



# EDUCATING ENGINEERS TO MEET THE GRAND CHALLENGES



## **Engineering Societies' Commitment to Educating Engineers to Meet the Grand Challenges**

December 2014

Responding to the U.S.A. Presidential call for our nation to lead the way in addressing 21<sup>st</sup>-century Grand Challenges, we, the undersigned engineering societies, commit to support U.S. colleges and universities as they educate a new generation of engineers equipped to meet societal challenges identified through national initiatives including the White House Strategy for American Innovation, the National Academy of Engineering Grand Challenges for Engineering, and the United Nations Millennium Development Goals.

These challenges include complex yet vital aspirations such as reverse-engineering the brain, making solar energy cost-competitive with coal, engineering better medicines, providing access to clean water for nearly a billion people who lack it, ending extreme poverty and hunger, securing cyberspace, and advancing personalized learning tools that deliver better education to more individuals.

Recognizing the urgency to prepare engineering students with the skillset and mindset to meet such Grand Challenges over the course of their careers, more than 65 colleges and universities presented to President Barack Obama a Letter of Commitment to graduating, over the next decade, a minimum of 20 students per year from each institution who are prepared with a unique combination of skills, motivation, and leadership to address the Grand Challenges for Engineering of the 21<sup>st</sup> century.

This goal of producing 10,000-plus formally recognized "Grand Challenges Engineers" will be achieved through the establishment of educational programs at each institution that integrate key elements including 1) a creative learning experience connected to the Grand Challenges, 2) authentic experiential learning with clients and mentors that includes interdisciplinary experience, 3) entrepreneurship and innovation experience, 4) global and cross-cultural perspectives, and 5) development of social consciousness through service-learning.

Believing in the importance of educating engineers to meet societal grand challenges, each of the undersigned organizations commits to support and advance this revolutionary



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movement in higher education. Opportunities for support include but are not limited to the following examples:

- Creating at least one activity per year to educate the members of our societies of the Grand Challenges Initiatives
- Encouraging our societies' network of members to serve as mentors to participating students by providing the kinds of experiential learning opportunities described above
- Contacting at least ten of the 65-plus signers of the Letter of Commitment to discuss how our societies might offer specific assistance to their programs
- Attending and supporting an annual meeting focused on sharing resources and ideas among the 65-plus signers of the Letter of Commitment and our societies

Through this commitment, our societies seek to join our university partners in nurturing the development of Grand Challenges Engineers, who will ultimately lead the world in addressing 21<sup>st</sup>-century Grand Challenges for Engineering.

| Signed:

