

# Resources for Ethical Earthquake Research



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Natural Hazards Center



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# Ethics in the Hazards and Disaster Field

- ***Ethics*** broadly refers to a set of **principles, norms, and standards** that guide the conduct of reconnaissance and longer-term research



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We hold a special **responsibility** to ensure that our actions are guided by an underlying set of **ethical principles** that protect the **dignity, rights, and welfare** of people

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# CONVERGE

- CONVERGE is a National Hazards Engineering Research Infrastructure (NHERI) facility dedicated to advancing the **ethical conduct** and scientific rigor of hazards and disaster research
- CONVERGE offers free **resources** to help train a diverse **next-generation** of the **interdisciplinary hazards and disaster workforce**



[converge.colorado.edu](https://converge.colorado.edu)



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# 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, our CONVERGE team and our partners have:
- Released **12 Training Modules**
- **9,430** registrants
- **10,093** module completions

[converge.colorado.edu/resources/training-modules/](https://converge.colorado.edu/resources/training-modules/)

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





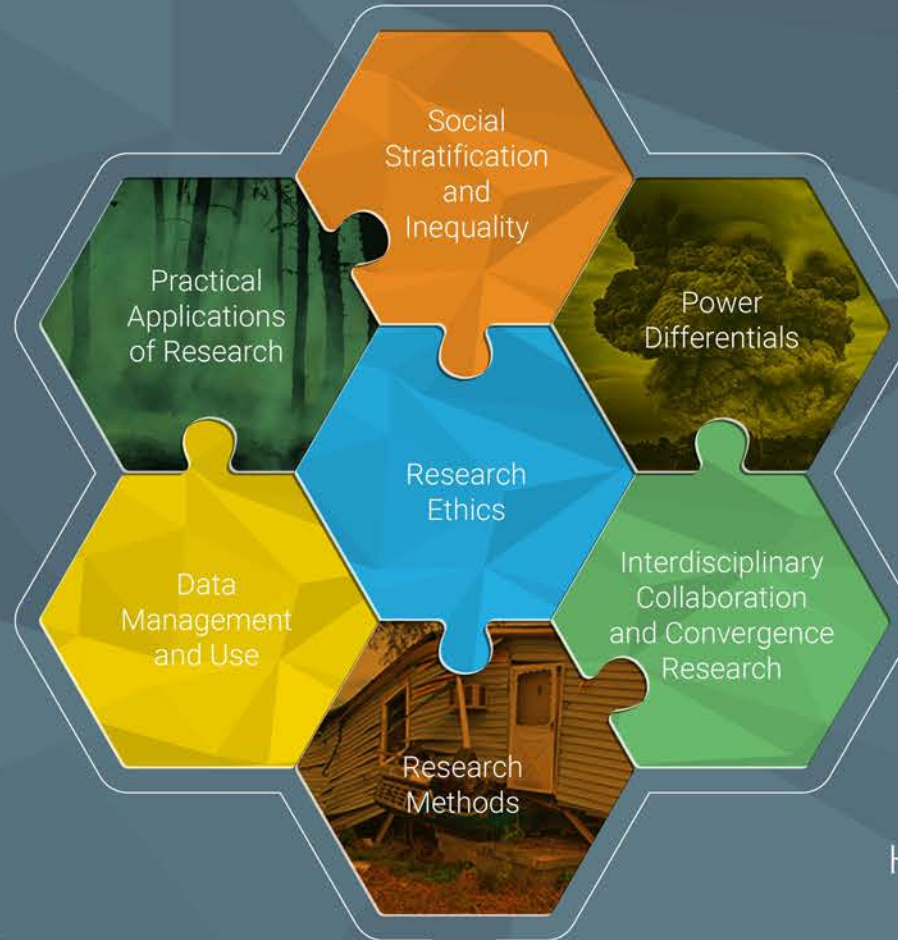
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## Training Modules

### Foundational Training Module Topics

- Institutional Review Board (IRB) Procedures
- 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
- Indigenous Sovereignty
- Positionality
- Reciprocity
- Understanding and Ending Gender-Based Violence in Fieldwork
- Public Health Implications of Hazards and Disaster Research



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# Available Training Modules

- While **research ethics** is a core theme of all 12 Training Modules, it is particularly relevant to the content of these 7 modules:

[converge.colorado.edu/resources/training-modules/](https://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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# 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.<sup>1</sup>*

<sup>1</sup>Adams, 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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# Collecting and Sharing Perishable Data

The **context** of perishable data collection has unique **ethical challenges** for hazards and 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



# Institutional Review Board Procedures

- The IRB is a committee responsible for reviewing the methods of proposed research involving human subjects
- It ensures the protection of human subjects and their rights as participants in potentially harmful research
- The IRB outlines three main principles of ethical research:
  - Respect for persons
  - Beneficence
  - Justice



# Institutional Review Board Procedures

## *IRB Challenges for Hazards and Disaster Research*

- When collecting perishable hazards and disaster data, there can be IRB challenges associated with:
  - Administrative delays
  - Gathering letters of support during a time of crisis
  - Varying IRB standards across different regions and organizations



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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



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# Broader Ethical Considerations

## *Broader Ethical Challenges for Hazards and Disaster Research*

- Informed consent
- Participant burden
- Confidentiality and privacy
- Compensating participants
- Interpersonal, team-based, and organizational ethical dilemmas
- Working in international and cross-cultural settings



Evans, C.M., Adams, R. M., & Peek, L. (2024). Ethical considerations for hazards and disaster research. Forthcoming in the edited volume *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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# Cultural Competence

- Familiarizing yourself cultural context of the research site can help ensure that your research design and methods are not unintentionally causing harm
- Ethical research should be driven by the needs of local populations
- Working with local partners can help **bridge cross-cultural boundaries, enhance research capacity and feasibility, and empower members of the disaster-affected community**



Wu, H., Peek, L., Mathews, M. C., & Mattson, N. (2022). Cultural competence for hazards and disaster researchers: Framework and training module. *Natural Hazards Review*, 23(1), 06021005. [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000536](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000536)



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# Reciprocity in Research

- Reciprocity in research involves an ongoing practice of reflection, relationship-building, and exchange
- Researchers are **ethically obligated** 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**





# Social Vulnerability and Disasters

- There are certain populations that are more susceptible to the negative impacts of hazards and disasters
- 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
- Research that focuses on these populations can inform more inclusive disaster risk reduction



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*.



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# An Ethical Toolkit for Addressing Dilemmas

- Science and engineering help us to understand and characterize what *is* in the world
- An ethical toolkit can help guide what we *ought* to do in light of what we know or have experienced



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# An Ethical Toolkit for Addressing Dilemmas

- **Beneficence:** *Maximizing benefits of participation in research.*
- **Fidelity:** *Maintaining fidelity to an implicit or explicit promise.*
- **Reparation:** *Making amends for a previous wrongful act.*
- **Gratitude:** *Expressing gratitude for participation in research.*
- **Justice:** *Treating participants fairly and equitably.*
- **Non-Maleficence:** *Minimizing harm from participation in research.*
- **Self-Improvement:** *Improving one's own condition in respect of virtue or of intelligence.<sup>1</sup>*



<sup>1</sup>Browne, K. E., & Peek, L. (2014). Beyond the IRB: An ethical toolkit for long-term disaster research. *International Journal of Mass Emergencies & Disasters*, 32(1), 82-120.  
<https://doi.org/10.1177/028072701403200105>





# Additional CONVERGE Resources



# Additional CONVERGE Resources



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](mailto: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

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CONVERGE TRAINING MODULES | ANNOTATED BIBLIOGRAPHY SERIES

CONVERGE | National Hazards Center | CU Boulder  
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CONVERGE TRAINING MODULES  
SAMPLE 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 Viña, PhD student at North Carolina State University in the Department of Parks, Recreation, and Tourism Management  
**Email:** [olivia@ncsu.edu](mailto:olivia@ncsu.edu)  
**Session:** Fall 2019  
**Due:** October 29, 2019

**SOCIAL DIMENSIONS OF NATURAL HAZARDS TRAINING MODULE ASSIGNMENT**

**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.

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CONVERGE TRAINING MODULES  
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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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.

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EXTREME EVENTS RESEARCH | CHECK SHEETS SERIES

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Resources for Ethical Earthquake Research



# THANK YOU



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