



PURDUE
UNIVERSITY

College of Engineering
Geotechnical Engineering

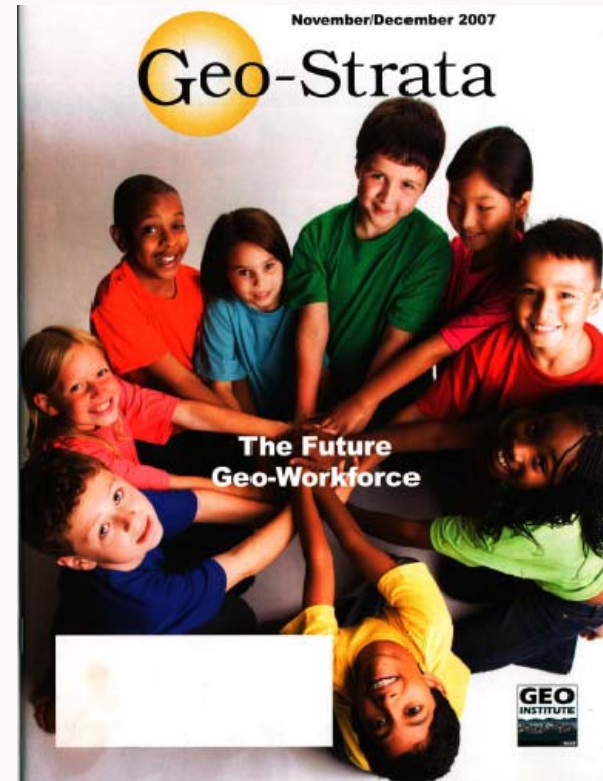
Geotechnical Engineering Education Innovation

Brock E. Barry, P.E.

6th Purdue Geotechnical Society Workshop
18 April 2008

Geo-Strata

- › ASCE Geo-Institute
- › Geo-Strata Magazine
 - Nov/Dec 2007



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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

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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

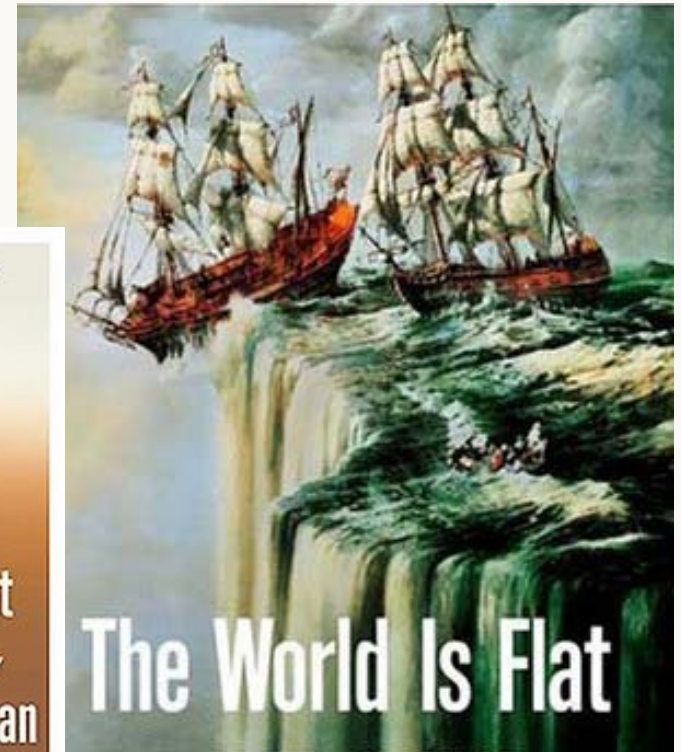
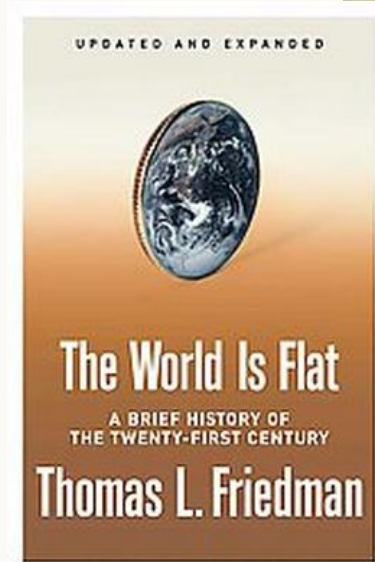
- › A new challenge...a new type of race
- › No true finish line...but it will have a significant impact on the education and livelihood of engineers
- › Race is to produce global engineers

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Latest Calls to Action

- › **The World is Flat**
Thomas L. Friedman
2005, 2006, 2007



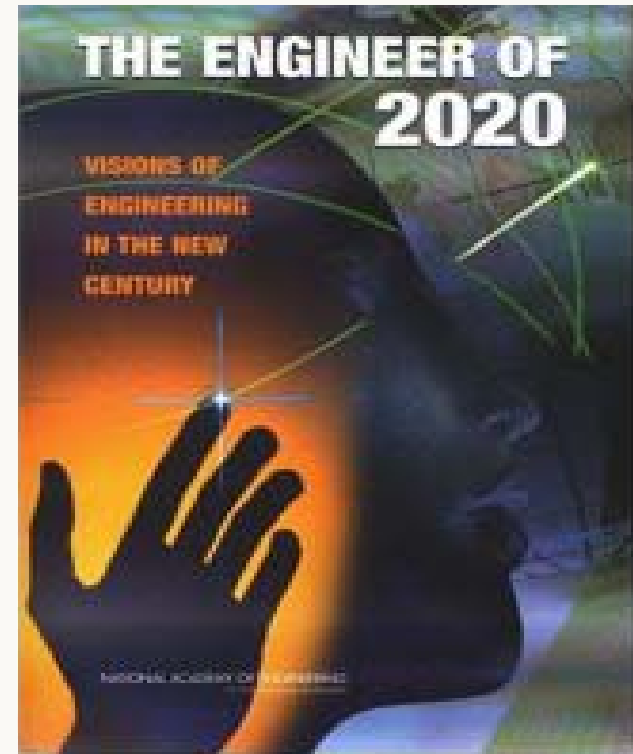
Source: img.textbookx.com

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Latest Calls to Action

- › The Engineer of 2020
National Academy of Engineering
2004



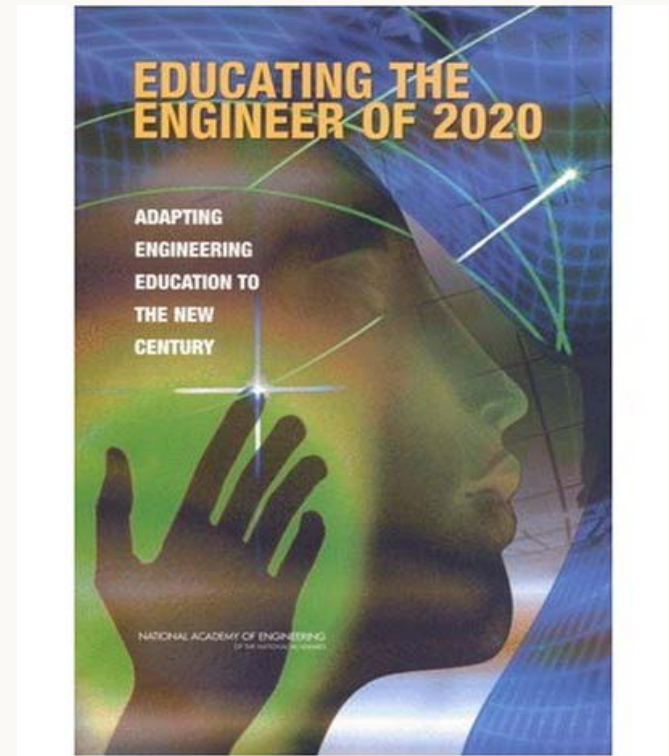
Source: amazon.com

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Latest Calls to Action

- › Educating the Engineer of 2020
National Academy of Engineering
2005



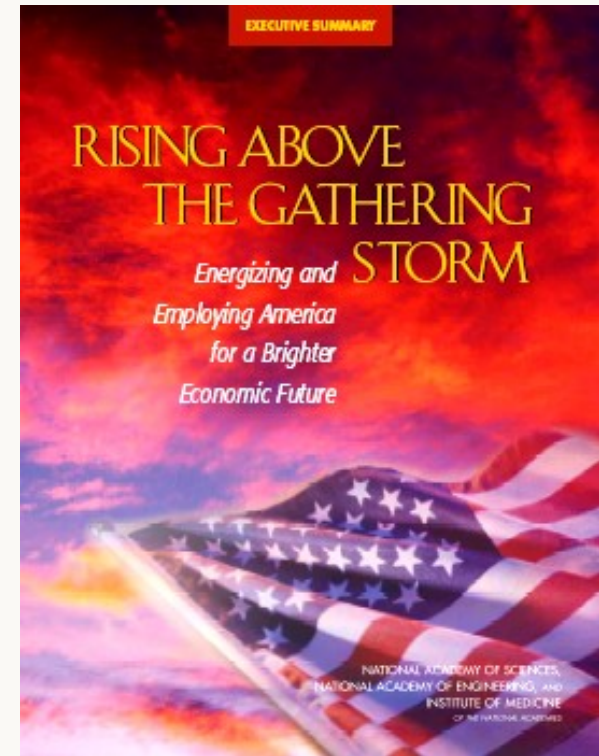
Source: amazon.com

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Latest Calls to Action

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



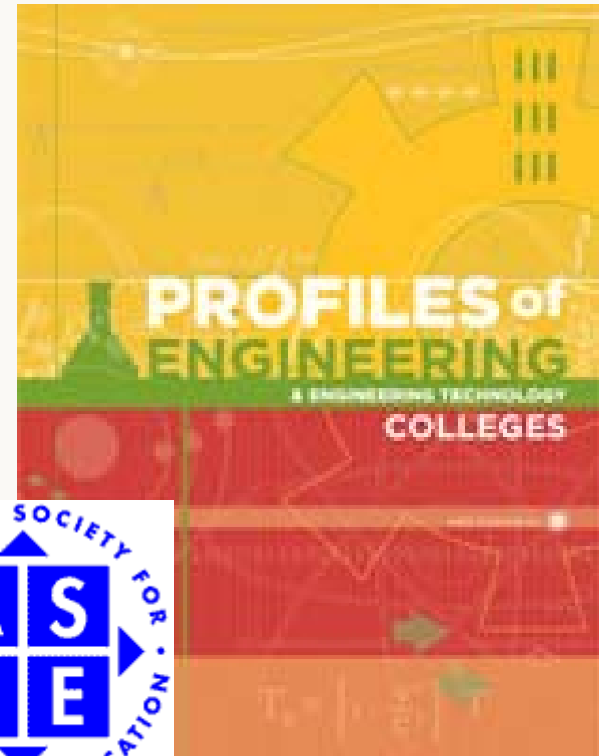
Source: amazon.com

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Latest Calls to Action

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



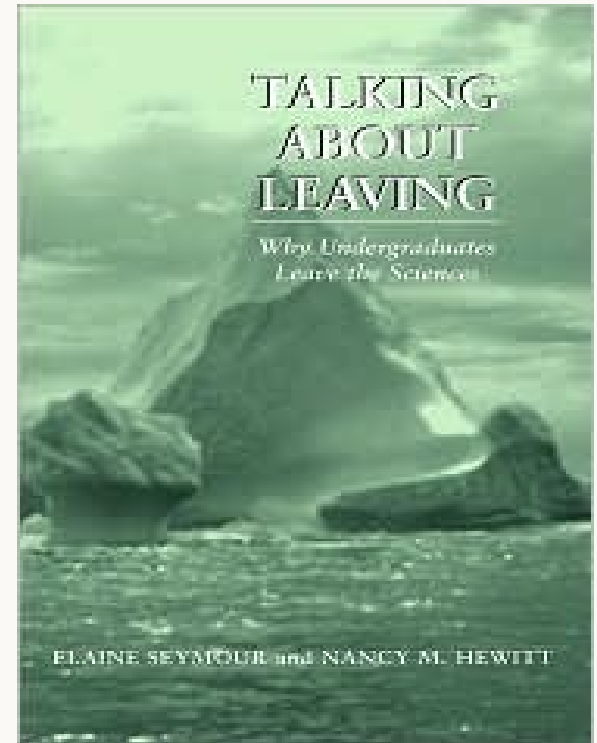
Source: asee.org

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Latest Calls to Action

› Talking About Leaving Seymour & Hewitt 2000



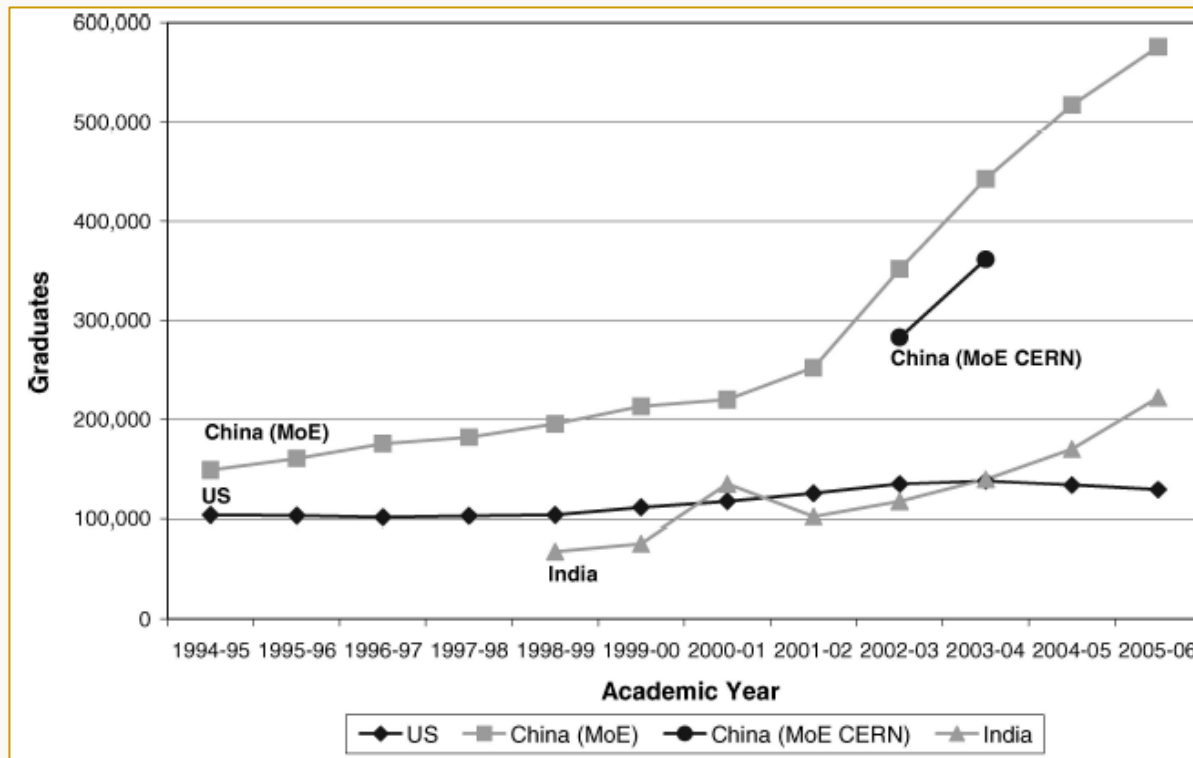
Source: amazon.com

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Latest Calls to Action

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



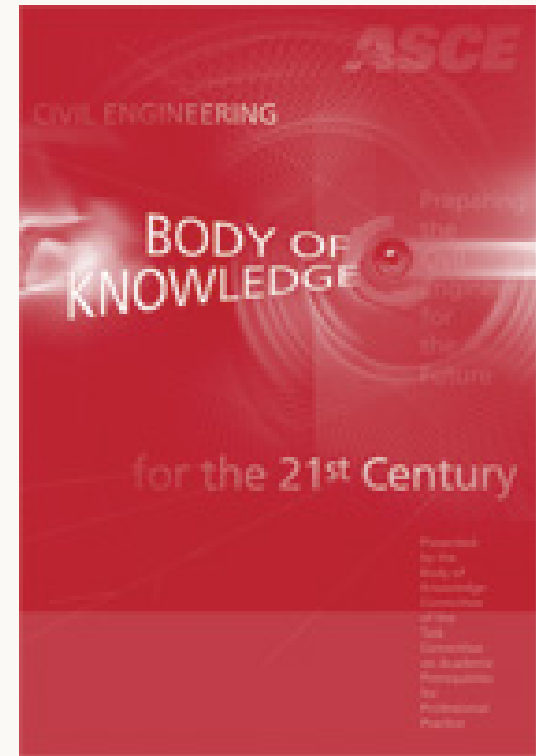
Source: Journal of Engineering Education, Vol. 97, No. 1, pp. 13-25, 2008

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Response

- › Changes to Education
- › ASCE BOK2
 - Second Edition, 2008



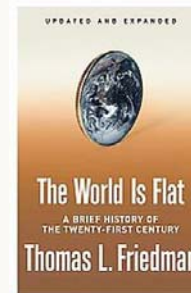
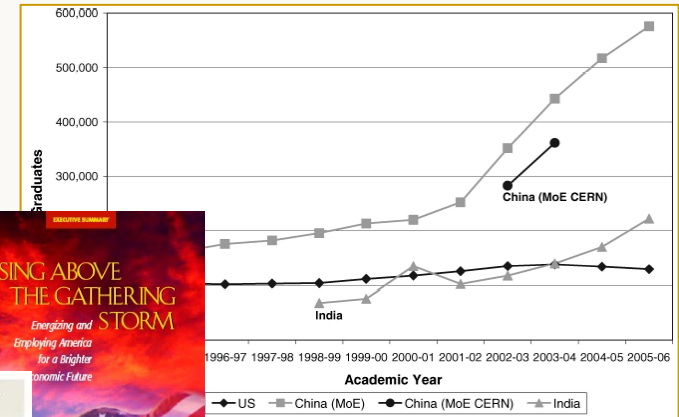
Source: asce.org

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Response

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



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Response

- › Engineering Education
 - As a discipline
- › To produce the best, we need to ensure that our methods are the best



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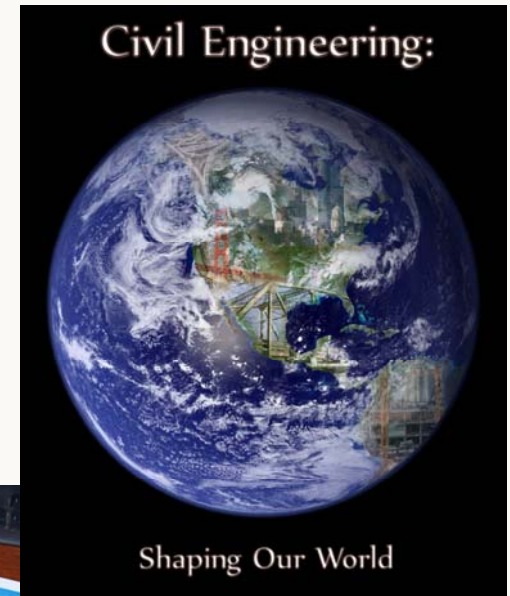
Local Efforts

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

Engineering: Bridging the Gap...



...from Conceptualization to Reality

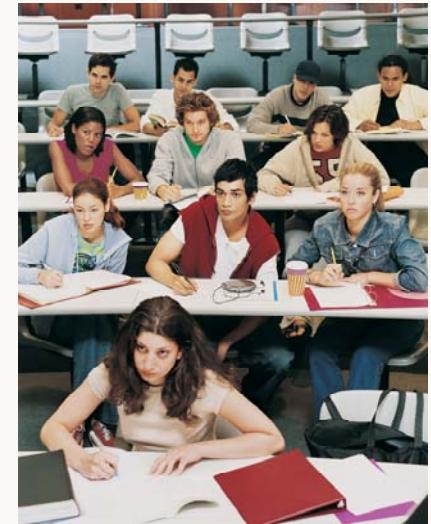


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Local Efforts

- › 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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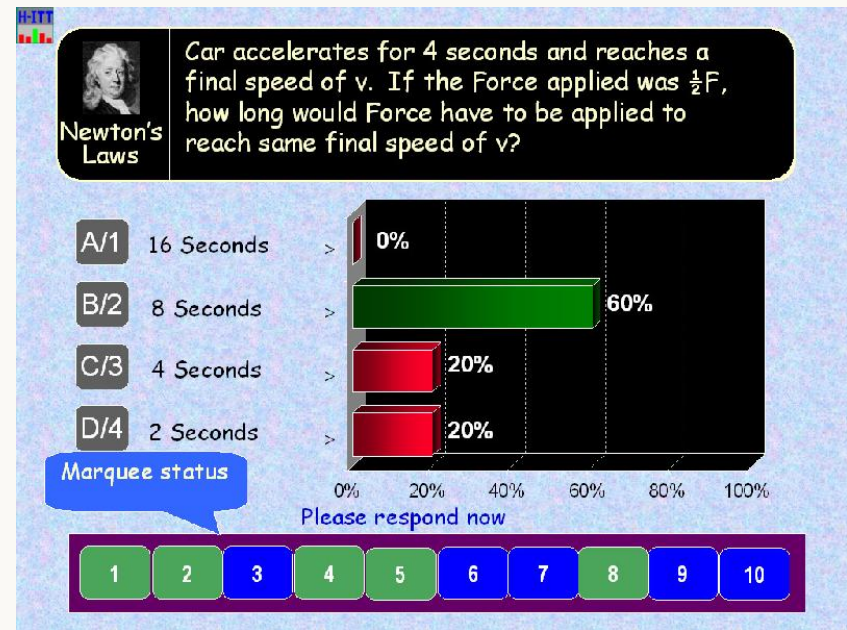


Local Efforts

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



Source: www.theclickerguys.com



Source: www.h-itt.com

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Local Efforts

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

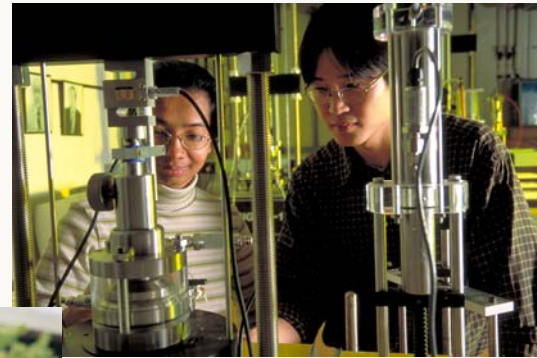


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Future Opportunities

- › Input from industry
- › Collaboration



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Discussion

- › Your thoughts?
- › bbarry@purdue.edu



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