National Academy of Engineering
Initiatives to Advance the Global Competency of U.S. Engineers

Proctor Reid, Director of NAE Programs
Better focused and improved U.S. efforts are needed for . . .

• **Making U.S. engineering education more responsive to world-wide progress and concerns**
  
  – U.S. Engineering PhD recipients “should spend a year or more abroad at centers of excellence in engineering in the Pacific Rim nations.”
  
  – US universities “should establish and publicize a capability for providing information on international engineering programs, and for promoting an awareness of the international nature of technology.”
  
  – Universities “should expand opportunities for engineering students to study abroad through the pairing of U.S. schools with comparable institutions abroad, and also should encourage the development of cooperative efforts between engineering schools and other campus units expert in international economic and cultural affairs.”
  
  – “Graduate degree programs in engineering and applied sciences should emphasize the need for spoken and technical competency in at least one foreign language.”
“. . . Advances in communications, travel, and economics have created a world where no country is untouched by any other. In the United States the oceans that bound our coasts no longer insulate us from other nations. In this dynamic global economy and political environment, engineering must adjust to a new world view . . .

We aspire to a future where engineers are prepared to adapt to changes in global forces and trends and to ethically assist the world in creating a balance in the standard of living for developing and developed countries alike.”
• GCSP prepares engineering undergraduates with the skills and mindset to
tackle the NAE’s 14 Grand Challenges for Engineering and problems like
them in the 21st Century.

• GCSP focuses on 5 competencies
  • Research
  • Interdisciplinary Understanding
  • Entrepreneurship/Viable Business Creation
  • Global/Multicultural Understanding
  • Social Consciousness through Service Learning

• GCSP has the potential to remake US engineering education so that all
  graduates will be better prepared to contribute meaningfully to the
  betterment of humankind.
Schools with Grand Challenges Scholar Programs
Objectives:

- **Objective**: Initiate series of research, community-building, and outreach activities to strengthen and expand a rapidly growing network of Grand Challenges Scholars Programs (GCSPs) at national and international colleges and universities. Remake engineering education.

5-Year Goals:

1. 150+ US engineering schools participating in the program
2. 7,800+ enrolled US students and 1,500+ scholars graduating annually
3. Vibrant GCSP programs at 100 schools of engineering overseas
4. Large distributed, well equipped GCSP volunteer community to sustain global network
Goal:
• Inspire next generation of engineers
• Address most important challenges and opportunities facing humanity

Method:
400+ university students and 400 leading engineers and other experts from around the world brainstorm opportunities for global cooperation to solve our common challenges

GGCS 2017 Themes
• Sustainability
• Health
• Security and Resilience
• Joy of Living
• Education
• Public Understanding of Engineering
GGCS Program Overview

July 18: Student Day Business Plan Competition
• *NAS Building*

July 18: FIRST Global Robotics Competition
• *DAR Constitution Hall*

July 18: Summit Opening Reception with FIRST Global
• *DAR Constitution Hall*

July 19: Summit Day 1, *GW University*
1. Keynote* in General Session
2. Workshop Sessions on GC Themes: Sustainability, and Health
1. Table Topics Discussion Session
1. General Session on GC’s in Education
1. Student Presentation Session

All Attendees Reception *U.S. Institute of Peace*

July 20: Summit Day 2, *GW University*
2. Keynotes* in General Sessions
2. Workshop Sessions on GC Themes: Security & Resilience, and Joy of Living
1. General Session on GC’s in Public Understanding of Engineering

*Two of three Keynotes to review global progress against a GC since 2000*
Frontiers of Engineering Education

The Frontiers of Engineering Education (FOEE) Symposium brings together some of the nation’s most engaged and innovative engineering educators in order to recognize, reward, and promote effective, substantive, and inspirational engineering education.

Read More

FOEE SYMPOSIUM

6TH ANNUAL FOEE SYMPOSIUM

26th-29th October 2014

NATIONAL ACADEMIES’ BECKMAN CENTER

LATEST NEWS

Alumni News - Share your news with FOEE
OCTOBER 31, 2013

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New FOEE Nomination System was launched in spring, 2013
APRIL 17, 2013

Read More
• Opportunity to share, learn and engage with NSF and other public and private stakeholders
• Inverness Research survey and interview results
• Lightning round “testimonials” to show-case specific engineering education initiatives of societies, e.g.
  – Undergraduate mentoring program
  – Innovative student chapter activity
  – Curriculum development
  – Educational webinars
  – And others

• Call for testimonials – EngineeringSocieties@nae.edu