



# Educating a New Generation of Engineers

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PEER Assistant Director for Education



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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 Student Leadership Council





# PEER and REU Summer Interns



# 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

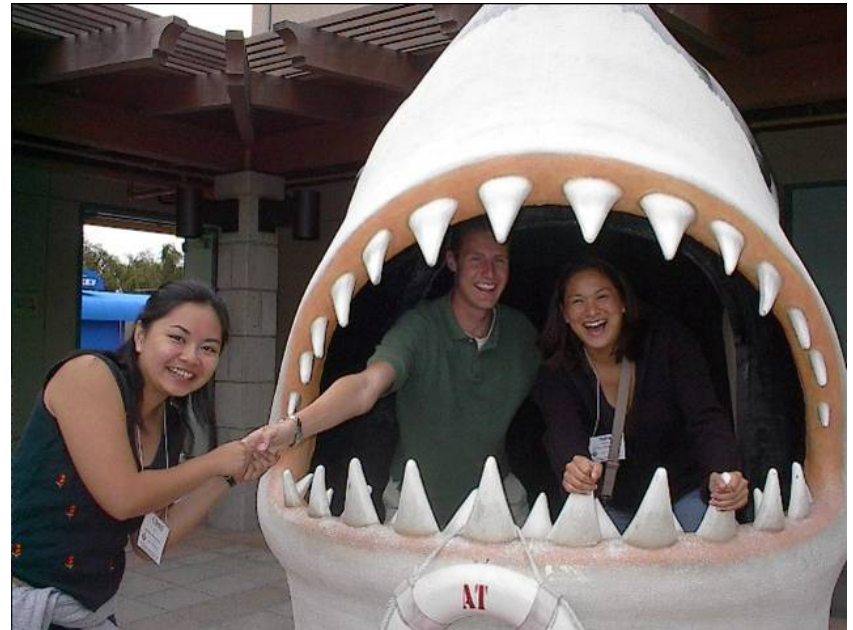
# Earthquake Engineering Scholars Course





# 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 100<sup>th</sup> Anniversary SF EQ Conference
- ◆ All volunteer SLC Effort!



# 2006 PEER Seismic Competition





# 2007 Competition at EERI Annual Meeting

◆ 14 Teams

◆ Winners

Oregon State 1<sup>st</sup>

San Jose State 2<sup>nd</sup>

UC Davis 3<sup>rd</sup>

Hawaii 4<sup>th</sup>

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.