Geotechnical Engineering
Education Innovation

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6th Purdue Geotechnical Society Workshop
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Geo-Strata

› ASCE Geo-Institute
› Geo-Strata Magazine
  – Nov/Dec 2007
Call to Action

› Historic Time Period
  - Space Race

› Response
  - Revisions to STEM education
  - National investment and commitment to the space program
  - Neil Armstrong (Purdue BSAAE ‘55) walks on the moon

Source: boingboing.net
Call to Action

› Historic Time Period
  - Arms Race

› Response
  - Revisions to STEM education
  - National investment and commitment to security
  - One step ahead of the competition

Source: history.sandiego.edu

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Latest Calls to Action

› A new challenge…a new type of race

› No true finish line…but it will have a significant impact on the education and livelihood of engineers

› Race is to produce global engineers
Latest Calls to Action

› The World is Flat
  Thomas L. Friedman

Source: img.textbookx.com

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Latest Calls to Action

› The Engineer of 2020
  National Academy of Engineering
  2004

Source: amazon.com

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Latest Calls to Action

› Educating the Engineer of 2020
National Academy of Engineering 2005

Source: amazon.com
Latest Calls to Action

› Rising Above the Gathering Storm
National Academy of Sciences,
National Academy of Engineering,
and Institute of Medicine
2007

Source: amazon.com
Latest Calls to Action

› Profiles of Engineering and Engineering Technology Colleges
  American Society for Engineering Education
  2007

Source: asee.org
Latest Calls to Action

› Talking About Leaving
  Seymour & Hewitt
  2000

Source: amazon.com

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Latest Calls to Action

› Production of Engineering and Technology Bachelor’s Degrees in the United States, China, and India

Response

› Changes to Education

› ASCE BOK2

Source: asce.org

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Response

› A competition of numbers
› Quantity vs. Quality
› Leaders
Response

Engineering Education
  – As a discipline

To produce the best, we need to ensure that our methods are the best
Local Efforts

› Prof. Maria Caterina C. Santagata
  – Engineering elicitation
  – Poster-media and video
Local Efforts

Prof. Joe Sinfield

- Entrepreneurship in the classroom and laboratory
- Multi-disciplinary
- Solving ill-structured problems
- Uncertainty and risk
- Consideration for alternative solutions

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Local Efforts

› Prof. Jason Weiss
  – “Clicker” technology in education
  – Student engagement
  – Large class setting

Source: www.theclickerguys.com

Source: www.h-itt.com
Local Efforts

› Prof. Vincent P. Drnevich
  - Leadership in Energy and Environmental Design (LEED)
  - Green Design and Sustainable Design
Future Opportunities

› Input from industry

› Collaboration
Discussion

› Your thoughts?

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