

CONVERGE: NHERI's Social Science Facility

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NATURAL HAZARDS ENGINEERING RESEARCH INFRASTRUCTURE (NHERI)



PURDUE UNIVERSITY
Network Coordination Office



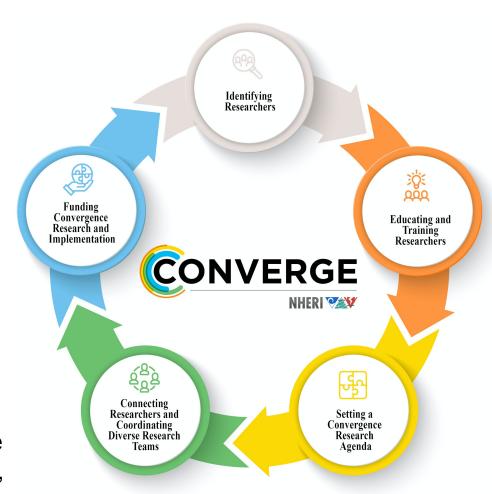




CONVERGE

CONVERGE is a new 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.







CONVERGE

- In 2020 we published an article on CONVERGE in Frontiers in Built Environment
- This article synthesizes 20 years of convergence research in an effort to bring that framework to the natural hazards field
- Access the article for free online at:

https://www.frontiersin.org/articles/10.3389/fbuil.2020.00110/full



ORIGINAL RESEARCH
published: 07 July 2020



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

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¹ Department of Sociology, Natural Hazards Center and CONVERGE, University of Colorado Boulder, Boulder, CO, United States, ³ Natural Hazards Center and CONVERGE, University of Colorado Boulder, Boulder, CO, United States, ³ Faculty of Health, School of Social Work, Dalhousie University, Haffax, NS, Canada, ⁴ Geographical Sciences and Urban Planning, Arbana State University, Tempa, AZ, United States

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Earthquake Engineering, a section of the journal Frontiers in Built Environment Received: 12 April 2020

> Accepted: 16 June 2020 Published: 07 July 2020

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Plook L, Tobin J, Adams FM, Wu H and Mathews MC (2020). A Framework for Convergence Flosserch in the Hazards and Disaster Floid: The Natural Hazards Engineering Research Infrastructure CONVERGE Facility. Front. Built Environ. 6:110. doi:10.3389/fbail.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 guide 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 networks

Frontiers in Built Environment | www.frontiersin.org

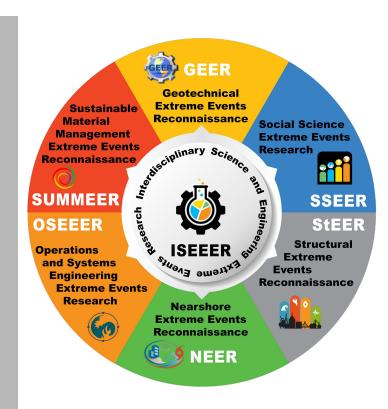
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NSF Extreme Events Reconnaissance / Research (EER) Networks

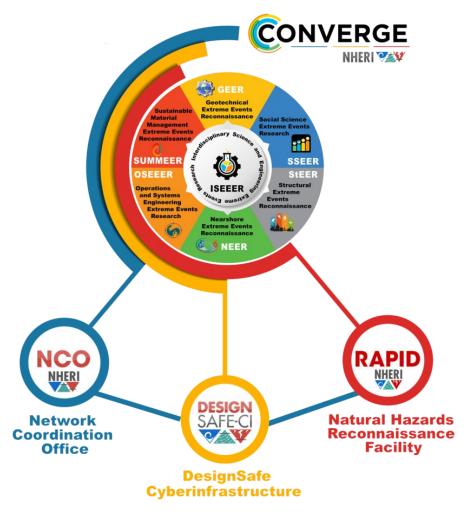
- 1. Geotechnical Engineering (GEER)
- 2. Social Sciences (SSEER)
- 3. Structural Engineering (StEER)
- 4. Nearshore Systems (NEER)
- Operations and Systems Engineering (OSEER)
- Sustainable Material Management Engineering (SUMMEER)
- Interdisciplinary Science and Engineering (ISEEER)







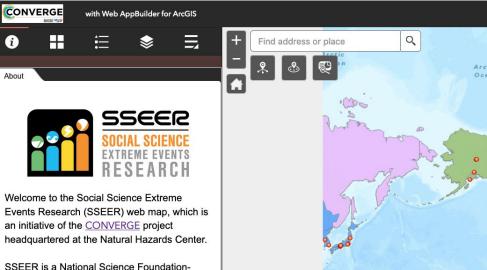
Leadership Corps for Natural Hazards Research





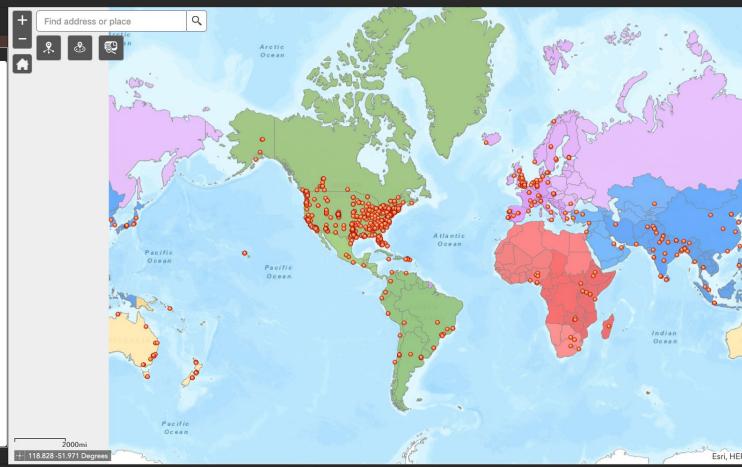


SSEER



SSEER is a National Science Foundationsupported network for social science hazards and disaster researchers. The purpose of SSEER is to identify and connect social science researchers to one another, to interdisciplinary teams, and to communities at risk to and affected by hazards and disasters.

The SSEER Researchers interactive web map highlights the location of SSEER researchers and includes information about them, including their organizational affiliations, job titles, disciplinary foci, methodological expertise, the types of hazards and disasters they study, the events they have researched, and other

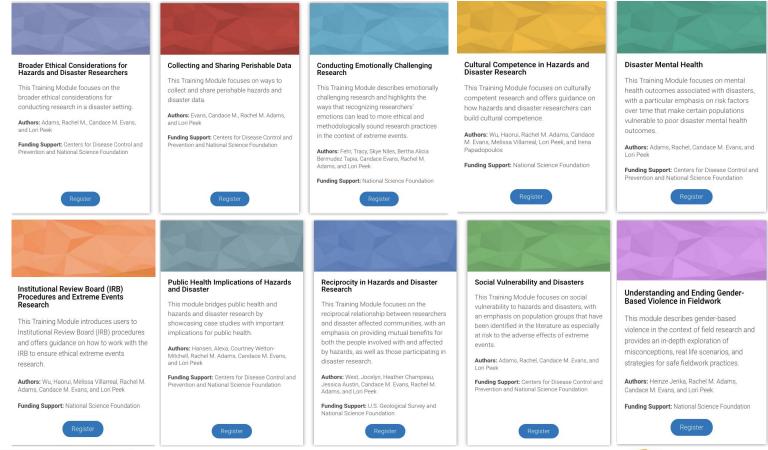






CONVERGE Training Modules

 Free, online courses designed to accelerate the training of diverse hazards and disaster researchers, including students and early career researchers







CONVERGE Training Modules

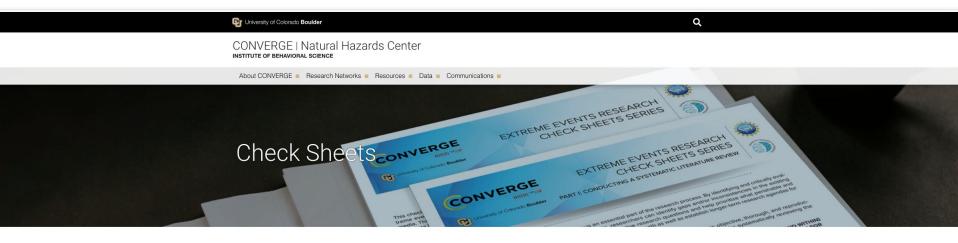
- Worth 1 contact hour of general management training through the International Association of Emergency Managers (IAEM) certification program.
- Assignment bank for course for instructors
- Annotated bibliographies to complement training module







Check Sheets



Resources / Check Sheets

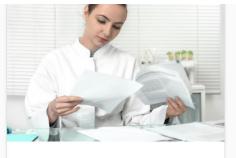
Extreme Events Research Check Sheets Series

These short, graphical check sheets are meant to be used as researchers design their studies, prepare to enter the field, conduct field research, and exit the field. The series offers best practices for extreme events research and includes check sheets for free to the research community.





PART I: CONDUCTING A SYSTEMATIC LITERATURE REVIEW



PART II: SYSTEMATIC LITERATURE REVIEW **TABLE**



BRING TO THE FIELD

NSF Award #1841338





Data Ambassadors

CONVERGE Data Ambassadors

CONVERGE Data Ambassadors have completed a National Science Foundation-supported <u>Publish Your Data</u> Training session. As Data Ambassadors, they have committed to publishing their own data and instruments on <u>DesignSafe</u>, to learning about the <u>CONVERGE</u> and <u>BAPID</u> facilities and their resources, and to sharing their newly attained knowledge with other social and behavioral scientists and colleagues from other allied disciplines in the hazards and disaster field. CONVERGE Data Ambassadors will help usher in a culture shift toward data publication and data and instrument sharing across disciplines.

The following page includes a list of instruments, reports, protocols, and other research materials published by the CONVERGE Data Ambassadors via the DesignSafe Cyberinfrastructure.



Lauren Clay
Associate Professor, Health Administration and Public Health
D'Youville College

Research Instrument Repository:

Clay, L. (2020). "COVID-19 and Social Determinants of Health Data Collection Instrument Repository." DesignSafe-CI. https://doi.org/10.17603/ds2-nay0-j518.

Clay, L. S. Penta, and A. Silver, (2020), "Risk Perception, Information Seeking, and Protective Actions During COVID-19 Among New Yorkers [May-July 2020]," In A Multi-Wave Study of Risk Perception, Information Seeking, and Protective Action in COVID-19. DesignSafe-CI. https://doi.org/10.17603/fsz-7019-cs3.

Data Report

Clay, L. S. Rogus, and P. Gadhoke. (2020). "Primary and Secondary Health Impacts of the COVID-19 Pandemic on New Yorkers (May-June 2020);" in National Food Access and COVID Research Team (NFACT) - New York. DesignSafe-CI. https://doi.org/10.17603/ds2-xe2x-xs40.



Alex Greer
Associate Professor, College of Emergency Preparedness, Homeland Security, and Cybersecurity
University at Albany

Research Instruments and Data

Greer, A., T. Wu, H. Murphy, and R. Chang. (2020). "Survey of Students and Households and Interviews with Key Stakeholders in Oklahoma," in Earthquake Adjustment in Oklahoma. DesignSafe-Cl. https://doi.org/10.17603/ds2-dn02-0113.



Betty Lai Buehler Sesquicentennial Assistant Professor, Department of Counseling, Developmental, and Educational Psychology Boston College

Interview Protocol

Hoskova, B. J. Medzhitova, C. Colgan, B. Liang, and B. Lai. [2020]. 'Time 1 Interview Protocol on Colleges and COVID-19,' in Colleges and the COVID-19 Crisis. DesignSafe-CI. https://doi.org/10.37603/ds2-erzs-j690.



Forfessor, Department of Sociology and Director, Natural Hazards Center Principal Investigator, CONVERGE, SSEER, and ISEEER University of Colorado Boulder

Dataset

Peek, L., E. Hines, M. Mathews, J. Gunderson, and H. Wu. (2020). "Global Academic Hazards and Disaster Research Centers Data." DesignSafe-Cl. https://doi.org/10.17603/e9wq-q257.

Research Instruments

Peacock, W., N. Rosenheim, D. Gu, S. Van Zandt, L. Peek, M. Dillard, J. Tobin, and S. Hamideh, (2020). "Household Survey Instrument, November 26, 2016: Wave 1;" in A Longitudinal Community Resilience Focused Technical Investigation of the Lumberton, North Carolina Flood of 2016. Design 5afe-Ct. https://doi.org/10/17692/des2-pmt9-1-533.

Scoping Literature Review

Wu, H., L. Peek, M. Mathews, and N. Mattson. (2020). "A Scoping Literature Review: Cultural Competence for Hazards and Disaster Research." DesignSafe-Cl. https://doi.org/10.17603/ds2-9v28-7v76.



Nathanael Rosenheim Associate Research Scientist and Director of Research, Hazard Reduction & Recovery Center Texas ABM University

Research Instruments:

Peacock, W., N. Rosenheim, D. Gu, S. Van Zandt, L. Peek, M. Dillard, J. Tobin, and S. Hamideh. (2020). "Household Survey Instrument, November 26, 2016. Wave!," in A Longitudinal Community Resilience Focused Technical Investigation of the Lumberton, North Carolina Flood of 2016. Designofase*C. L Nets/Edio.craft/0.17603/6452-pmsf-9-533.

Rosenheim, N., W. Peacock, M. Perez, and G. Lane. (2020). "Food Retail Survey Instrument," in Food Access Impact Survey for Southeast Texas and Harris County. Texas after Hurricane Harvey. DesignSafe-Cl. https://doi.org/10.17603/ds2-ac2k-dv92.

oolkit:

Rosenheim, N., M. Stanley, C. Goodman, A. Berd, S. Hayes, E. Millard, J. Korukonda, and M. Watson. (2020). "Systematic Literature Review Toolkit." DesignSafe-Cl. https://doi.org/10.17603/ds2-3fn5-4b44.



Gavin Smith
Professor, Department of Landscape Architecture and Environmental Planning
North Carolina State University

Research Instrument

Smith, G., O. Vila, and G. Caverly. (2020). "A National Evaluation of State Roles in Hazard Mitigation: Building Local Capacity to Implement FEMA Hazard Mitigation Assistance Grants." DesignSafe-Cl. https://doi.org/10.17603/ds2-sjbv-eg87.



Maria Watson
Research Assistant Professor, Department of Landscape Architecture and Urban Planning
Tayan ARM University

esearch Instruments

Sutley, E., M. Dillard, S. Hamideh, W. Peacock, J. Tobin, L. Peek, K. Seong, A. Barbosa, T. Tomiczek, J. van de Lindt, and D. Gu. (2020).

"Household Survey Instrument, January Ja, 2018: Wave 2," in A. Longitudinal Community Resilience Focused Technical Investigation of the Lumberton, North Carolina Flood of 2016. Design Safe-Ci. https://doi.org/10.1765/342-ds.31-gv28.

Xiao, Y., M. Watson, J. Helgeson, K. Farokhnia, J. van de Lindt, J. Mitrani-Teisier, E. Sutley, D. Deniz, T. Tomiczek, A. Barbosa, J. Fung, O. Nofal, and M. Kollou. (2020). "Business Survey Instrument, January 19, 2018. Wave 2." In A Longitudinal Community Resilience Focused Technical Investigation of the Lumberton, North Carolina Flood of 2016. Design5afe-CL. https://doi.org/10.1760/3645-7918-t-fn03.



Haorui Wu Assistant Professor, School of Social Work Dalhousie University

Dataset:

Peek, L., E. Hines, M. Mathews, J. Gunderson, and H. Wu. (2020). *Global Academic Hazards and Disaster Research Centers Data.* DesignSafe-Cl. https://doi.org/10.17603/e9wq-qz57.

Scoping Literature Review:

Wu, H., L. Peek, M. Mathews, and N. Mattson. (2020). "A Scoping Literature Review: Cultural Competence for Hazards and Disaster Research." DesignSafe-Cl. https://doi.org/10.17603/ds2-9vz8-7/76.



H. Tristan Wu Associate Professor, Department of Emergency Management and Disaster Science University of North Texas

Research Instrument

Wu, T., S. Huang, and M. Lindell. (2020). "Household Mail Survey," in 2011 New Zealand and Japan Earthquake Household Response Survey. DesignSafe-Cl. https://doi.org/10.17603/ds2-st68-6b42.





COVID-19 Resources



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COVID-19 Virtual Forums

CONVERGE virtual forums bring together researchers to coordinate and collaborate after major events. Please check here for upcoming virtual forums and recordings of past forums.





COVID-19 Quick Response Research Grants

This is a list of recently funded COVID-19 Quick Response Research. These were awarded by the Natural Hazards Center as part of two distinct special calls for research on this global crisis. Within three months of completing data collection, researchers submit an abstract and 10-page report detailing their preliminary findings. Completed reports are available on the Quick Response Reports page.







Webinars



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About CONVERGE Research Networks Resources Data Communications

CONVERGE Webinar Series



CONVERGE Collecting and Sharing Perishable Data Training Module: A Demonstration Webinar

Aug 6, 2021 - 12 to 12:30 pm MT



Make CONVERGE Training Modules Part of Your College/University Course

Jul 15, 2021 - 2 to 3:15 pm MT



CONVERGE Extreme Events Research

Jun 15, 2021 - 10 to 10:30 am MT



Mobile Data Collection via RApp: Advanced Ouestionnaires

Dec 11, 2020 - 11 to 11:30 am MT



Coordinating After Natural Hazards to Document the Performance of the Built Environment: The Structural Extreme

Oct 23, 2020 - 1 to 1:30 pm MT



CONVERGE Conducting Emotionally Challenging Research Training Module: A Demonstration Webinar

Oct 8, 2020 - 2 to 2:30 pm MT

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CONVERGE Broader Ethical Considerations for Hazards and Disaster Researchers Training Module: A Demonstration Webinar

Apr 15, 2021 - 10 to 10:30 am MT



CONVERGE Understanding and Ending Gender-Based Violence in Fieldwork Training Module: A Demonstration

Mar 16, 2021 - 3 to 3:30 pm MT



Publish Your Data! Learn How to Use DesignSafe and Meet the CONVERGE Data Ambassadors

Jan 29, 2021 - 1 to 1:30 pm MT



Collaborating to Learn from Hurricanes: The Nearshore Extreme Events Reconnaissance (NEER) Association

Aug 11, 2020 - 2:30 to 3 pm MT



CONVERGE Institutional Review Board (IRB) Procedures and Extreme Events Research Training Module: A Demonstration Webinar

Jun 25, 2020 - 12 to 12:30 pm MT



CONVERGE Federal Briefing - Rapid Response Disaster Research: NSF-

May 20, 2020 - 10 am to 12 pm MT





Work Environment: CONVERGE Team



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About CONVERGE ■ Research Networks ■ Resources ■ Data ■ Communications ■

CONVERGE Team











Heather Champeau



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Candace Evans Graduate Research Assistant and Co-Lead Training Module Developer, CONVERGE



Jessica Austin Graduate Research Assistant, CONVERGE and Data Manager, SSEER

Graduate Research Assistant, CONVERGE



Alexa Hansen Research Affiliate, CONVERGE alexa.hansen@cuanschutz.edu



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We envision a just and equitable world where knowledge is applied to ensure that humans live in harmony with nature.



Contact Us:

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