



CONVERGE and the Social Science Extreme Events Research Network (SSEER)



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NSF Award #1635593 and #1841338



Natural Hazards Center



CONVERGE

A photograph showing the aftermath of a disaster. Three workers wearing orange safety vests with the word 'RAPID' on the back are standing on a dirt path. They are looking at a large, multi-story building that has been severely damaged, with its roof and upper floors partially collapsed. Debris is scattered around the base of the building. A large palm tree trunk is visible on the left side of the frame. The sky is blue with some clouds.

*What is the
problem you
are trying to
solve?*

Challenges

- Disaster research has historically been highly event-driven and reactive
- Influx of researchers without requisite knowledge or skills
- Communication and coordination issues
- Ethical breaches and cultural missteps
- Collaboration gaps
- Repeated findings versus systematic replication and scientific leaps forward





Opportunities

- Identifying researchers *before* disaster, by discipline and expertise
- Cultivating, training, and supporting hazards and disaster researchers
- Developing academic and inter-organizational collaborations
- Setting disciplinary and interdisciplinary scientific agendas
- Turning new knowledge into action

CONVERGE

- CONVERGE is a National Science Foundation-funded shared-use facility dedicated to advancing the **ethical conduct** and **scientific rigor** of convergent hazards and disaster research



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CONVERGE and the SSEER Network

CONVERGE develops
free **resources** to help
train a **diverse next-**
generation of the
hazards and disaster
workforce.



	Recommendation	Recommended timeline for implementation
	Building Institutional Capacity—Advancing and Creating Partnerships	
2.1	Support and encourage USGS scientists involved in risk research and applications to engage and collaborate with external partners on scientific research, product development, and complementary message delivery. This engagement requires an investment of salary time and possibly travel that must be supported and funded in order to be successful.	<1 year
2.2	Establish and support a process to evaluate and improve the dissemination, usability, knowledge uptake, and impact of USGS risk research and applications with key partners, recognizing that partners will vary by hazard and region. Work with external partners with expertise in program evaluation and adaptive management to help the USGS develop actionable metrics for gauging the societal use and impact of USGS risk research and applications.	1 year
4.5	Provide mentoring resources for scientists and staff pursuing risk research and applications. Encourage early career scientists and staff interested in risk research and applications to enter the USGS Mentoring Program as protégés and to select mentors with experience in risk research and applications. Encourage those with experience in risk research and applications to apply to be mentors.	1–2 years
4.6	Provide scientists and staff with opportunities for informal and formal training related to risk research and applications. Develop in-person and (or) online training courses on topics related to risk research and applications and (or) identify opportunities available at other agencies or organizations. Topics could include effective partnering, human-centered design thinking, risk analysis, risk communication, web application development, project management, and others.	2–3 years
4.7	Share expertise in risk research and applications through short-term personnel assignments. Identify funding and administrative support for short-term assignments where individuals with risk expertise work with internal USGS projects and (or) partner agencies.	1–2 years



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Science for a Risky World—A U.S. Geological Survey Plan for Risk Research and Applications

Circular 1444

U.S. Department of the Interior
U.S. Geological Survey

CONVERGE Training Modules

Free, interactive, online trainings designed for students, early career professionals, and others who are new to hazards and disaster research and practice. They incorporate an all-hazards approach grounded in cutting edge research from the social sciences, public health, engineering, and other disciplines. Each module features:

- Learning objectives
- Lesson plans
- Case studies
- A list of additional resources
- A final quiz worth **one contact hour** of general management training through the International Association of Emergency Managers (IAEM) certification program.




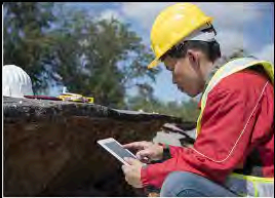










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Available Training Modules

- Since July 2019, the CONVERGE team and our partners have released **12 Training Modules**
- **Funding Support:** NSF, CDC, and USGS

converge.colorado.edu/resources/training-modules/

			
Broader Ethical Considerations	Collecting and Sharing Perishable Data	Cultural Competence	Disaster Mental Health
			
Emotionally Challenging Research	Gender-Based Violence in Fieldwork	Indigenous Sovereignty in Disasters	Institutional Review Board Procedures
			
Positionality	Public Health Implications	Reciprocity in Research	Social Vulnerability and Disasters



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Training Modules

Foundational Training Module Topics

- Institutional Review Board (IRB) Procedures and Extreme Events Research
- Conducting Emotionally Challenging Research
- Cultural Competence
- Collecting and Sharing Perishable Data
- Social Vulnerability and Disasters
- Disaster Mental Health

Shared Themes



Advanced Training Module Topics

- Broader Ethical Considerations
- Positionality
- Reciprocity
- Understanding and Ending Gender-Based Violence in Fieldwork
- Public Health Implications of Hazards and Disaster Research



Learn more about CONVERGE at converge.colorado.edu



Training Module Development Team



LEAD DEVELOPER



CO-LEAD DEVELOPER

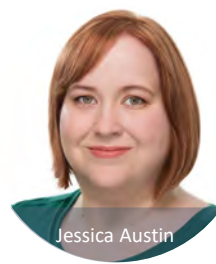


PRINCIPAL INVESTIGATOR

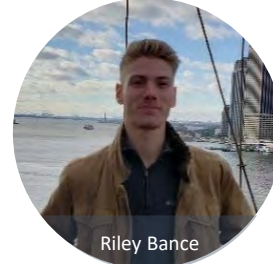
Our Training Module Development team works with graduate students, faculty, practitioners, and others who are working on cutting edge topics relevant to the series' core themes.



Training Module Collaborators



Jessica Austin



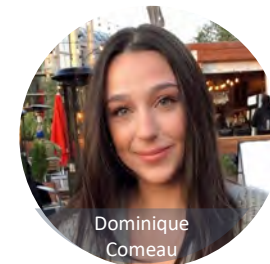
Riley Bance



Paulette Blanchard



Heather
Champeau



Dominique
Comeau



Tracy Fehr



Lin Frazer



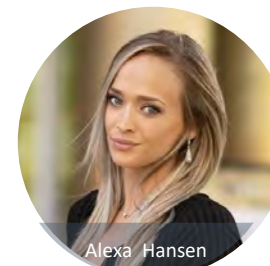
Patrick Freeland



Christine
Gibb



Ciarra Greene



Alexa Hansen



Jerika Heinze



Lesley Iaukea



Julie Maldonado



Brigid Mark



Molly McKeown



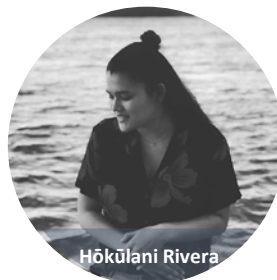
Michelle
Montgomery



Jasmine Neosh



Skye Niles



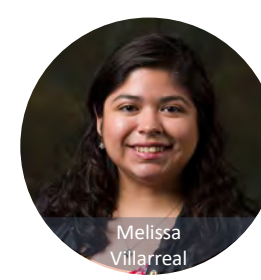
Hōkūlani Rivera



Bella Runza



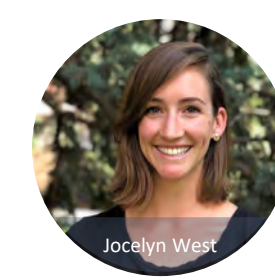
Bertha Tapia



Melissa
Villarreal



Courtney Welton-
Mitchell



Jocelyn West

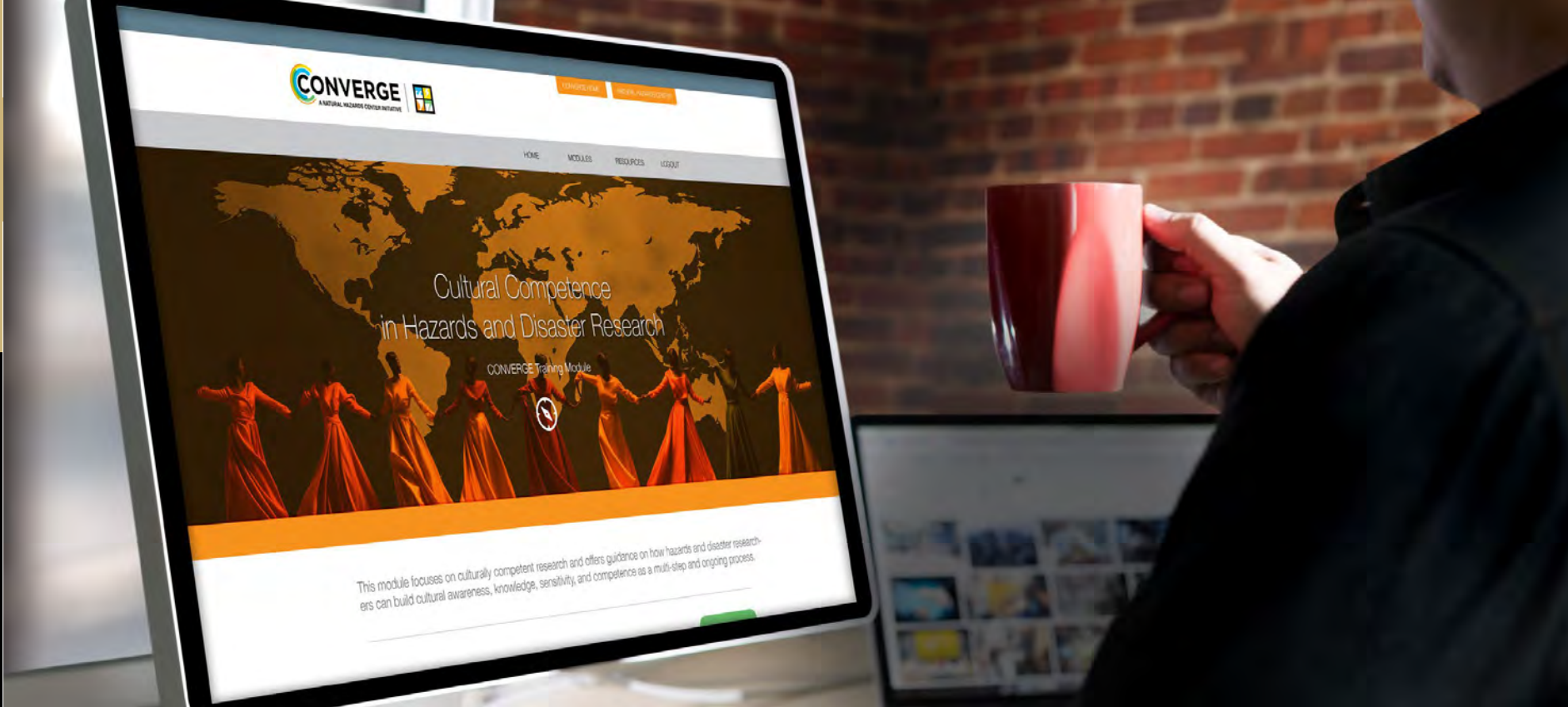


Haorui Wu



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A Brief Review of Select Available Training Modules

converge.colorado.edu/resources/training-modules/

Broader Ethical Considerations for Hazards and Disaster Researchers

Collecting and Sharing Perishable Data

Conducting Emotionally Challenging Research

Cultural Competence in Hazards and Disaster Research

Disaster Mental Health

Indigenous Sovereignty in Disaster Research

Institutional Review Board (IRB) Procedures and Extreme Events Research

Positionality in Hazards and Disaster Research and Practice

Public Health Implications of Hazards and Disaster Research

Reciprocity in Hazards and Disaster Research

Social Vulnerability and Disasters

Understanding and Ending Gender-Based Violence in Fieldwork



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Reciprocity in Research

- Reciprocity in research involves an ongoing practice of reflection, relationship-building, and mutually-beneficial exchange between researchers and partners/participants
- Researchers have an **ethical obligation** to work to produce mutual benefits for the people involved with or affected by the hazards and disaster research process
- The unique context of each study will determine how to engage in reciprocal relationships
- Examples of reciprocity include **compensation, training, cultural preservation**, and the provision of **research resources** such as the return of data, findings, or other information



Collecting and Sharing Perishable Data

The **context** of perishable data collection introduces unique **ethical challenges** for disaster researchers



Time Pressures

- Rapid data collection

Power and Resource Gaps

- Outside researchers in culturally unfamiliar contexts

Emotional Challenges

- Exposed to widespread damage, destruction, and loss of life
- Witnesses to disproportionate impacts among marginalized populations and newly vulnerable people

Coordination Complications

- Teams must balance the need to collect perishable data while not interfering with emergency response efforts
- Locally-affected colleagues may be disaster survivors and disaster first responders

Collecting and Sharing Perishable Data

- Collecting **perishable data** requires thoughtful attention to our **ethical principles and collective responsibilities**
- A definition of perishable data:

Perishable data is highly transient data that may degrade in quality, be irrevocably altered, or be permanently lost if not collected soon after it is generated. Perishable data includes ephemeral information that exists before, during, or after a disaster that, if gathered, can characterize pre-existing hazardous conditions, near-miss or actual disaster events, and longer-term recovery processes. This data may need to be collected at multiple points in time across varying geographic scales to accurately characterize exposure, susceptibility to harm, and coping capacity.¹

¹Adams, R. M., Evans, C. M., & Peek, L. (2023). Defining, collecting, and sharing perishable disaster data. *Disasters* 48(1): e12592.
<https://doi.org/10.1111/disa.12592>



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Broader Ethical Considerations

Outside the Purview of the IRB

- IRBs mostly focus on the initial stages of research
- Once a study is initially approved, IRBs only require researchers to outline any deviations from the original protocol and to report any adverse events
- IRBs do not typically require investigators to report on the myriad *ethical dilemmas* that may arise over the longer-term



Evans, C.M., Adams, R. M., & Peek, L. (2024). Ethical considerations for hazards and disaster research. Forthcoming in *Reducing Risks: A WSPC Reference on Preventing and Mitigating Disasters and Dangers—Volume 3: Praxis and Action*, edited by JC Gaillard, M. Rashid, and G. Fernandez. Singapore: World Scientific Publishing, Co.



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Broader Ethical Considerations

A Scenario and Strategies for Addressing Ethical Dilemmas



MODULES RESOURCES CERTIFICATION

Is disproportionate gift giving acceptable when it is visible to the whole network?

Except from Browne and Peek's (2013) *Beyond the IRB: An Ethical Toolkit for Long-Term Disaster Research*:

"I had worked hard all these years of my research to express my gratitude to Katie and her sisters in equal measure—gift cards, birthday gifts, holiday gifts, gifts upon visiting, surprise gifts. But when the hard reality of final post-disaster compensations became apparent, I wanted to do something more for Katie. After all, she had not only gotten a pitifully small allowance from Road Home, she had also suffered a terrible stroke in December 2007, leaving her without the ability to speak or walk. Until her stroke, Katie had been the most generous person imaginable to me—offering up her homemade food, her ready conversation, and unlimited access to her life and home. I wanted to give Katie something to show my recognition of the injustice of her housing outcome and to contribute in some small way to her

✓ LESSON 4: STRATEGIES FOR CONDUCTING ETHICALLY SOUND DISASTER RESEARCH

- ✓ Engage Local Partners
- ✓ Actively Coordinate with Other Researchers
- ✓ Select and Treat Research Participants Equitably
- ✓ Consider the Risk-Benefit Ratio of the Research
- ✓ Follow Best Practices for Establishing Informed Consent
- ✓ Use Participatory Approaches
- ✓ Share Data and Findings
- ✓ Practice Ethical Reflexivity
- ✓ Establish an Ethical Toolkit

✓ POST-MODULE ASSESSMENT

☐ FINAL QUIZ



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Social Vulnerability and Disasters

- Certain populations are more susceptible to the negative impacts of hazards and disasters
- Social factors that influence vulnerability include **age, income, race/ethnicity, disability/pre-existing health issues, English proficiency, and immigration status**, among others
- Additional considerations are needed when working with at-risk populations who are vulnerable to coercion or undue influence
- Data, resources, tools to conduct research with and in partnership with potentially vulnerable populations



Adams, R. M., Evans, C., Wolkin, A., Thomas, T. & Peek, L. (2022). Social vulnerability and disasters: Development and evaluation of a CONVERGE training module for researchers and practitioners. *Disaster Prevention and Management: An International Journal*, 31(6), 13-29.
<https://doi.org/10.1108/DPM-04-2021-0131>



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Emotionally Challenging Research

- Disasters wreak havoc on communities and can make research in these settings emotionally challenging
- Examples of emotional challenges include vicarious trauma, compassion fatigue, and burnout
- Recognizing researchers' emotions can lead to more ethical and methodologically sound research practices
- There are strategies to help cope with emotionally challenging research, such as journaling, counseling, and peer and institutional support



Bermúdez Tapia, B., Fehr, T., Niles, S., Peek, L., Evans, C., & Adams, R. Conducting emotionally challenging research: Lessons from the field. Under Review in *Qualitative Research*.



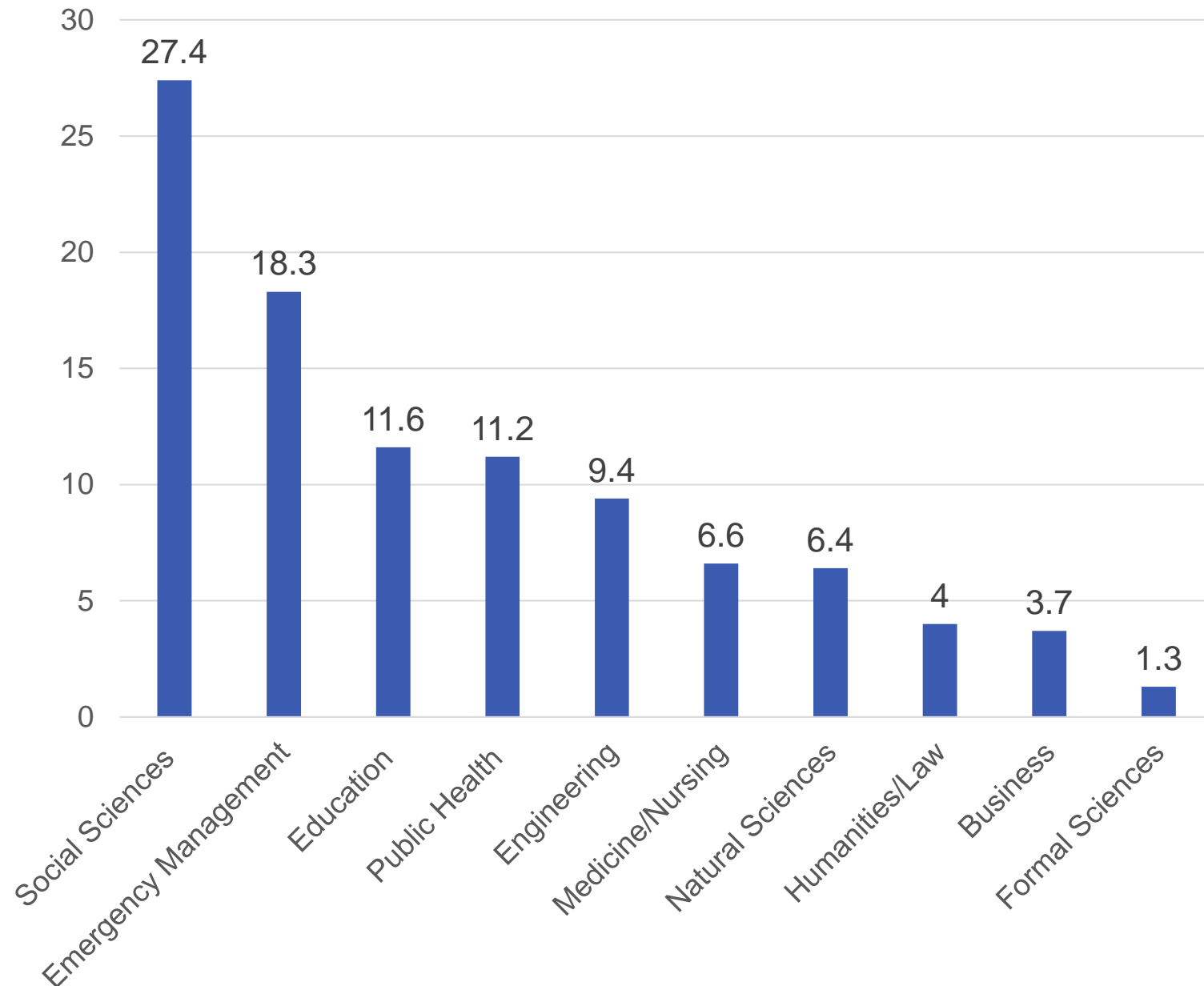
Training Module Evaluations

CONVERGE

Training Modules: Use and Impact

- **9,067 Training Module Registrants**
- **11,633 Successfully Completed Modules**

% Completions by Discipline



Training Module Evaluations



Evaluation Data:

The Training Modules lead to an increase in knowledge, skills, and attitudes – especially among students, early career researchers, and members of historically underrepresented groups

converge.colorado.edu/publications/



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Additional CONVERGE Resources



Additional CONVERGE Resources



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CONVERGE TRAINING MODULES
ANNOTATED BIBLIOGRAPHY

CONVERGE Cultural Competence Annotated Bibliography

This annotated bibliography includes resources focused on cultural competence in hazards and disaster research. This bibliography is meant to support those interested in learning more about how to build cultural competence and to complement the CONVERGE Cultural Competence in Hazards and Disaster Research Training Module. These references were compiled through searching Web of Science, Ebscohost, Proquest, and Google Scholar databases. If you identify missing references, please send them to converge@colorado.edu, and we will add them to the list.

Citation

Anderson, M. B., & Woodrow, P. J. (1998). *Rising from the ashes: Development strategies in times of disaster*. Lynne Rienner Publishers.

Abstract

N/A

Citation

Ball, A., Anderson-Butcher, D., Mellin, E. A., & Green, I. H. (2010). A cross-walk of professional competencies involved in expanded school mental health: An exploratory study. *School Mental Health*, 2, 114-124. <https://doi.org/10.1007/s12310-010-9039-0>

Abstract

Expanded school mental health (ESMH) programs often involve individuals from a variety of professions working together to address student needs evident across school, family, and community systems. Profession-driven differences in philosophies, expectations regarding confidentiality, and graduate training that reinforces isolated rather than interprofessional approaches to working with students, however, represent real challenges to maximizing the potential of ESMH. To address these issues, this exploratory study identified a common set of competencies to support interprofessional practice in ESMH. A total of 51 competencies were identified across seven theme areas, including: (1) Key Policies and Laws; (2) Interprofessional Collaboration; (3) Cross-Systems Collaboration; (4) Provision of Academic, Social-Emotional, and Behavioral Learning Supports; (5) Data-Driven Decision-Making; (6) Personal and Professional Growth and Well-Being; and, (7) Cultural Competence. Mapping of the competencies to existing accreditation and practice standards

1 CONVERGE TRAINING MODULES | ANNOTATED BIBLIOGRAPHY SERIES

CONVERGE | National Hazards Center | CU Boulder
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CONVERGE TRAINING MODULES
SAMPLE ASSIGNMENT

SOCIAL DIMENSIONS OF NATURAL HAZARDS TRAINING MODULE ASSIGNMENT

Course: NR 303: Humans and the Environment
Description: Guest lecture for a 3 credit undergraduate course at North Carolina State University. Presented as part of the Risk and Hazards module.
Student Lecturer: Olivia Via, PhD student at North Carolina State University in the Department of Parks, Recreation, and Tourism Management
Email: olivia@ncsu.edu
Session: Fall 2019
Due: October 29, 2019

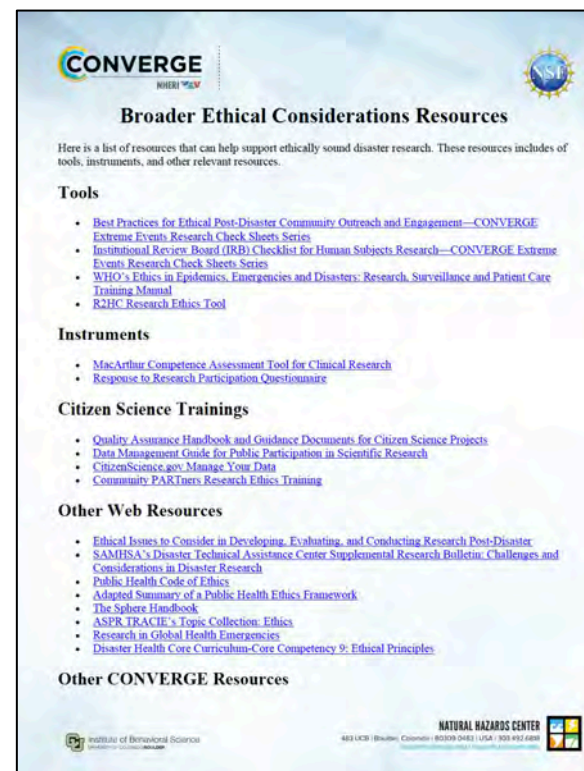
Guest Lecture Overview:
As part of your Risk and Hazards module, you will have a guest speaker who will discuss the social dimensions of natural disasters. The learning outcomes for this guest lecture include the ability to:

- Define disaster, social vulnerability, and the four phases of emergency management.
- Explain why natural disasters are considered social phenomena.
- Demonstrate how social factors influence people's vulnerability to disasters.
- Identify ways that university research can help inform our understanding of diverse disaster experiences across and within different groups.

In preparation for this guest lecture, you will be required to complete three tasks, which are described in the following pages.

1 CONVERGE TRAINING MODULES | ASSIGNMENT SLIDE

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Broader Ethical Considerations Resources

Here is a list of resources that can help support ethically sound disaster research. These resources includes of tools, instruments, and other relevant resources.

Tools

- [Best Practices for Ethical Post-Disaster Community Outreach and Engagement—CONVERGE Extreme Events Research Check Sheets Series](#)
- [Institutional Review Board \(IRB\) Checklist for Human Subjects Research—CONVERGE Extreme Events Research Check Sheets Series](#)
- [WHO's Ethics in Epidemics, Emergencies and Disasters: Research, Surveillance and Patient Care Training Manual](#)
- [R2HC Research Ethics Tool](#)

Instruments

- [MacArthur Competence Assessment Tool for Clinical Research](#)
- [Response to Research Participation Questionnaire](#)

Citizen Science Trainings

- [Quality Assurance Handbook and Guidance Documents for Citizen Science Projects](#)
- [Data Management Guide for Public Participation in Scientific Research](#)
- [CitizenScience.gov Manage Your Data](#)
- [Community PARTners Research Ethics Training](#)

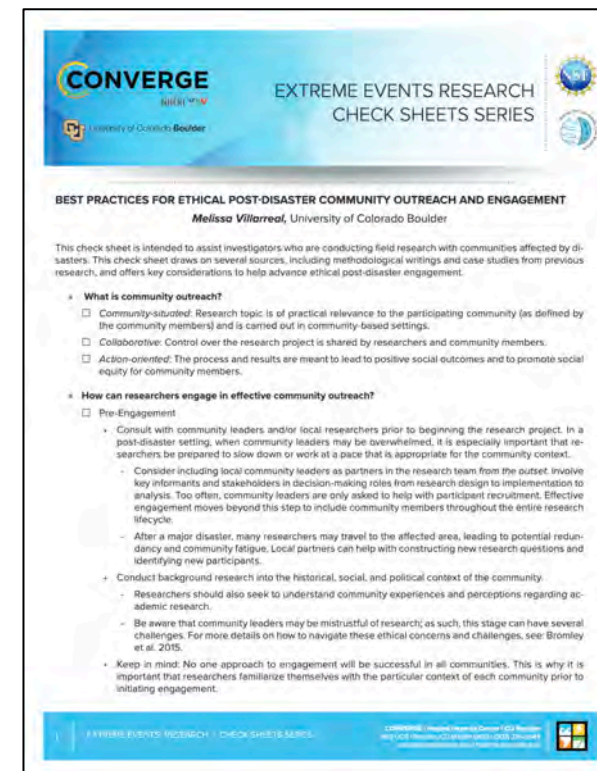
Other Web Resources

- [Ethical Issues to Consider in Developing, Evaluating, and Conducting Research Post-Disaster](#)
- [SAMHSA's Disaster Technical Assistance Center Supplemental Research Bulletin: Challenges and Considerations in Disaster Research](#)
- [Public Health Code of Ethics](#)
- [Adapted Summary of a Public Health Ethics Framework](#)
- [The Sylene Handbook](#)
- [ASPR TRACIE's Topic Collection: Ethics](#)
- [Research in Global Health Emergencies](#)
- [Disaster Health Core Curriculum-Core Competency 9: Ethical Principles](#)

Other CONVERGE Resources

INSTITUTE OF BEHAVIORAL SCIENCE
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NATURAL HAZARDS CENTER
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**EXTREME EVENTS RESEARCH
CHECK SHEETS SERIES**

BEST PRACTICES FOR ETHICAL POST-DISASTER COMMUNITY OUTREACH AND ENGAGEMENT
Melissa Villarreal, University of Colorado Boulder

This check sheet is intended to assist investigators who are conducting field research with communities affected by disasters. This check sheet draws on several sources, including methodological writings and case studies from previous research, and offers key considerations to help advance ethical post-disaster engagement.

• **What is community outreach?**

- ☐ **Community-situated:** Research topic is of practical relevance to the participating community (as defined by the community members) and is carried out in community-based settings.
- ☐ **Collaborative:** Control over the research project is shared by researchers and community members.
- ☐ **Action-oriented:** The process and results are meant to lead to positive social outcomes and to promote social equity for community members.

• **How can researchers engage in effective community outreach?**

- ☐ **Pre-Engagement**
 - Consult with community leaders and/or local researchers prior to beginning the research project. In a post-disaster setting, when community leaders may be overwhelmed, it is especially important that researchers be prepared to slow down or work at a pace that is appropriate for the community context.
 - Consider including local community leaders as partners in the research team from the outset. Involve key informants and stakeholders in decision-making roles from research design to implementation to analysis. Too often, community leaders are only asked to help with participant recruitment. Effective engagement moves beyond this step to include community members throughout the entire research lifecycle.
 - After a major disaster, many researchers may travel to the affected area, leading to potential redundancy and community fatigue. Local partners can help with constructing new research questions and identifying new participants.
- ☐ **Conduct background research into the historical, social, and political context of the community.**
 - Researchers should also seek to understand community experiences and perceptions regarding academic research.
- ☐ **Be aware that community leaders may be mistrustful of research;** as such, this stage can have several challenges. For more details on how to navigate these ethical concerns and challenges, see: Bromley et al. 2015.
- ☐ **Keep in mind:** No one approach to engagement will be successful in all communities. This is why it is important that researchers familiarize themselves with the particular context of each community prior to initiating engagement.

1 EXTREME EVENTS RESEARCH | CHECK SHEETS SERIES

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Social Science Extreme Events Research (SSEER) Network



Mission



SSEER is a **global network** of social scientists who study hazards and disasters. SSEER **identifies** researchers to develop the social science workforce and **coordinates** social science research teams in large-scale disasters to **advance scholarship** on the root causes and human consequences of extreme events.



EER Ecosystem



SSEER-V2.0

NSF Award #1841338 and #1745611

Social Science Extreme Events Research (SSEER)

This project will help to identify members of the social science hazards and disaster research community and their respective areas of expertise. This form takes approximately seven (7) minutes to complete. Thank you for your time, work, and interest in SSEER.

Please indicate if you agree to have your information included in the public listing and mapping effort for the Social Science Extreme Events Research (SSEER) platform.

- ☐ Yes
- ☐ No

Q1. Name:

First Name _____
Last Name _____

Q2. Job Title (if you have multiple professional titles, list them all here):

Q3. Department, Center, or Unit (if you are affiliated with multiple units, list them all here):

Q4. University, Institution, Organization, or Agency:

Q5. Email Address:

Q6. Work Address (this information may be used for geolocation purposes. Thus, please provide a physical/street address for your place of work or home. Avoid PO boxes and university building numbers, if possible):

Street _____

City _____

SSEER Membership Survey

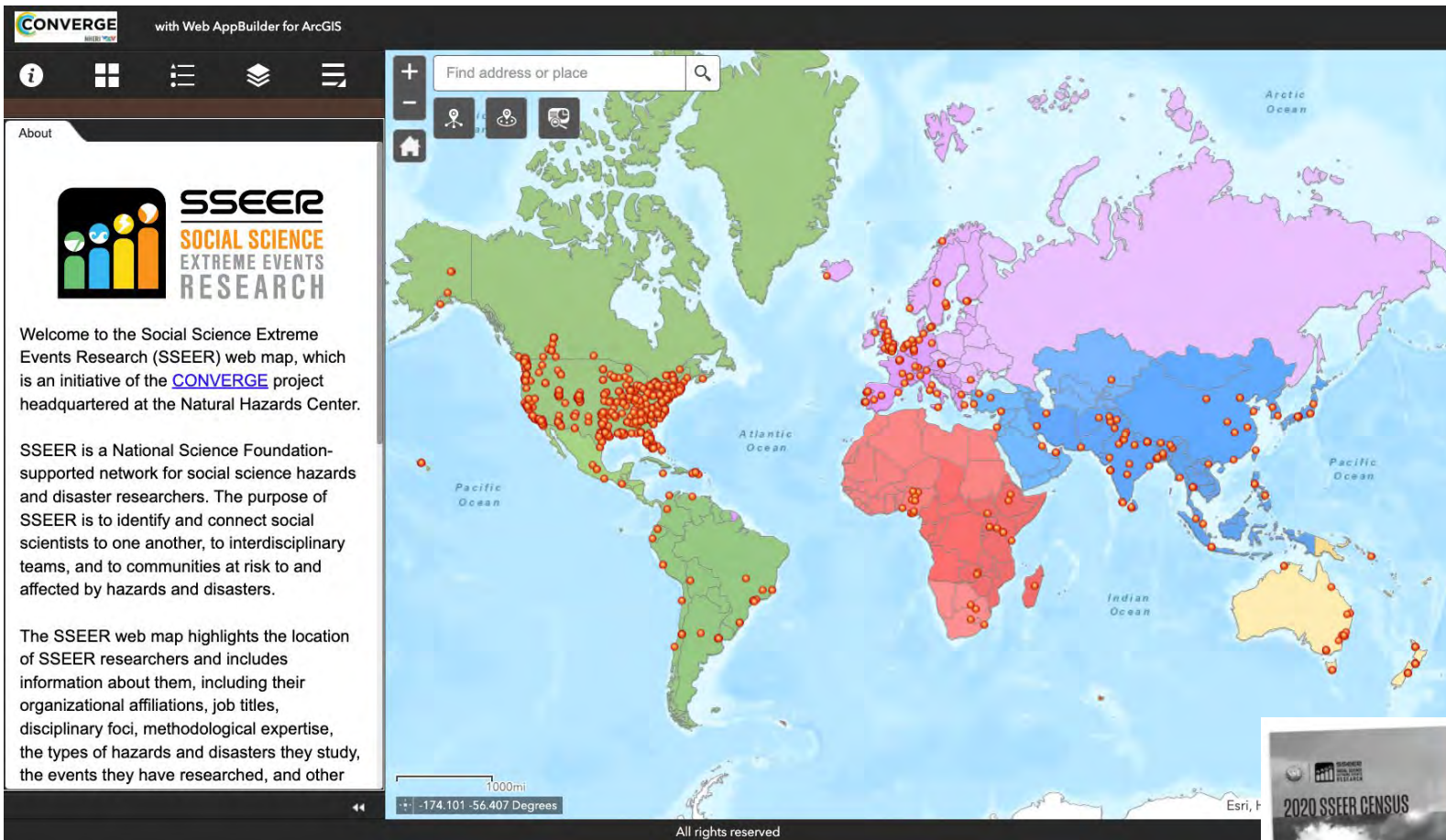
Peek, Lori, Mason Mathews, Emmanuelle Hines, Haorui Wu, Jessica Austin, and Heather Champeau. 2022. "2018 Social Science Extreme Events Research (SSEER) Network," in *Social Science Extreme Events Research (SSEER) Network Data, Survey Instrument, and Annual Census*. DesignSafe-CI. <https://doi.org/10.17603/ds2-2qc4-fh48>.



NHERI



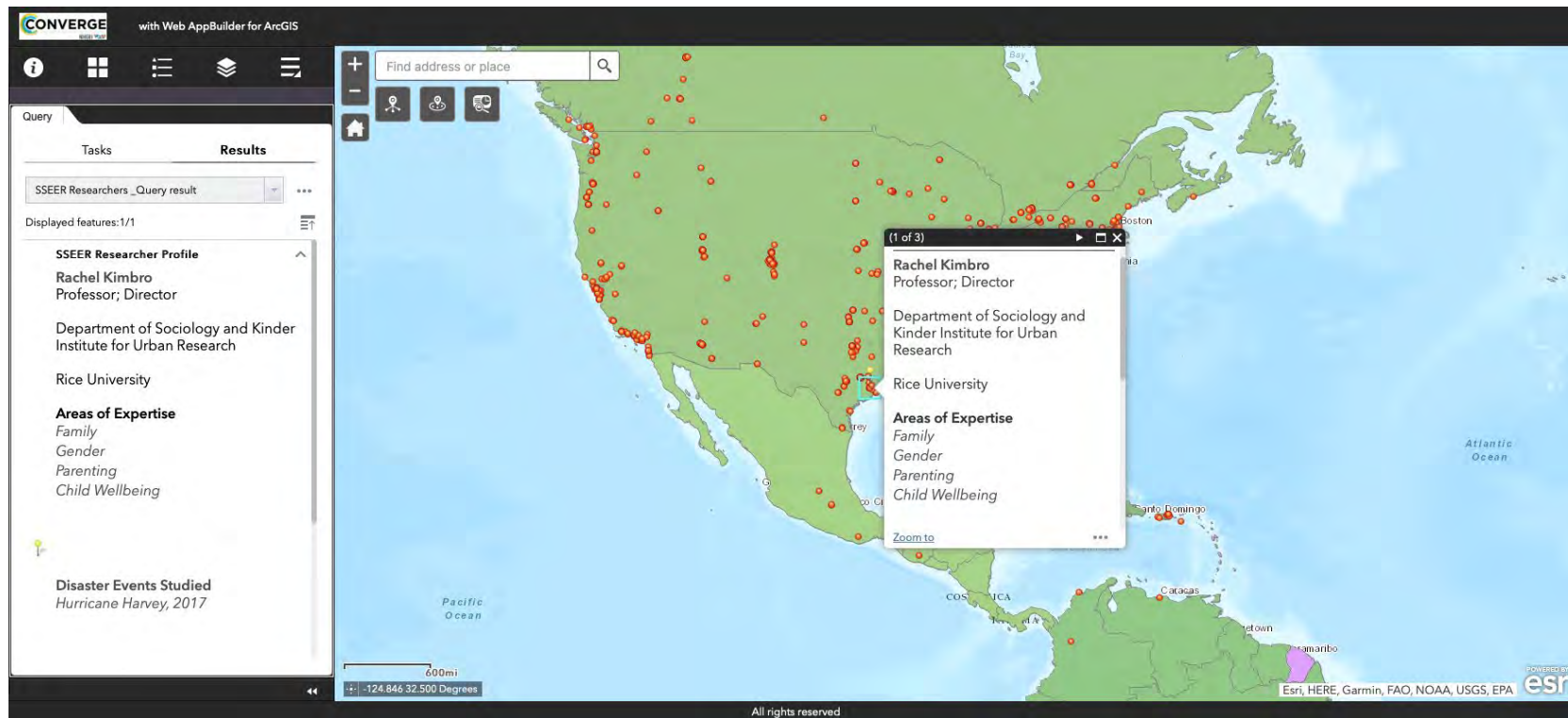
SSEER Annual Census



- **1,573 SSEER members** have joined across **5 UN regions**; searchable by **discipline, location, expertise on map**
- **Annual SSEER Census** analyzes the status of the **social science hazard and disaster research workforce**



Finding and Connecting with SSEER Researchers



SSEER Interactive Map:

- Geographic location
- Discipline
- Expertise
 - methods
 - disasters studied
 - topical expertise
- De-identified data are published and publicly available



Coordinating Social Scientists to Advance Knowledge



- **Virtual Forums:**
- 2023 Hawaii Wildfires
- 2023 Turkey-Syria Earthquakes
- 2021 Marshall Fire
- 2021 Tornado Outbreak
- 2019-20 Puerto Rico Earthquakes
- Social Science Led COVID-19 Working Groups involved 1,300 researchers in 90 groups; produced 90 published research agendas



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THANK YOU



Questions? Contact:
Lori Peek
Lori.Peek@colorado.edu

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