



NEEShub:

Cyberinfrastructure of the Network for Earthquake Engineering Simulation

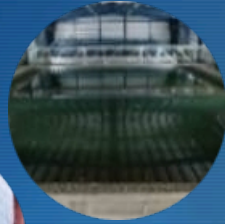


Rudi Eigenmann
Purdue University





Oregon State University



University of Illinois- Urbana



PURDUE UNIVERSITY
Discovery Park

University of Minnesota



University of California
Berkeley



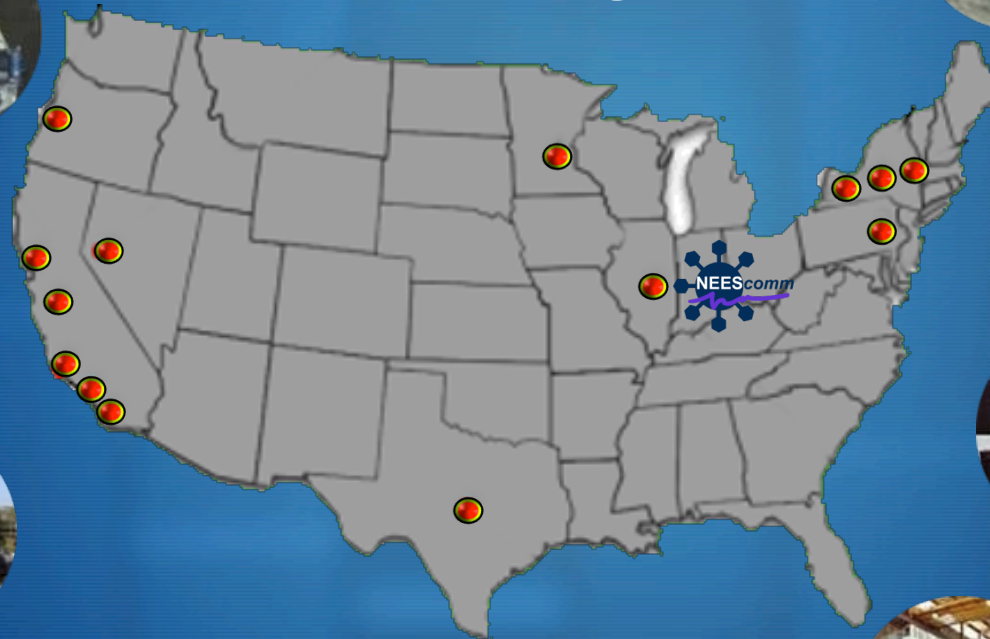
University of Buffalo

nees.org

University of California
Davis



Cornell University



University of California
Santa Barbara

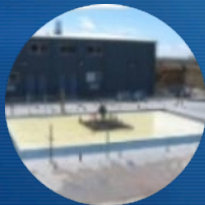


University of California
Los Angeles

Rensselaer Polytechnic Institute



University of California
San Diego



Lehigh University

University of Nevada
Reno



University of Texas
Austin

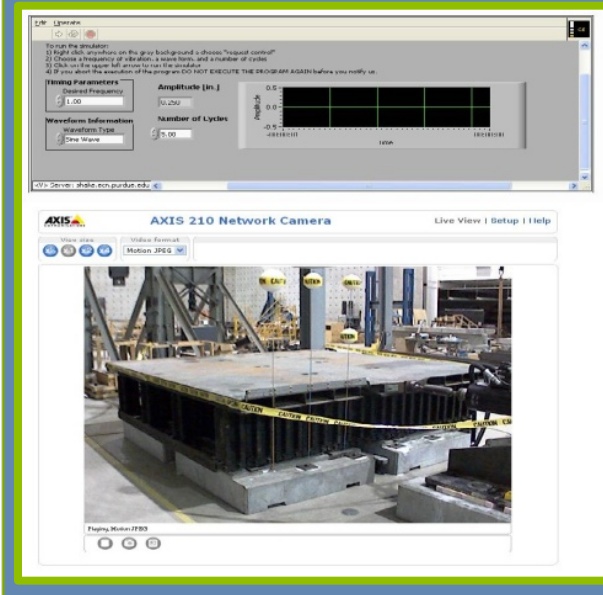




Cyberinfrastructure: NEEShub

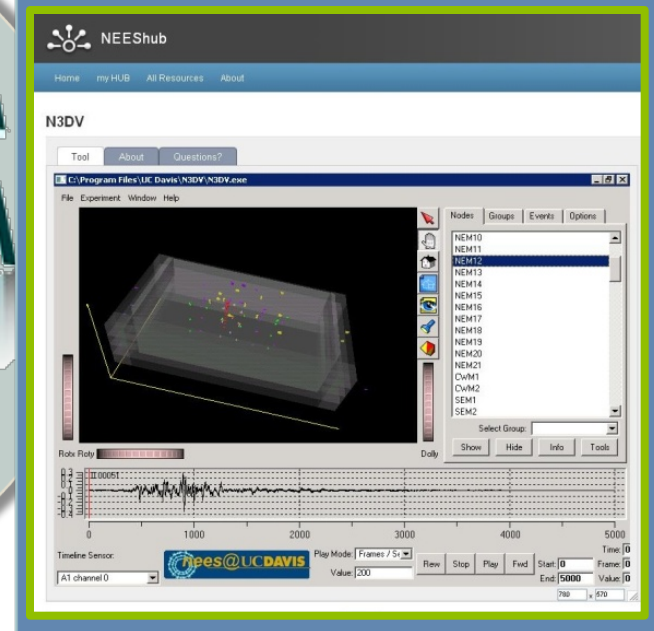
An integration framework for

Equipment @ 14 NEES Sites



Earthquake Engineering
Community

Community IT Tools





Challenges Creating the NEES Cyberinfrastructure

Data, data, data....

- ◆ Capturing, curating and presenting research projects and their results, so that others can understand and re-use NEES experiments.

Diversity of NEES sites

- ◆ 14 sites with 6 classes of equipment

Requirement gathering and analysis

- ◆ From sites, researchers, community, HQ





Why HUBzero ?

- ◆ Production strength
- ◆ Recognized as a successful Cyberinfrastructure by NSF
- ◆ Online tools – no download & install
- ◆ Data and tool co-location





What's missing?

“Data hub”

- 🌿 Data gathering and upload
- 🌿 Curation
- 🌿 Archiving
- 🌿 Data sharing support

NEESWood Benchmark

PI(s): Dr. J.W. van de Lindt, Dr. R.A. Davidson, Dr. A. Filiatraut, Dr. D.V. Rosowky, and Dr. M. Symans

Date: June 5, 2006 to November 15, 2006

Testing Site: SEESL - University at Buffalo

Project Description

This project seeks to take on the challenge of developing a seismic design philosophy that will provide the necessary mechanisms to safely increase the height of woodframe structures in active seismic zones of the U.S. as well as mitigating damage to low-rise woodframe structures. This will be accomplished through the development of a new seismic design philosophy that will make midrise woodframe construction a reality in regions where such a design philosophy fails to meet performance-based design goals.

Sponsor: National Science Foundation

Keywords: Seismic Design, Woodframe

Equipment

Main Equipment

Shake Table

Detailed Equipment List



The screenshot displays the Oracle Data Miner interface with several components:

- Decision Tree:** A tree structure showing splits based on attributes like 'AGE' and 'MARRIED'.
- ROC Curve:** A graph showing True Positive Rate vs. False Positive Rate with a threshold line.
- Histogram for AGE:** A bar chart showing the distribution of the 'AGE' attribute.
- Confusion Matrix:** A table showing classification results.
- Statistical Summary:** Metrics like Mean, Standard Deviation, and Variance for the selected attribute.



IT Team

NEES
Community

Data Sub
Comm
(Dyke)

RAAS
(Browning)

User's Forum
(van de Lindt)

CI
Sub Comm
of PAC
(Fortes)

Strategic Leadership

IT expertise

Rudi Eigenmann, Co-PI (Purdue)
Tom Hacker, Co-PI (Purdue)
Saurabh Bagchi, Co-PI (Purdue)

Earthquake Engineers

Ellen Rathje, Co-PI (UTexas)
Shirley Dyke, Co-PI (Purdue)
Santiago Pujol (Purdue)
Ayhan Irfanoglu (Purdue)

Operations

Dawn Weisman- IT Director

Greg Rodgers - Sr Software Eng
Brian Rohler - Sr Software Eng
NEEScomm IT Staff
Ann-Christine Catlin – Hub Tech, Data
HUB development staff

Equipment
Site IT