

Education, Outreach and Training NEES Annual Meeting

May 20, 2004



George E. Brown, Jr. Network for Earthquake Engineering Simulation



Accelerating Progress in EQ Engineering

- Disseminating research results
- Dialoging between researcher and practitioners
- Integrating research and education
- Training of users on equipment and IT tools and infrastructure
- Attracting young people into the field
- Public awareness



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The EOT Program is Underway

- Outreach
 - End Users Workshop June 23-25, 2004 to introduce NEESgrid system
- ES Training
 - NEES/IRIS/USGS - Workshop & Pilot Field Experiment April 29-30, 2004
 - UCD-RPI NEES centrifuge workshop Nov 11-12, 2004
 - Online safety training manual and equipment operation manuals
 - Winter lab visualization tool – Cornell
- Education
 - RETs, REUs
 - Online activities – Cornell
 - Visits by students and professionals



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Educational Strategic Plan

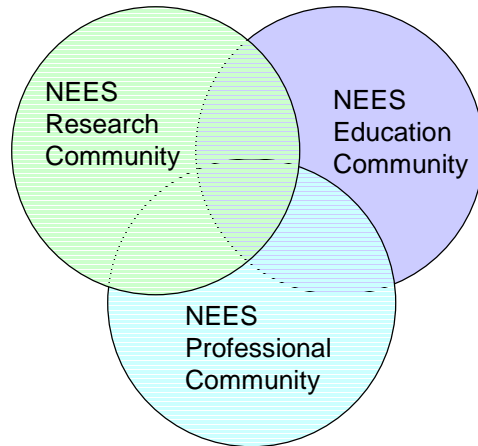
- NSF Award (0337808) “***An Educational Strategic Plan for the George E. Brown Network for Earthquake Engineering Simulation (NEES)***”
 - framework to be used by educators, researchers and organizations such as the NEES Consortium as they develop uses and applications of NEES to meet the educational and technological challenges of future K-16+ students, practitioners and interested public
 - reflect the priorities and needs of students, educators, researchers, practitioners, and the earthquake engineering community
- Gathering input from constituents, existing strategic plans, and experts in the field



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EOT Vision



Forums for exchange of innovations in education

- education track at the NEES annual meeting
- digital libraries
- online journal

Active professional and research community

- needs assessment
- synthesis projects
- seminars and publications



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Goals of the EOT Program

Education

- **Promote and support the use of NEES facilities, tools, research and research results in undergraduate, graduate and K-12 education** through development of an active NEES Educational Community.
- **Improve understanding and appreciation of earthquake engineering practice and research** by developing and disseminating NEES-related instructional materials and analysis tools
- **Improve the teaching and learning of earthquake engineering in undergraduate, graduate and K-12 education** by providing professional development in the use of the NEES Collaboratory for educational and outreach activities



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Goals of the EOT Program

Outreach

- **Promote interaction of practitioners with researchers and transfer of results of NEES research into practice** through an active NEES Professional Community
- **Promote the NEES Collaboratory** by disseminating information about NEES laboratory facilities, tools, research activities and research results
- **Increase the pool of outstanding and diverse students** interested in earthquake engineering and supporting disciplines by taking advantage of the NEES Collaboratory
- **Advance earthquake engineering research by partnering with other organizations to identify and promote community needs** in the areas of engineering, information technology, education, outreach, and public policy



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Goals of the EOT Program

Training

- **Promote participation in the NEES collaboratory** by providing training in the use of NEES laboratories and telepresence, collaboration, data archiving, analysis, visualization, and simulation tools



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Potential Activities for Higher Education Outreach

- REU (Research Experience for Undergraduates)
- IGERT (Integrative Graduate Education and Research Traineeship)
- Educational modules
- Digital library of NEES-developed educational resources
- Distributed analysis
- Electronic journal
- Facilitation of interaction between education and research community



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Potential Activities for K-12 Education Outreach

- RET (Research Experience for Teachers)
- Museums displays
- Educational modulus
- Open house
- Technical competitions
- Web-based resources (digital library, electronic encyclopedia of earthquakes)



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Potential Activities for Professional Community Outreach

- Observation of experiments and results (telepresence or in-person)
- Community-based assessment of earthquake research and practice needs
- Themed committees: distilled research and set priorities for application of research results to practice
- Seminars/newsletters for information transfer
- Training (web-based or short courses) for the practical use of the NEES Collaboratory
- Professional fellowships



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Digital Library for Education Resources

- Catalog of educational resources
 - Key for access to educational materials
 - Build in compatibility with existing digital libraries (DLESE, E3, NSDL, NEEDS etc.)
- High priority for faculty and teachers
 - input from regional workshops and EOT workshops
- Requires development of metadata for educational materials



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Challenges of EOT Program

- Coordinating training activities
- Coordinating outreach activities
- Helping researchers to match educational activities with goals of NEES
- Develop a dialog among researchers and those interested in developing EOT programs and materials



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Short Term Priorities for EOT Committee

- Review Strategic Plan
- Develop specifications for digital library
- Guidelines for educational materials
- Think about how to build the education community



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