEM workforce issues. The Visiting Scholars Program provided networking opportunities for faculty, visibility for women scholars, and opportunities for faculty and scholars to work together to highlight research in issues surrounding gender and STEM, review programs and goals, and develop collaborations. Given the smaller size of USD compared with UW, our program will also be on a smaller scale and will focus on women of color.

For each visit, the Distinguished Visiting Professor will spend 2-3 days at USD. During this time she will:

- Present a workshop for interested faculty on a topic of shared interest such as balancing work and family, negotiating campus climate, or life transitions in academia.
- Present a public lecture at a level appropriate for students and the general public
- Meet with interested faculty, particularly junior women faculty in STEM and social/behavioral disciplines
- Meet with the AFFIRM Project Team to provide input on its initiatives
- Meet with USD campus leaders such as the President, Provost, Department Chairs, EEO/AA Director, and Director of the Center for Inclusion and Diversity.

Table 3 includes a list of possible Visiting Distinguished Professors. Note that the ones with an asterisk have been contacted and are willing to come. The final selections will be informed by the needs expressed through the climate survey and focus groups.
TABLE 3. Possible USD AFFIRM Distinguished Visiting Professors

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
<th>Race/Ethnicity</th>
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<td>Robyn Hannigan*</td>
<td>Prof. and Chair, Environmental, Earth and Ocean Sciences</td>
<td>U. Mass. Boston</td>
<td>Native American</td>
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<tr>
<td>Camellia Okpodu*</td>
<td>Prof. Biology</td>
<td>Norfolk State Univ.</td>
<td>African American</td>
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<tr>
<td>Bevlee Watford*</td>
<td>Interim Dept Head, Engineering Education and Director, Center for Enhancement of Engineering Diversity</td>
<td>Virginia Tech</td>
<td>African American</td>
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<td>Ermelinda De Lavina</td>
<td>Prof. Mathematics</td>
<td>Univ. of Houston</td>
<td>Latina</td>
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<tr>
<td>Gabriela Gonzalez*</td>
<td>Prof. Physics</td>
<td>Louisiana State University</td>
<td>Latina</td>
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<td>Maxine Baca Zinn</td>
<td>Prof. Sociology</td>
<td>Michigan State University</td>
<td>Latina</td>
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<td>Vonnie McLoyd</td>
<td>Prof. Psychology</td>
<td>U. Mich.</td>
<td>African American</td>
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Relationship of AFFIRM to other USD initiatives
A recent report by the National Academy of Sciences underscored the necessity of strong leadership from, and involvement of, trustees and the administration including the president, provost, deans, and department chairs in a campus-wide effort at inclusiveness including a plan to implement change and ongoing evaluation of the implementation efforts. USD has just completed the first phase of its reaccreditation review by the Western Association of Schools and Colleges (WASC). As evidence of USD’s commitment to diversity, one of the themes for its WASC reaccreditation is “Advancing Diversity in Campus Structure, Climate and Curriculum”. This WASC theme centers upon the recruitment, retention and success of students, faculty and staff from diverse backgrounds, as well as the development of cultural competence. Some progress has been made at the student level as the percentage of students from underrepresented groups has risen from 22% in 2000 to 31% in 2010. However, much work remains to be done at the faculty level. AFFIRM responds to the imperative to recruit and retain women faculty of color to enhance teaching and scholarship through the varied interests, experiences and viewpoints contributed by a diverse faculty, and provide a variety of role models to students in the STEM and social/behavioral disciplines.

Diversity and Inclusion is also one of USD’s strategic priorities, and the Center for Diversity and Inclusion (CID) has recently been established on campus. The purpose of CID is to advise the university community on issues, policies and practices that affect USD’s commitment to inclusion and diversity and to promote awareness and discussion by forming collaborative relationships across campus through forums, events, and initiatives. CID will partner with AFFIRM through the recruitment workshops, interactive theatre, and administration of the Climate Survey, and the CID Director will be part of AFFIRM’s management team.

Management Plan and Qualifications of the Project Team
The AFFIRM Project Team is a cross-disciplinary group of STEM and social/behavioral science faculty, staff and administrators from USD. Dr. Mary Boyd, Dean of the College of Arts and Sciences and Professor of Chemistry, will serve as PI. She has a strong record in championing...
efforts to promote opportunities in science for faculty and students from underrepresented
groups. As department chair in chemistry at her prior institution, Dr. Boyd hired two faculty of
color, including one female, as well as an additional female faculty member.

The AFFIRM Project Team includes co-PI Dr. Michelle Camacho, Associate Professor and
Associate Chair of Sociology and affiliated faculty member in the Ethnic Studies Department.
Dr. Camacho is Latina with extensive experience as a social science methodologist in both
qualitative and quantitative research techniques. She will lead both Actions 1.1 and 1.2, the
Campus Climate Survey and Interactive Theatre, respectively. Dr. Lisa Baird, Professor of
Biology, served as Department Chair for 16 years. During that time she grew the department
from 6 to 14 tenured/tenure-track faculty including hiring 3 women and one Hispanic male. Dr.
Baird will oversee Goals 2 and 3. Dr. Sandra Sgoutas-Emch, co-PI and Professor of
Psychological Science, serves as Director of the Center for Educational Excellence (CEE). Dr.
Sgoutas-Emch has broad experience in promoting diversity and inclusion at USD. She will be
responsible for the creation and implementation of workshops on faculty development,
recruitment and cultural competency, in Actions 2.1 and 3.1. Dr. Perla Myers, co-PI and
Associate Professor of Mathematics, will co-lead Action 3.2, the mentoring initiative, with Dr.
Jane Friedman. Dr. Myers is Latina, a lifetime member of the Society for the Advancement of
Chicanos and Native Americans in Science (SACNAS) and a co-founder of the Southern
California and Nevada Project NExT chapter, a mentoring organization for new professors. Dr.
Jane Friedman, Professor of Mathematics, has mentored numerous junior female faculty and has
broad experience serving on promotion and tenure committees. Dr. Susan Lord, co-PI, Professor
and Coordinator of Electrical Engineering, will lead Action 3.3, the Distinguished Visiting
Professor initiative. Dr. Lord’s published research includes work on gender in engineering and
pedagogical practices in engineering education.

A carefully designed oversight and management plan will ensure the success of AFFIRM (Figure
1). The Project Team, consisting of the PI, co-PIs, and other Senior Personnel, will meet
monthly. Three subcommittees will directly monitor the activities associated with the three
goals. An External Advisory Board (EAB) will meet annually to provide feedback to the Project
Team. The EAB members include Dr. Sue V. Rosser, Provost of San Francisco State University
and Professor of Women’s Studies and Sociology, who is an international expert on women in
science and engineering. She served as co-PI of Georgia Tech’s ADVANCE grant, and has
served on the advisory boards for many other ADVANCE grants. Dr. William Yslas Vélez,
Professor of Mathematics at University of Arizona, is a lifetime member and former SACNAS
president, with broad experience in minority retention initiatives. Dr. Vélez has received
numerous awards including the President's Award for Excellence in Science, Mathematics and
Engineering Mentoring Program, and the National Science Foundation Director's Equal
Opportunity Achievement Award. Dr. Erin Leahey is an Associate Professor of Sociology at the
University of Arizona. Her research focuses on scientific practice and scientific careers. She has
explored gender and inequalities in faculty career trajectories.
Figure 1. AFFIRM Management Structure

Dissemination
The PI and co-PIs commit to preparing reports documenting the introduction of all initiatives, the successes and lessons learned, and evaluation of data showing the effectiveness of each initiative. We will also develop a project website that will include relevant information on the program, including the proposal, all reports and the results. This site will serve as a resource for other institutions interested in implementing similar initiatives.

We will present at disciplinary conferences including the American Chemical Society, Mathematical Association of America, American Sociological Association, the American Educational Research Association, Frontiers in Education, American Society for Engineering Education, American Psychological Association, and SACNAS. Finally we will submit to academic and professional journals such as Academe, Frontiers: A Journal of Women Studies, Journal of Black Studies, Research in Higher Education, and the Journal of Women and Minorities in Science and Engineering. We anticipate that these publications and presentations will address topics such as the application of Interactive Theatre in fostering a diverse institutional climate; changing the climate at a faith-based institution; participatory action in hiring practices at liberal arts institution; creating dialogues on diversity and dealing with sensitive subjects to promote campus-wide change.

Timeline for Implementation
The AFFIRM initiatives will be sequenced according to Table 4. Results from the climate survey and focus groups will be used to inform the specific topics for the Interactive Theatre, Workshops and final selection of the Visiting Distinguished Professors.
### Table 4. AFFIRM Timeline

<table>
<thead>
<tr>
<th>Goal 1</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<tr>
<td>Climate survey</td>
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<td>Focus groups</td>
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<td>(Action 1.1)</td>
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<td>Interactive theatre</td>
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<td>(Action 1.2)</td>
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<td>Goal 2</td>
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<td>Recruitment efforts</td>
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<td>Goal 3</td>
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<td>Workshops (Action 3.1)</td>
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<td>Mentoring (Action 3.2)</td>
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<td>Visiting Dist. Prosfs (Action 3.3)</td>
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<td>Dissemination</td>
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<td>Project evaluation</td>
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<td>Adv Board Meeting</td>
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### Sustainability and Institutional Commitment

USD is fully committed to achieving the AFFIRM project goals and will assume costs for continuation of all successful initiatives at the conclusion of the grant funding. All recruitment initiatives, including use of the guidelines, the Toolkit and workshops will be institutionalized as requirements for faculty searches. Workshops from Action Item 3.1 targeting faculty professional and personal development will continue to be offered. Throughout the grant period, USD will provide an additional $1000 for the Distinguished Visiting Professor’s honoraria. After the grant is over, USD will continue to fund one Distinguished Visiting Professor annually and provide travel funds for recruitment, dissemination and faculty professional development.

In addition to the AFFIRM initiatives, USD will support new faculty hires by providing them with the labs, equipment and other resources they need to initiate an independent research program. USD will also offer a reduced teaching load during their first and second years so that new faculty can make progress on developing their research agenda. New faculty will also receive funding from the Summer Undergraduate Research Experience (SURE) program which provides a summer stipend for both faculty and student, as well as funds for supplies. The SURE support will initially be funded by AFFIRM, with institutional support after the conclusion of the grant period. Finally, as noted earlier, the Provost has also committed to creating new faculty lines as targets of opportunity in the STEM and social/behavioral science disciplines.
Project Evaluation
The evaluation plan for AFFIRM will be informed by Patton’s process and utilization-focused evaluation model.\textsuperscript{44} A focus on process allows an examination of how events happen as well as an analysis of outputs and outcomes. The evaluation design will also take into account the work of organizational theorist Chris Argyris who differentiates between “espoused theories” and “theories of use”.\textsuperscript{45} Attending to the difference between the ideal and the actual can support the development of a plan and improve its effectiveness.

Using qualitative research methods, the evaluation will describe, analyze and synthesize the major components of the proposed study (Table 5). Both formative and summative data will be gathered and shared with the Project Team so that positive changes can be made in project component implementation during the project. Data will also be used for annual NSF reports.

The Project Evaluator, Dr. Lea Hubbard, is a Professor in the School of Leadership and Education Sciences at USD. She has broad experience in qualitative and quantitative evaluation, and has co-authored several books and articles on the academic achievement of minority students, gender and education, educational leadership and school reform. Dr. Hubbard has received funding from the Spencer Foundation, Broad Foundation, Ford Foundation and the U.S. Dept. of Education. She teaches qualitative research methods, policy-making, multi-cultural foundations of education, gender and education, and sociology of education.

Results from Prior NSF Support
This work debunked the myth that women drop out of engineering at higher rates than men, showing that women matriculants of all races persist and graduate in engineering at similar rates as men.\textsuperscript{46,47} Disciplinary and institutional variation were also studied showing that engineering student trajectories are nonlinear and racialized.\textsuperscript{48} A climate survey of engineering undergraduates examined how students perceive climate and how attitudes vary by gender.\textsuperscript{49}

S-STEM Bridging the gap between local community colleges and engineering at the University of San Diego. \textit{PI:} M. McGarry; \textit{Co-PIs:} M. Huang, S. Lord, and R. Olson, NSF Grant No. 0806864, Amount: $413,848; Period: July 2008 – June 2013.
This grant provided scholarship funds for academically talented but financially needy students who transferred from community colleges into the USD Engineering program. A cohort of 7 students entered in Fall 2009 and another cohort of 5 students entered in 2010. We have recruited a diverse group including 2 women, 2 Latinos, and 2 African American men.

The USD Noyce Scholarship Program. \textit{PI:} E. Page; \textit{Co-PIs:} J. Friedman, J. Kua, J. Spencer, L. Baird, NSF DUE 0934717, Amount: $899,124; Period: 9/01/09-8/31/14
This collaboration between USD’s College of Arts and Sciences and the School of Leadership and Education Sciences will add 12 highly skilled science and mathematics teachers to Southern California over the next 5 years. The project team has successfully recruited the target number of six scholars in the first two cohorts, including three students of color.
<table>
<thead>
<tr>
<th>Action Items</th>
<th>Method</th>
<th>Timeline</th>
</tr>
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<tbody>
<tr>
<td>Action 1.1: Conduct Climate Survey and Focus Groups</td>
<td>• Assess alignment of Climate Survey and Focus Group outcomes with topics selected for workshops, recruitment strategies and Interactive Theatre</td>
<td>• Data collected throughout project according to the implementation of these initiatives</td>
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</table>
| Action 1.2: Utilize interactive theatre | • Conduct observations of the interactive theatre events to document and analyze the social problems enacted and the dialogue that follows.  
• Conduct interviews with subset of audience members to assess their understandings of issues presented, and analyze knowledge and dispositions that resulted from their experiences.  
• Document the ways in which the theatre events stimulate a campus-wide dialog. | • Observations conducted throughout the two years of the theatre presentations.  
• Interviews at the end of each theatre event and at the end of the project.  
• Documentation throughout the project. |
| Action 2.1: Implement new faculty recruitment strategies | • Interview those involved in faculty recruitment to understand the most effective strategies.  
• Collect recruitment data to assess the direct impact of the recruitment efforts. Assess the change in numbers of women of color recruited over the course of the project.  
• Conduct observations of some recruiting workshops to determine their effectiveness.  
• Conduct interviews with recruited faculty to determine their perceptions of the recruitment process. | • Interviews will be conducted at the beginning, mid-point and end of the project.  
• Data on the number of women hired will be collected at the end of the project.  
• Observations will be on-going.  
• Interviews conducted after new faculty begin at USD |
| Action 3.1: Implement workshops | • Administer to determine participants’ assessment of the training.  
• Interview sub-sample of participants from each workshop regarding its effectiveness. | • Surveys conducted at end of workshops.  
• Interviews conducted at end of workshops |
| Action 3.2: Establish mentoring program | • Observe some mentor-mentee interaction sessions to understand the knowledge, advice and support offered to the mentees.  
• Interview mentors and mentees about the mentoring experience and its impact on mentee's advancement and retention. | • Observations conducted throughout the project.  
• Interviews conducted at the end of each year |
| Action 3.3: Host Visiting Distinguished Professors | • Observe visitor events to understand content offered and determine the interactions that occur between visiting professors and female faculty.  
• Survey participants after each visit to assess their perspective on the impact of the events.  
• Interview participant sub-sample to deepen understanding of events impact on faculty. | • Observations will be conducted throughout the project.  
• Surveys of participants will be conducted following each event.  
Interviews will be conducted at the end of each event. |