



The NHERI SimCenter provides the cutting-edge, open-source computational tools and collaborative environment necessary to address one of the most pressing challenges of our time: protecting lives and property from the devastating effects of natural hazards. The SimCenter's work is fundamental to building a more resilient nation by enabling researchers to explore risk mitigation strategies and enhance community resilience.

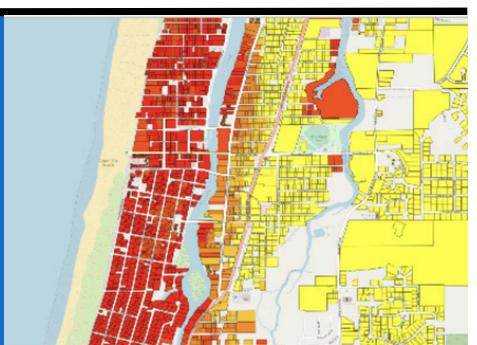


Researchers and professionals throughout the U.S. are leveraging SimCenter's resources to simulate the impact of earthquakes, hurricanes, tsunamis, and windstorms on structures, lifelines, and communities.



SimCenter software has more than 4,400 users, who have executed more than 100,000 simulations. For intensive calculations such as uncertainty quantification, users can rely on NHERI DesignSafe for high-performance computing (HPC).

## Software for a Resilient Nation



**The SimCenter's Application Framework is accessible through 6 desktop applications, or customized workflows, for understanding response and performance of structures and for characterizing natural hazard risks nationwide.**

### SIMULATION TOOLS FOR:

- Uncertainty quantification and optimization
- Structural response to earthquakes, extreme winds, tsunamis, and storm surges
- Damage and loss estimates scalable for regional simulations for hurricanes, earthquakes, and tsunamis
- Generation of high-resolution building inventory databases, enhanced with AI algorithms

**SimCenter users have secured support for their research from a wide range of sources, including state and local groups, all of whom have benefited from the NSF investment in the NHERI SimCenter.**



## SIMCENTER SOFTWARE IMPACT ON NATURAL HAZARDS MITIGATION



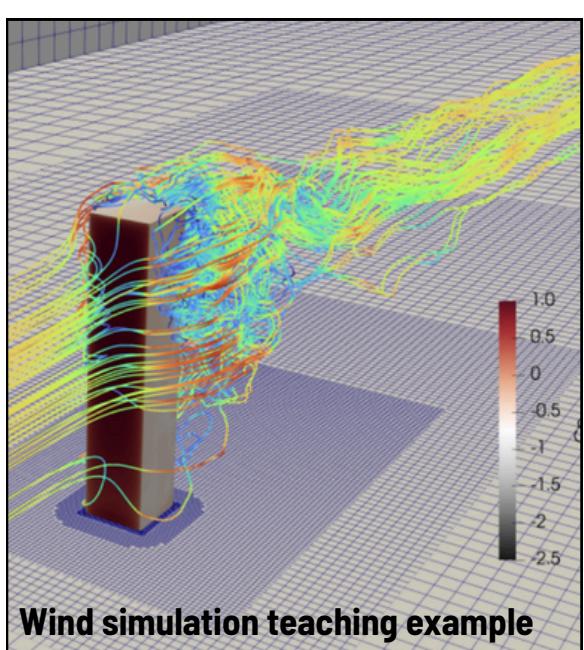
### PARTNERING WITH INDUSTRY & GOVERNMENT

SimCenter software is leveraged by engineering firms conducting performance-based design. Researchers employ SimCenter tools to assist agencies such as PG&E and Southern California's Metropolitan Water District to evaluate hazard risks to infrastructure and lifelines.



### COMMUNITY ENGAGEMENT & TRAININGS

550 attendees engaged and presented at three NHERI Computational Symposia. Community Roundtable webinars have informed more than 700 industry professionals and researchers. Over 40 SimCenter workshops and bootcamps have educated over 8,700 researchers. More than 100 SimCenter webinars have reached 3,600 attendees and inspired 54,000 YouTube views.



### EDUCATING FUTURE ENGINEERS

Hands-on educational modules facilitate integration of advanced simulations into the classroom. SimCenter educational apps have been downloaded over 6,000 times. SimCenter software has been incorporated over 35 times in graduate courses.

**SimCenter tools give natural hazards researchers the power to build resilience.**

**Discover the potential:**

