The Learning Bridge
for Advancing Civil Engineering and its Education

A Coordinated, Multi-Institutional, Multi-Disciplinary, Academe-Industry-Government Collaborative Research Project

Growing to an International Center of Best Practices for Civil Engineering Education

Kick-off Meeting
13 Nov. 2009
Palmyra Cove
Civil Engineering Curriculum

Fundamental Questions

• **21st Century Student:** How can we motivate and reinforce/leverage the positive attributes of the new generations and mitigate the generational divide in the education and practice of civil engineering?

• **21st Century Technology:** How can we properly leverage new technologies for improving the performance of civil engineering services and products?

• **21st Century Societal Problems:** How can we better recognize, conceptualize and formulate effective solutions for the societal challenges which demand civil engineers’ leadership and coordination?
Recent Recommendations

- I. Make *Research-Based* Learning the Standard
- II. Construct an *Inquiry-based* Freshman Year
- VI. Use *Information Technology* Creatively
- VII. Culminate With a *Capstone* Experience

“...Students should be introduced to the “**essence**” of engineering early in their undergraduate careers.”

“...Should introduce *interdisciplinary learning* in the undergraduate curriculum and explore the use of case studies of engineering successes and failures as a learning tool.”

“Institutions should encourage domestic students to obtain the MS and/or PhD degrees.”
Relevance

Recent Recommendations

**ASCE 24 Outcomes**

*Foundational*
1. Mathematics
2. Natural sciences
3. Humanities
4. Social sciences

*Professional*
16. Communication
17. *Public policy*
18. *Business and public administration*
19. Globalization
20. Leadership
21. Teamwork
22. Attitudes
23. *Lifelong learning*
24. Professional and ethical responsibility

*Technical*
5. Materials science
6. Mechanics
7. Experiments
8. Problem recognition and solving
9. Design
10. Sustainability
11. *Contemp. issues & hist. perspectives*
12. Risk and uncertainty
13. Project management
14. Breadth in civil engineering areas
15. Technical specialization