ABET Conference
Baltimore, Md
October 27, 2011

Innovation in Curriculum
Study Abroad

Prof. Lester Gerhardt, PhD
Rensselaer Polytechnic Institute
Sr. Advisor to the President
Institute of International Education
gerhal@rpi.edu
Key Global Elements

- US Higher Education
- Personally Involved Initiatives
- ABET Role
US Higher Education

- US Higher Education Most Highly Sought by International Students >75% (of 9,330 Surveyed-2011 IIE Report)
- Only 1.3 % of US Students Have an International Experience Annually
- Insufficient Production of Engineering Graduates
- A System in Need of Serious Improvement and Investment
Personally Involved Global Initiatives

- Global Engineering Education Exchange Program-1994/95
- Rensselaer Education Across Cultural Horizons Program-2008
- Budapest Aquincum Institute of Technology-2010
ABET’s Global Role

- Quality Through Global Accreditation
  - Curricula Requirements
  - Campus Evaluation Visits
- In Cooperation With Universities
A Recommendation

- View an International Experience for Undergraduates in the Same Way as a Capstone Design Experience
  - Incorporate It as an Integral Part of the Curriculum
  - Associate It With a Corresponding Outcome Assessment
  - Implementation Left to the University
THANK YOU
U.S. Students Studying Abroad &
International Students Studying in the U.S.

260,327

690,923

*Open Doors Report, 2010, IIE
Hosting Incoming Int. Students*

- 10 States Hosted 61%
  - Cal, NY, Texas, Mass, Ill, Fla., Penn, Mich., Ohio, Indiana
- NYC Hosted 9% of All Int’l Students in the US
- Top 25 (20) Universities Hosted 20% (16%)
  - About 2/3 Public, 1/3 Private
- 2001- 2008 Global Market Share by Host Country
  - US-From 28% to 21% (a 25% Drop) While Absolute Numbers Rose by 26% to 691,000
  - China-From Negligible to 6% Overall; # 5 Host for US Students in 2010

*Open Doors Report, 2009/10, IIE
Small Numbers of US Students Abroad in Critical STEM Fields—Inconsistencies

**GIVEN**

- S & E Workforce in the US Comprises About 5% of the Workforce and Is Said to Account for Over 50% of the GNP
- Large Exports/Imports, Global Economy, Global Issues (Energy, Environment, Famine, Disease)
- Abundance of Multinational Companies
- The US Built on Immigration and Diversity
- 96% of Humanity Lives Outside the US

**YET**

- Only 20% of Americans Have Passports
- Less Than 1.3% of US Students Are Studying Abroad at Any Given Time. Less Than 10% Study Abroad At Any Point in Their UG Education
An International Experience in 3-D

- Academic
- Culture
- Language

Overall It Serves as a Vehicle for Self Discovery and Identifies and Enriches Those With a Broadened View of the World
Diversify International Options

- Semester of Study at Partner University
  - One or Two Semesters
- Summer Experience
- Internships
- Semester @ Sea
- Specialty - Peace Corps, EWB, ESW, etc.
- Shorter Term Options
- Dual/Joint Degree Programs
- On Campus Options
- Other
Some Indicators

- Rising Tide of Mediocrity-National Academies Report-1983
- Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future-National Academies-2006
  - Pernicious decline of the number of graduates in math and science
- National Math and Science Initiative Summit-2008
Some Indicators

- National Assessment of Educational Progress (NAEP)-2009
  - Dep’t of Ed Exam Given to 4th, 8th, and 12th Graders
  - 1/3 of Americans Exhibited Proficiency in Science & Technology
  - Proficient
    - 4th grade-34%, 8th grade-30%, 12th grade-21%
  - 3% Classified as Advanced

- Educating Engineers as Global Citizens: A Call for Action-2009
  Grandin, J. & Hirleman, D. ; NSF Sponsored Study
Some Indicators

- Some Recent Budget Cuts to Education
  - DoEd Title VI/Fulbright-Hayes International Education Program Cut (Restoration Sought)
  - DoEd Cancels FY11 FIPSE Comprehensive Program
  - Huge State Cuts to K-12 Education.

As a Result, 43 of 50 States Implemented Cuts to Public Colleges & Universities, and/or Made Large Increases to Tuition to Counter Reductions in State Funding.
Some Indicators

- Survey of College Presidents (Pew Research Center & CHEd-2011)
  - Erosion of America’s Higher Ed Global Standing
    (1/2 Predicted US Not Among the Top in 10 Years)
  - College Cost a Major Concern
    Increased 50% in Last Decade While Family Income Fell (2000-2009)
  - 1/4 of College Graduates Earn Less Than $50k/Yr

- Academically Adrift: Limited Learning on College Campuses (Univ. of Chicago Press, 2011-Arum & Roksa)
  - 45% of UG showed ‘no improvement in critical thinking, complex reasoning, and writing skills’ in first 2 yrs. of college, and 36 % in 4 yrs.
Some Indicators

- Percentage of Engineering as First Degree by Country
  - Singapore 39.1%
  - China 33.3%
  - South Korea 25.4%
  - Finland 20.9%
  - United States 4.5%
Some Indicators

- Yet With That, Feedback to Students is **Good Job**
  As Evidenced by Rising Grades –
  Grade Inflation/Lower Thresholds
  Grade of A is 43% of all Grades; A or B are 76.8%;
  D or F are 8.3% at 4 Yr. Colleges and Universities*

- The Current Educational Picture is One of Erosion in Process and Product

- Definitely **Not** a Good Job!

* Teachers College Record (7/13/11)
Some Recommendations/Conclusions

- Set and Prioritize the US National Goal to Be and Sustain the World’s Best Integrated Educational System
- Regard Intellect as a Global Resource to be Used to Solve Global Problems
- Recognize the Obligation of Those Countries More Highly Developed to Those Less Developed- Ubuntu
- Regard a Global Educational Dimension as a Necessity Not a Luxury
- Broaden the Educational Process- It Will Broaden Both Those it Attracts as the Input as Well as the Resulting Output ‘Product’
- Have Industry Offer Hiring Bonuses to Those With International Experience
- Value Trust, Respect, Confidence (TRC)
- Let’s Have Pride in the Past; But Let’s Not Live in It
- Let’s Have Faith in the Future; But Recognize Hope Alone is Not a Strategy
- Just Do It!-It’s the Right Thing
Let’s Remember that the Future of All Our Countries Resides in the Proper Education of Our Youth—We Must Do It Right Together