Educating a New Generation of Engineers

Scott Ashford, Oregon State University
PEER Assistant Director for Education

PEER Summative Meeting – June 13, 2007
Objectives of PEER Education

- Stimulate interest in young students
  - Focus is on Undergraduates
- Provide challenging opportunities in education and research to university students
- Encourage participation of traditionally underrepresented groups
- Raise public awareness and knowledge
Dedicated People Lead to Success

- Gerry Pardoen, UC Irvine
  - Assistant Director for Education
  - 1997-2002

- Gina Ring, UC Irvine
  - Program Manager 1997-2002

- Rena Rowe, UC San Diego
  - Program Manager 2002-2003

- Linda Nelson, UC San Diego
  - Program Manager 2003-2007
Thanks to the Education Committee!

Core Institutions
- Bozidar Stojadinovic
- Khalid Mosalam
- Jim Beck
- Jon Stewart
- Eric Johnson
- Pedro Arduino
- Farzin Zareian
- Anit Kavinde
- Sashi Kunnath
- Edwardo Miranda

Education Affiliates
- Abe Lynn
- Cole McDaniel
- Kurt Mullen
- Solomon Yim
- Mark Tufenkjian
- Ian Robertson

PEER HQ
- Staff
- IAB
- Jack
PEER and REU Summer Interns

2004 Tri-Center REU Symposium at Cooper River Bridge site Charleston, South Carolina

2004 PEER Summer Interns at the 2005 EERI Annual Meeting in Ixtapa, Mexico
PEER and REU Summer Interns

- 22 PEER/REU Interns
- Work with a PEER faculty mentor
- $6,000 stipend for summer
- PEER Interns present at EERI
- REU Interns present at Tri-Center REU Symposium (Seattle in August 2007)
- Total of nearly 200 PEER Interns
Earthquake Engineering Scholars Course

2005 PEER Earthquake Engineering Scholars Course Participants at the University of Washington
Earthquake Engineering Scholars Course

- Multi-campus program for 30 students
- 4 weekend retreats at PEER core campuses
- At least one BIP presentation
- Participation of faculty from other campuses
  - Short courses
  - Lab demonstrations
  - Tours
  - Meet graduate students
  - Fun
Seismic Design Competition

- Started in 2004 w/ 5 teams
- Three criteria
  - Paper
  - Presentation
  - Performance
- 2006 Tri-Center Competition
  - Eight teams
    - (6 PEER, 1 MAE, 1 MCEER)
- Competition was held April 18-20 at the 100th Anniversary SF EQ Conference
- All volunteer SLC Effort!
2006 PEER Seismic Competition

2006 Participating Team Members

University of Washington
1st Place Team

University of California, Berkeley
2nd Place Team

University at Buffalo, State Univ. of NY
3rd Place Team
2007 Competition at EERI Annual Meeting

- 14 Teams
- Winners
  - Oregon State 1st
  - San Jose State 2nd
  - UC Davis 3rd
  - Hawaii 4th
- NJIT: Popov Award
- Cal Poly SLO: Richter Award

- Four of our Education Affiliates
K-12 Event: Minds in Motion
K-12 Event: Minds in Motion

- Held April 2005 at California State University, Chico
- Purpose: To expose K-12 students to career opportunities in Science and Engineering
- 3958 students from 63 Northern California K-12 schools attended the event
- SLC member Curt Haselton represented PEER, teaching students about earthquakes and structural engineering
K-12 Event: Junior High Seismic Competition
K-12 Outreach

San Carlos Junior High Seismic Competition

- Held April 23, 2005 at The Blume Center at Stanford Univ
- Co-hosted by Stanford University, PEER and the San Carlos Gifted & Talented Education (GATE) Program
- 45 5th-8th grade students from two San Carlos, California junior high schools participated
- Students built “water towers” out of materials such as popsicle sticks, straws, and hot-glue, and then tested their models on a shake table
K-12 Outreach

“Introduce a Girl to Engineering Day”

- Held February 23, 2006 at Caltech
- Co-hosted by the Society of Women Engineering, PEER and Caltech
- 70 middle school girls from the Pasadena area visited the Caltech Dynamics Lab to learn about earthquakes and structural engineering
- Run by SLC Members
Reflections on PEER Education

Internship Program
- PEER graduate student researchers saw value of undergraduate research experience
- All saw value of interns mixing with practitioners at EERI poster sessions

Scholars Course
- Expensive labor intensive program for all

Seismic Design Competition
- Relatively low cost with big impact
- Undergraduates, practitioners, volunteers
Future of PEER Education

- 2008 Seismic Design Competition
  - EERI Annual Meeting in New Orleans
  - February 2008
  - Let me know if you’ll help sponsor

- PEER Internship Program
  - Preparing NSF REU Site Proposal
  - Opportunities for students through NEES

- Statistic to Remember
  - Over 80% of participants in PEER Education Programs go on to Graduate School
What will be the PEER Legacy?

Volunteerism

- PEER’s students leaders have developed a culture of volunteerism, and continue to step up in academia and private industry.

Research Collaboration

- Our student researchers have “grown-up” with the PEER model of research collaboration, they see it’s value and want to continue.