

# Globalization Creates New Demands on Our Grads

- Global teams
- Ability to work cross-culturally
- Ability to work in other cultures
- Flexibility
- Mobility
- Interdisciplinarity
- Language skills
- Life-long learning

# What can universities do to provide these qualifications for their graduates?

- Key qualifications as part of the curriculum
  - Global teamwork
  - Study of global cultures
  - Language study
  - Training in intercultural communication
- Internships abroad to deepen language skills and learn how to adjust to different customs
- Study abroad to appreciate other approaches to technical issues

# Do U. S. Engineers Study Abroad?

- 2003-2004
  - 191,300 U.S. students abroad
    - Total student population = 14,000,000
  - 5,462 engineering students (2.9%)
  - 1.29% of U.S. egr. undergrads studied abroad
- Overall trends
  - Increasing numbers (+9.6% over 2002-2003)
  - Shorter stays (just 6% spend 2 semesters; 38% for one semester)
    - Growth of summer programs, January programs
  - English language countries or programs
    - UK, Ireland, Australia, New Zealand (27%)

# What are the 1.29% doing?

- Traveling, tourism, company visits
- Projects with peers at host institutions
- Private sector internships/project experiences
- Courses at partner universities
- Language study
- Culture study

# Getting Started Workshop

- Models that Work
  - URI, WPI, Purdue, Ga. Tech
- Institutional Constraints/Opportunities
  - MIT, URI, VT, Braunschweig
- Making it Work (convincing the faculty, recruiting)
  - URI, WPI
- Internships abroad/Academic exchange
  - MIT, Bremen, Cincinnati, Ga. Tech
- Other issues (funding, preparing students, dual degrees, etc.)
  - Grand Information Fair
  - Saturday working sessions

# Presenters

- Natalie Mello
- Lars Erickson
- Phil McKnight
- Eckhard Groll
- Bernd Widdig
- Robert Manteiga
- Peter Nuebold
- Jan Helge Bohn
- John Grandin
- Kathleen Maher
- Natalie Mello
- Sigrid Berka
- Elmar Schreiber
- Gayle Elliott
- Phil McKnight
- Michael Nugent

# Create Partnerships

- Be connected
- Look for/take advantage of opportunities
- Find partners (at home and abroad)
- Cross-disciplinary partners
- Create “win-win” situations
- Seek and find funding
- Be entrepreneurial

# Barriers

- Traditions of academia
  - Perceptions of appropriate mission
  - Departmental/college divides
- People do not know each other
- What are you doing here?
- What is she/he doing here?
- Rewards!!??

# Likely Partners?

- Internationalists
- Bilinguals
- Faculty with international collaborations
- Faculty looking for new opportunities
  - Mid to late-career faculty
- Administrators with int'l vision
  - New dean?!
- New funding opportunities/priorities
- Colleagues in other departments/divisions

Opportunities  
leading  
to  
mutual  
benefit



# *Our Students*

- **200+ Students** (120 German; 40 Spanish; 35 French; Chinese 10)
- **20% of all engineering undergrads at URI** are in the IEP. All will study and intern abroad, and earn a second degree in a foreign language.
- **30% are women** (as compared to 17% of all College of Engineering undergrads)
- **53% are Centennial Scholars**
- **240 Graduates**

# Language Majors at URI

- French – 100++ ( 1/3 IEP; 1/4 Business)
- German – 100++ (90% IEP)
- Italian – 25
- Spanish – 135 (1/4 IEP)

(other languages taught: Ancient Greek, Arabic, Chinese, Hebrew, Japanese, Latin, Portuguese, Russian,

Send  
Faculty  
Abroad!!!!

# First levels of Collaboration

- Mutual faculty visits (FIPSE)
- Reciprocal Student Exchange
  - One-to-One Exchange
  - Undergraduate coursework with full credit
  - special project work
- Faculty Collaboration
  - Teaching
  - Research

# Dual Degree Graduate Programs

- Masters of Science/DiplomIngenieur
  - Based upon recognition of equivalency
  - Based upon joint acceptance of thesis
  - Based upon full year at partner university
  - Based upon faculty interaction/collaboration
  - Supported by German government
  - Supported by industry
- 
- Next step: Dr. –Ing./Ph.D.

# Partnership in International Research and *Education* *(PIRE)*

“PIRE is designed:

- to enable U.S. scientists and engineers to build strong, long-lasting international research collaborations
- and to develop a new cadre of globally engaged scientists and engineers.”

Kathryn Sullivan, acting director of NSF's Office of International Science and Engineering.

# PIRE – Core Expectations

- Building international partnerships that advance research integrated with **innovative educational opportunities** is the focus of this program.
- Proposals should be organized around a focused research topic that requires the **close collaboration of U.S. and international research partners** to achieve significant scientific/engineering goals while also emphasizing the integration of research and education.

# URI PIRE Grant

- Engineering
  - Mechanical, Chemical, Ocean
- Biological Sciences
- Languages/IEP
  - Grandin
- Braunschweig Faculty
  - Parallel fields

# Dual Degree Doctoral Program (proposed)

- Open to all COE programs
- Supported/encouraged by NSF grant
- Ph.D. / Dr.-Ing.
- Minimum one-year residency abroad
- Common thesis
- Two advisors, two committees, one defense
- All requirements met for both schools

# Why? - New Demands on Researchers

- Globalization of science and technology
- New knowledge, innovation are global
- Need for global collaboration
- Need for global teamwork, global partners
- Need to be globally connected
- And interdisciplinarily connected

# Partnering with Industry

- Internships (in U.S. and abroad)
- Career Placement
- Mutual Benefit
- Research Projects (Thesis support)
- Financial Support
- Advisory Board
- Win-Win relationship