



**U.S. HOUSE OF REPRESENTATIVES DIVERSITY AND INNOVATION CAUCUS  
POLICY OBJECTIVES FEEDBACK  
FOR FEBRUARY 28, 2008 MEETING**

**THREE BIGGEST BARRIERS**

1. Public Image: The public perception and negative image of engineers and engineering, and the related lack of interest in what people think engineers do.
2. Numerous issues in the K-12 educational system, including the lack of STEM-qualified teachers, a variety of curriculum concerns, and ineffective strategies for creating excitement and passion for science and mathematics, the foundations of STEM education.
3. In higher education, two issues are key—the disconnect between engineering instruction and actual engineering work; and the academic and social climate that is chilly to underrepresented groups.

**INSTITUTIONAL POLICIES AND PRACTICES**

1. There is much research and many programs that have proven success in increasing diversity at many levels. Over the past few years, the level of national awareness has increased significantly, and this issue now registers as important **and** urgent. It is clear that the challenges and problems are systemic in nature, and that they exist across the spectrum of education and society. The only way to successfully address such systemic problems is create integrated and systemic solutions, including bringing highly visible and credible leadership to the fore; creating an imperative to change rather than continuing the comfort of doing more of what's always been done; to dedicate judicious and targeted funding; and to apply appropriate leverage, incentives, and restrictions until the system produces a STEM workforce that can flourish in view of the expected competitive challenges. America can do this.

**SUGGESTIONS FOR CONGRESSIONAL ACTION**

1. Establish, adequately resource, and appoint a highly respected "STEM Tsar" to lead and inspire systemic change in American education with the goal of having the highest qualified STEM workforce in the world within ten years.
2. Quantify the gap in qualified engineers for the next 20 years and set goals, considering Baby Boomer retirement, increased demands and current graduation rates. Establish magnitude of change needed to achieve a goal of a highly qualified, multiculturally competent, STEM workforce that mirrors the diversity of the US in ten years. Determine the intermediate achievements that K-12 schools and higher education need to set. Establish the level of effort needed to meet the goal.
3. Create and fund legally defensible ways for institutions of higher education to expand their efforts to attract, recruit, support, retain, graduate, and advance students from underrepresented groups in STEM fields so that they become contributing members of the U.S. workforce and academic faculty.

4. Department of Education should collaborate with the National Science Foundation, Department of Energy, National Institutes of Health, National Aeronautics and Space Administration and other federal agencies, appropriate discipline societies, non-profits and academic institutions to develop and test beneficial enforcement of and compliance with Title IX of the Education Amendments of 1972 in STEM fields, ensuring that on-the-ground realities of various kinds of institutions across the nation are carefully considered. Title IX compliance should be applied to both students, faculty and grants processes.
5. Extend the existing National Science Foundation model of requiring assessment of the “broader impacts” criteria to specifically require PIs to contribute to a more favorable environment for both faculty and students who are under-represented to pursue STEM fields, and expand the use of this requirement to all R&D Federal agencies.
6. Increase Congressional oversight of Federal agencies to ensure that current legislation and regulations intended to encourage diversity in STEM fields are being enforced.
7. Encourage and provide resources to ABET, Inc. and other STEM accreditation bodies to lead the development and implementation of workable, strategic, initiatives that will produce the world’s most highly qualified, multiculturally competent, and diverse STEM workforce in ten years.
8. Encourage and provide resources to broadly utilize the results of the National Academy of Engineering Public Understanding of Engineering study to inform a national communication campaign that includes government agencies, academia, corporations, and not-for-profit organizations. If the NAE messaging study does not adequately do so, provide additional funds to insure the messaging resonates across the socioeconomic spectrum. We can not afford to leave those of low socioeconomic status out of the STEM workforce solution.
9. Take a page from business and require Federal agencies in STEM fields to submit plans for increasing diversity along with annual performance plans and budgets. Evaluate the effectiveness of these measures annually.
10. Convene a summit of leading STEM University Presidents and Provosts to set a course and provide incentives for the U.S. to produce the world’s most highly qualified, multiculturally competent, and diverse STEM workforce in ten years.

#### **ABOUT WEPAN**

WEPAN (Women in Engineering ProActive Network) represents women in engineering initiatives at 176 engineering schools across the country. WEPAN is a catalyst, advocate and leading resource for transforming culture in engineering education to promote the success of all women. WEPAN develops national models to attract and retain women in engineering; translates research into practice to catalyze the transformation of engineering education; inspires a network of advocates to empower and advance the education of women pursuing engineering and related STEM disciplines; and fosters diversity in engineering graduates, our innovators of tomorrow.