

Using NHERI and Extreme Events Reconnaissance / Research Networks

CONVERGE Leadership Corps converge.colorado.edu/research-networks/leadership-corps



CONVERGE Leadership Corps Established: 2019 CONVERGE The Leadership Corps brings together the principal Geotechnical **Extreme Events** Sustainah Material Reconnaissance investigators for the NSF-Social Scienc Managemen Extreme Events funded Extreme Events SUMMEER SSEER OSEEER StEEF **Reconnaissance and** Structural Operations Extrer and Systems Evente Engineering Extreme Ev **Research (EER) networks** Extreme Event and the NSF-funded NHERI NEER components that support extreme events research. RAPID **Article:** NHER https://www.frontiersin.org/articles/10.3389/fbuil. DESIGN Natural Hazards Network SAFE-C 2020.00110/full Coordination Reconnaissance Office Facility

DesignSafe Cyberinfrastructure

Extreme Events Reconnaissance / Research (EER) Networks





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CONVERGE

CONVERGE is a National Science Foundation-Natural Hazards Engineering Research Infrastructure (NSF-NHERI) facility dedicated to:

- identifying researchers;
- educating and training researchers;
- setting a convergence research agenda that is problem-focused and solutions-based;
- connecting researchers and coordinating functionally and demographically diverse research teams; and
- supporting and funding convergence research, data collection, data sharing, and solutions implementation.



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A Framework for Convergence Research in the Hazards and **Disaster Field: The Natural Hazards Engineering Research Infrastructure CONVERGE** Facility

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OPEN ACCESS

Edited by: Michael Keth Lindel University of Washington, United States Reviewed by: Flick Szostak, anaty of Alberta, Canada Laura Slebeneck, Inversity of North Texas, United States "Correspondence: Lori Pee Specialty section This article was submitted to Earthquake Engineering, a section of the journal ontiers in Built Environment Received: 12 April 2020 Accepted: 16 June 2020 Published: 07 July 2020 Citation Peek L, Tobin J, Adams RM, H and Mathews MC (2020) A Framework for Convergence search in the Hazards and Disaster Fleid: The Natural Hazards Engineering Research Intrastructure CONVERGE Facility. Pront. Built Environ. 6:110. doi: 10.3389/tbuil.2020.00110

The goal of this article is twofold: to clarify the tenets of convergence research and to motivate such research in the hazards and disaster field. Here, convergence research is defined as an approach to knowledge production and action that involves diverse teams working together in novel ways - transcending disciplinary and organizational boundaries - to address vexing social, economic, environmental, and technical challenges in an effort to reduce disaster losses and promote collective well-being. The increasing frequency and intensity of disasters coupled with the growth of the field suggests an urgent need for a more coherent approach to help quide what we study, who we study, how we conduct studies, and who is involved in the research process itself. This article is written through the lens of the activities of the National Science Foundation-supported CONVERGE facility, which was established in 2018 as the first social science-led component of the Natural Hazards Engineering Research Infrastructure (NHERI). Convergence principles and the Science of Team Science undergird the work of CONVERGE, which brings together networks of researchers from geotechnical engineering, the social sciences, structural engineering, nearshore systems, operations and systems engineering, sustainable material management, and interdisciplinary science and engineering. CONVERGE supports and advances research that is conceptually integrative, and this article describes a convergence framework that includes the following elements: (1) identifying researchers; (2) educating and training researchers; (3) setting a convergence research agenda that is problem-focused and solutions-based; (4) connecting researchers and coordinating functionally and demographically diverse research teams; and (5) supporting and funding convergence research, data collection, data sharing, and solutions implementation. Keywords: convergence research, natural hazards, disasters, interdisciplinary, transdisciplinary, training, Science of Team Science, research coordination schwarts

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OREGON STATE UNIVERSITY Wave Basin and Flume NSF Award # 1519679

UNIVERSITY OF TEXAS, AUSTIN Portable Earthquake Simulation NSF Award #1520808

> UC DAVIS Geotechnical Centrifuges NSF Award #1520581

> > UC SAN DIEGO Large Outdoor Shake Table NSF Award #1520904

PURDUE UNIVERSITY

Computational Simulation NSF Award #1612843

UC BERKELEY

UNIVERSITY OF TEXAS, AUSTIN Community Cyberinfrastructure NSF Award #1520817

FLORIDA INTERNATIONAL UNIVERSITY Wind Simulation NSF Award #1520853

UNIVERSITY OF FLORIDA Wind Simulation NSF Award #1520843

LEHIGH UNIVERSITY Hybrid Simulation NSF Award #1520765

Train and Mentor a Diverse Next Generation



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Social Science Extreme Events Research



Year Established	2017
Member Profile	Social and Behavioral Scientists and Others in Allied Disciplines Concerned with the Human Consequences Disasters
Current Membership	1,227
Primary Hazards	Natural, Technological, Terrorism and Willful Violence, Pandemics
Major Contributions	First Census of Social Scientists, Mobilization of the Social Science Community through Virtual Forums, COVID-19 Working Groups
Data Types	Qualitative, Quantitative, Mixed Methods
Website	converge.colorado.edu/research-networks/sseer



NSF Awards #1745611, #1841338

Lori Peek, Pl









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SSEER Activities

- 1. Annual Census and Interactive Map of Social and Behavioral Scientists
- 2. Virtual Forums
- 3. Training and Mentoring Activities
- 4. COVID-19 Working Groups Research Agendas
- 5. Global Research Registry
- 6. Social Science Data Ambassadors



Leadership Corps Accomplishments

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Communications

CONVERGE Leadership Corps

Internal Operations Manual

I. What is the purpose of this document?

This document was developed to clarify the structure, membership, scope, and purpose of the CONVERGE Leadership Corps.

II. Who is the audience?

This document is intended to be read and used by current and future members of the CONVERGE Leadership Corps. This document will also be made available to our NSF Program Directors.

III. What are the things we should all know and be clear on when we are speaking about the CONVERGE Leadership Corps?

1. What is CONVERGE?

CONVERGE is a National Science Foundation-Natural Hazards Engineering Research Infrastructure (NSF-NHERI) facility. The mission of CONVERGE is to

- identify and coordinate social science and engineering researchers and interdisciplinary research teams before, during, and after disaster;
- ✓ advance the ethical conduct and scientific rigor of rapid response disaster research;
 ✓ support the training and mentoring of a diverse next generation of hazards and disaster
- support the training and methoding of a diverse next generation of nazards and or researchers;
- fund virtual recomaissance, field research, and the development of novel research instruments and data collection protocols;

✓ accelerate the development of mobile applications for hazards and disaster research through a partnership with NSF-NHERI RAPID:

Data Collection



Training and Mentoring



SOCIAL VULNERABILITY AND DISASTERS



DISASTER MENTAL HEALTH

Data Publication

Data Publication



Designing is the web based epterminastructure gradient for the National Science Foundation Naturel Hazarda Engineering Research informational (MSR-Mill Dimension), inadepunctions of the University of Teacolution, Designified provides a secure data research and the computational topic records to manage, analyzed and publish onlocal data for network heards research. The Designified exploring addition supports durate the second to manage, analyzed and publish onlocal data for network heards research. The Designified exploring additional supports durate the second workflows, data analyzed and publish on the second second and research. The Designified exploring additional second secon

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CONVERGE Leadership Corps



For the first time, academic hazards-focused, disciplinary and interdisciplinary communities are working together on a large scale to advance:

- research coordination
- ethical best practices
- scientific agenda setting
- systematic data collection
- data sharing and publication

Thank you!

Comments, Information Sharing, Questions?

