Next-Generation Earthquake Engineering

The George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) is the National Science Foundation's (NSF) ten-year investment in the earthquake engineering research community. This ambitious project aims to reduce the vulnerability of our civil infrastructure to the damaging effects of earthquakes by accelerating the rate at which research discoveries are made and integrated into technologies and products for engineering practice.

By fostering the open exchange of data and information, NEES helps to broaden, strengthen, and diversify the field of earthquake engineering research.

The mission of the Network for Earthquake Engineering Simulation (NEES) is to enable collaboration and transformative research to reduce seismic risk by providing world-class community infrastructure.

NEES Experimental Sites

Cornell University
Lehigh University
Oregon State University
Rensselaer Polytechnic Institute
University at Buffalo
University of California, Berkeley
University of California, Davis
University of California, Los Angeles
University of California, San Diego
University of California, Santa Barbara
University of Colorado at Boulder
University of Illinois at Urbana-Champaign
University of Minnesota
University of Nevada, Reno
University of Texas at Austin

NEES Consortium, Inc.

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The NEES program is authorized by act of Congress under the National Earthquake Hazard Reduction Program (NEHRP).

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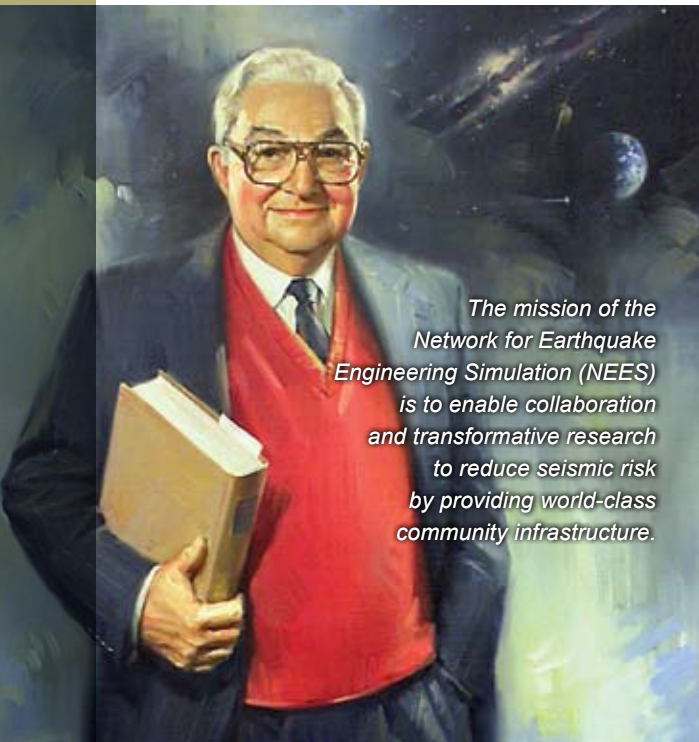
Revolutionizing our understanding of earthquake effects on the built environment

NEES

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

Experimental Laboratories

Providing world-class facilities to researchers at any institution

At the core of NEES are fifteen geographically distributed experimental laboratories, each offering unparalleled large-scale experimental capabilities. Laboratory types include:

- Shake Table
- Large-Scale Structural
- Geotechnical Centrifuge
- Tsunami Wave Basin
- Field Experimentation and Monitoring

Laboratories are made available to researchers outside of the host institutions through peer-reviewed NSF grants that encourage collaboration. Data from NEES projects are freely available to outside researchers. NEES laboratories are also encouraged to conduct research for public agencies or private industry.

NEESinc

NEES Consortium, Inc. (NEESinc) was formed in 2004 to provide governance and administration of the NEES experimental laboratories. More than a collection of unique facilities, NEESinc enables the network to function as a model "collaboratory" that is a focal point for the coordination of earthquake engineering research, development, technology transfer, education, and outreach activities worldwide.

Education, Outreach, and Training

Generating accessible research and education tools

NEESinc coordinates and implements geographically distributed education, outreach, and training (EOT) activities. These activities engage youth, students, researchers, and earthquake risk stakeholders, increasing the impact of NEES research and accelerating the transfer of research findings into practice, including:

- NEES Research Experience for Undergraduates Program (NEESreu)
- Researcher training workshops
- Research-to-practice & invited lecture webinars
- NEES annual meeting

Additional education and training initiatives maximize the quality, diversity, and impact of K-16, graduate education, and public information programs.

Cyberinfrastructure

Offering a unifying information technology infrastructure

NEES compounds the impact of its work through an advanced, secure cyberinfrastructure that integrates the equipment sites and enables remote participation and collaboration. Services include:

- NEEScentral, a curated, permanent, openly shared repository of high-quality experimental and simulation data
- Telepresence applications that provide remote participation capabilities
- Simulation/hybrid simulation that provide researchers with high-fidelity computational modeling tools
- Visualization applications that provide graphical representations of sensor data