

12<sup>th</sup> Annual International Science of Team Science (SciTS) Conference

*Science of Team Science and the Human Condition*

June 7, 2021

# Just Reconnaissance: A Framework for Convergence Disaster Research

Lori Peek, Ph.D.

Professor, Department of Sociology and Director, Natural Hazards Center

Principal Investigator, CONVERGE, SSEER, and ISEEER

University of Colorado Boulder

[converge.colorado.edu](http://converge.colorado.edu) | [hazards.colorado.edu](http://hazards.colorado.edu)



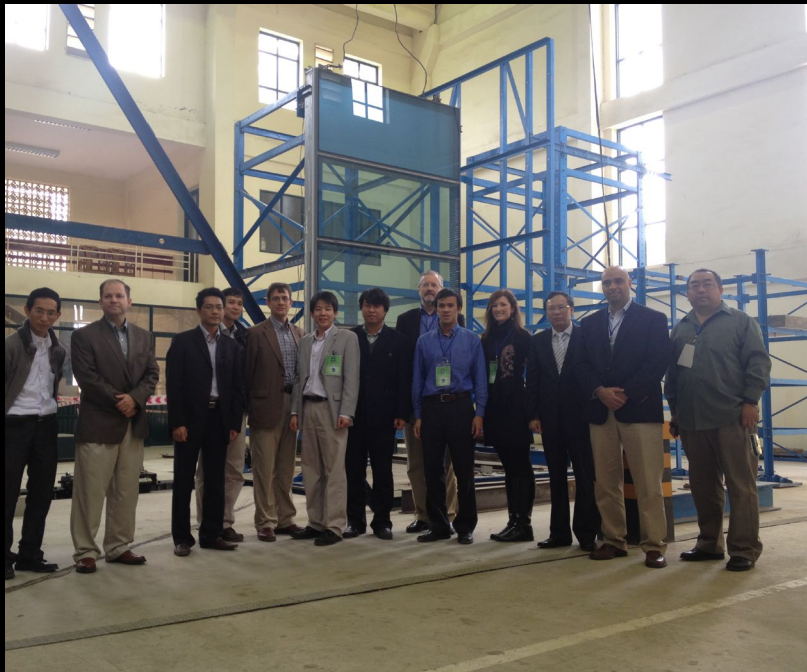
University of Colorado **Boulder**













# **Part I. A Brief History of the Importance of *Time*, *Teams*, and *Multidisciplinarity* in Disaster Research**







## 1940s-1950s

Teams of **social scientists**, funded by the U.S. military, began to study disasters to understand how the U.S. civilian population would respond to conditions of extreme duress





## 1940s-1950s

Teams of social scientists, funded by the U.S. military, began to study disasters to understand how the U.S. civilian population would respond to conditions of extreme duress

## 1960s

Teams of **engineers**, **geologists**, and **seismologists** began to conduct team-based reconnaissance studies to understand hazards characteristics and performance of the built environment



## 1940s-1950s

Teams of social scientists, funded by the U.S. military, began to study disasters to understand how the U.S. civilian population would respond to conditions of extreme duress

## 1960s

Teams of engineers, geologists, and seismologists began to conduct team-based reconnaissance studies to understand hazards characteristics and performance of the built environment

## 1970s onward

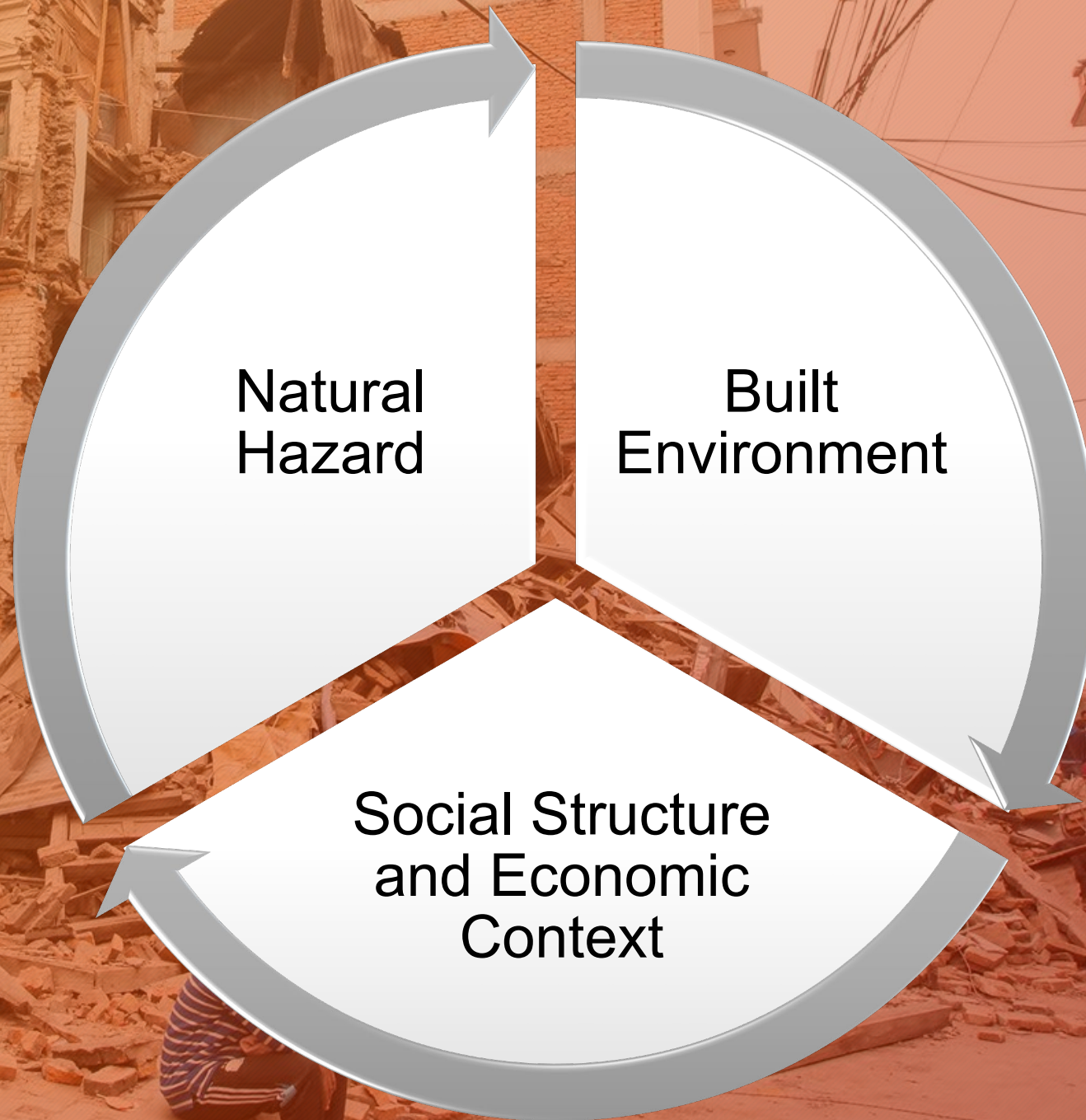
Teams of social scientists, earth scientists, and engineers work together across more **expansive disciplinary divides** to study response, recovery, and mitigation



# Disasters as a “forcing function” for rapid team formation













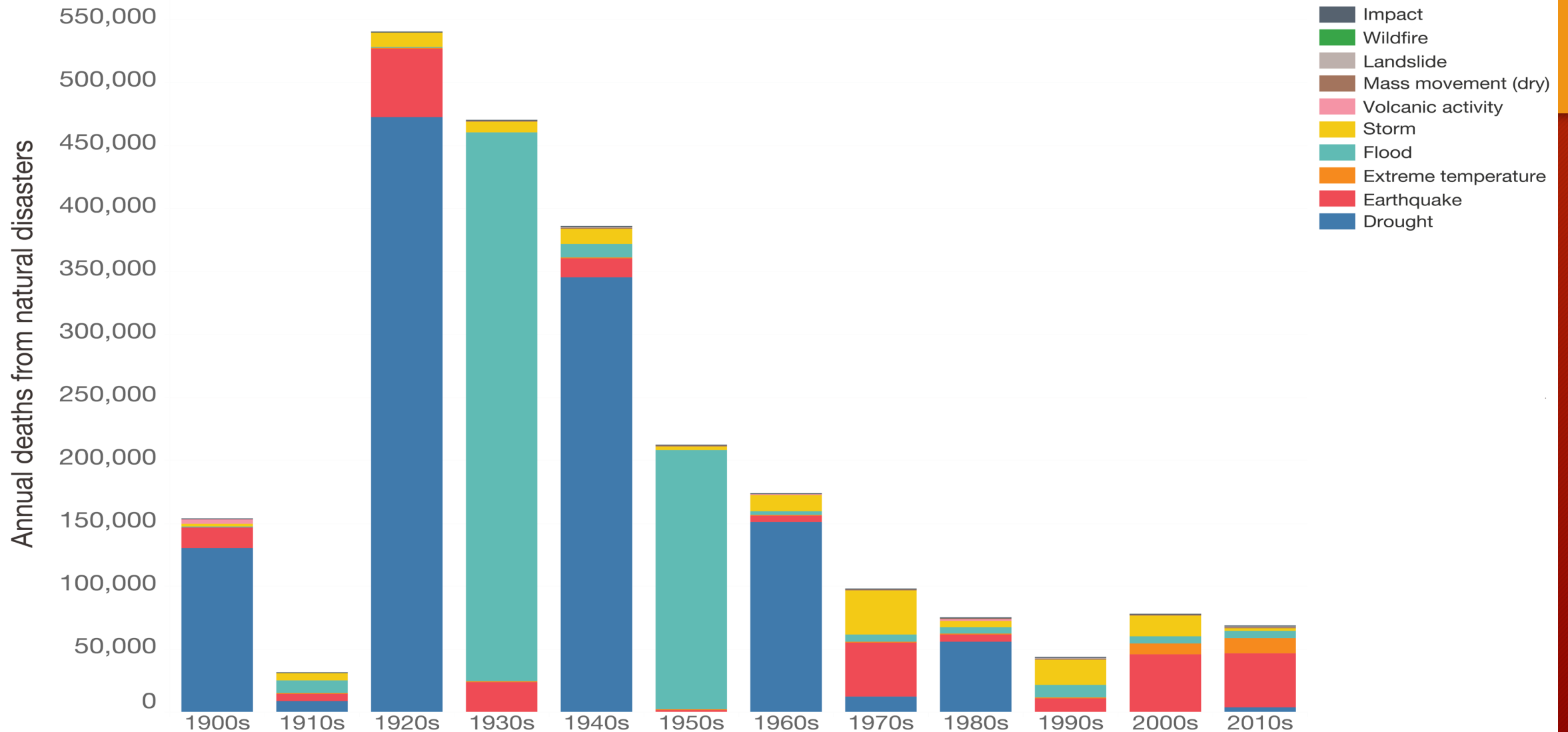




# Global annual deaths from natural disasters, by decade

Absolute number of global deaths from natural disasters, per year.

This is given as the annual average per decade (by decade 1900s to 2000s; and then six years from 2010-2015).





## **Part II. Critiques of Rapid Response Team- Based Disaster Research**



## Post-disaster research: Is there gold worth the rush?

**Authors:**  
JC Gaillard<sup>1</sup>  
Christopher Gomez<sup>2</sup>

**Affiliations:**  
<sup>1</sup>School of Environment,  
University of Auckland,  
New Zealand

<sup>2</sup>Department of Geography,  
University of Canterbury,  
New Zealand

**Correspondence to:**  
JC Gaillard

**Email:**  
jc.gaillard@auckland.ac.nz

**Postal address:**  
Private Bag 32019, Auckland  
1142, New Zealand

**Dates:**  
Received: 03 Feb 2014  
Accepted: 11 Feb. 2015  
Published: 30 Apr. 2015

**How to cite this article:**  
Gaillard, J.C. & Gomez, C.,  
2015, 'Post-disaster research:  
Is there gold worth the  
rush?', *Jamba: Journal of  
Disaster Risk Studies* 7(1),  
Art. #120, 6 pages, [http://  
dx.doi.org/10.4102/jamba.  
v7i1.120](http://dx.doi.org/10.4102/jamba.v7i1.120)

**Note:**  
Authors are former gold  
rushers.

**Copyright:**  
© 2015. The Authors.  
Licensee: AOSIS  
OpenJournals. This work is  
licensed under the Creative  
Commons Attribution  
License.



**Read online:**  
Scan this QR  
code with your  
smart phone or  
mobile device  
to read online.

### Introduction

Dynes, Haas and Quarantelli (1967) once set the agenda for disaster research as follows:

high priority is given to those disasters which are quick and unexpected, which affect more than one industrial community, where there is heavy property damage, where the number of casualties exceeds 100 and which elicits the participation of national organizations during the emergency period. (p. 46)

Almost 50 years afterwards, major disasters continue to stir the prime interest of researchers, who often immediately rush to the affected areas to conduct studies of various kinds, from hazards observations to social surveys on the impact of the events and post-traumatic stress disorder research. Stallings (2007:56) actually suggests that 'arriving on site as soon as possible is generally seen by field researchers as key to the success of their work'. Recently, this 'research gold rush' has been observed in the regions hit by the 2004 Indian Ocean tsunami, Hurricane Katrina in the United States of America (USA) in 2005, the 2008 earthquake in China, the 2010 earthquake in Haiti, the 2010–2011 Canterbury earthquakes in New Zealand and the 2011 earthquake and tsunami in Japan.

A quick analysis of academic peer-reviewed articles related to the foregoing events (which have stimulated the highest academic attention over the past 15 years) available from Scopus shows that the number of publications peaked immediately or a year after the disasters (Figure 1). This is particularly evident for Hurricane Katrina, which has been the focus of more than 3500 peer-reviewed publications, including 382 before the end of 2005.

Of course, not all these quick post-disaster publications have required field work and immediate field studies, but many have. Although most researchers engage in such research for laudable reasons, little reflection has been given to the implications and ethics of such practice. The present commentary aims at opening up a debate around these.

### Temptation and opportunity

Rushing to affected areas immediately after the event is very tempting for researchers interested in disasters. What White and Haas (1975) called 'post-audits' have indeed long been deemed essential for better understanding the impact of natural hazards as well as people's response to the events, and, in consequence, for enhancing policies for disaster risk reduction (DRR) (e.g. Killian 1956; Mileti 1987; Stallings 2002, 2007). Quarantelli (1997) provides two basic reasons why it is allegedly so important to get to the scene as soon as possible after the event:

first, observations can be made and documents can be collected that cannot be obtained through later interviewing. The social barriers that normally exist to restrict access to high level officials and key organizations, simply to not exist. Second, being on the scene early insures a high degree of access and cooperation. Victims are typically candid, cooperative and willing to talk in ways far more difficult to get later. (p. 57)

Stallings (2007:61) further adds that eventually 'respondents' personal recall that may be skewed by repeated retelling of their stories to a succession of interviewers'. Researchers who rush to disaster-affected areas thus justify their approach by the perishable nature of the data they need to collect (Bourque, Shoaf & Nguyen 1997).

Although the collection of perishable data is often essential, both for the sake of the local affected and the international community, the multiplication of initiatives from different countries and research groups sends a very large number of individuals to the impacted areas. For example, in the immediate aftermath of the 2004 tsunami, teams of physical and social scientists from France, Japan, Russia and the USA – to cite just a few – went through a data collection exercise in Indonesia with little or no coordination at first (e.g. Borrero 2005; Kawata *et al.* 2005; Iemura

### Setting the agenda in research

## Comment



A collapsed building in the city of Palu in Sulawesi, Indonesia, after a magnitude-7.5 earthquake hit the region in September 2018.

## Disaster-zone research needs a code of conduct

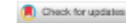
JC Gaillard & Lori Pook

**Study the effects of earthquakes, floods and other natural hazards with sensitivity to ethical dilemmas and power imbalances.**

A magnitude-7.0 earthquake rocked Anchorage, Alaska, in late November 2018. Roads buckled and chimneys tumbled from rooftops. Business operations were disrupted. Schools were damaged across the district. This was the largest earthquake to shake the region in a generation, and there was much to learn. What was the state of the infrastructure? Might further quakes occur? How did people respond? Teams of scientists and engineers from across the United States mobilized to conduct field reconnaissance. In partnership with local researchers and practitioners, these efforts were coordinated through the clearing house set up by the Earthquake Engineering Research

Institute in Oakland, California, which provided daily in-person and online briefings, as well as a web portal for sharing data.

But researchers are not always so welcome in disaster zones. After the deadly Indian Ocean earthquake and tsunami on 26 December 2004, hundreds of academics from countries including Japan, Russia, France and the United States rushed to the region to collect perishable data. This influx of foreign scientists angered and fatigued some locals; many declined researchers' requests for interviews. The former governor of Aceh province, Indonesia, where more than 128,000 people died, described foreign researchers as 'guerrillas applying hit-and-run tactics'.



### Article

## Ethical Considerations for Postdisaster Fieldwork and Data Collection in the Caribbean

American Behavioral Scientist  
2020, Vol. 64(8) 1129–1144  
© 2020 SAGE Publications  
Article reuse guidelines:  
[sagepub.com/journalsPermissions](https://sagepub.com/journalsPermissions)  
DOI: 10.1177/0002764220938113  
[journals.sagepub.com/home/abs](https://journals.sagepub.com/home/abs)



Hans M. Louis-Charles<sup>1</sup>, Rosalyn Howard<sup>2</sup>,  
Lionel Remy<sup>3</sup>, Farah Nibbs<sup>4</sup>, and Grace Turner<sup>5</sup>

### Abstract

The postdisaster environment presents a multitude of ethical and logistical challenges for researchers interested in gathering timely and unpreserved data. Due to the unavailability of secondary data in the immediate aftermath of disasters, postdisaster researchers have become dependent on qualitative methods that involve engaging with disaster survivors as research participants. This is a common interaction in the Caribbean due to the region's high occurrence of disasters and human participant engagement by external researchers during the postdisaster phase. However, due to escalating unethical practices since the 2010 Haiti earthquake, Caribbean nations are beginning the process of censuring unapproved postdisaster fieldwork by external researchers. In this study, the authors approach these ethical considerations through a justice lens to propose a checklist for postdisaster researchers interested in ethical fieldwork and justice for their research participants. Correspondence with Caribbean emergency managers confirms the negative perception toward external researchers and the trend of enacting protocols that stop unvetted community access following disasters. However, these local agencies acknowledge the benefits of ethical postdisaster research and are open to serving as research coordinating centers. Such coordinating centers would harness local capabilities and lower the likelihood of the duplication of research topics and the overburdening of survivors as research participants.

<sup>1</sup>Virginia Commonwealth University, Richmond, VA, USA

<sup>2</sup>University of Central Florida, Orlando, FL, USA

<sup>3</sup>Behavioural Management Solutions Limited, Chaguanas, Trinidad and Tobago

<sup>4</sup>University of Delaware, Newark, DE, USA

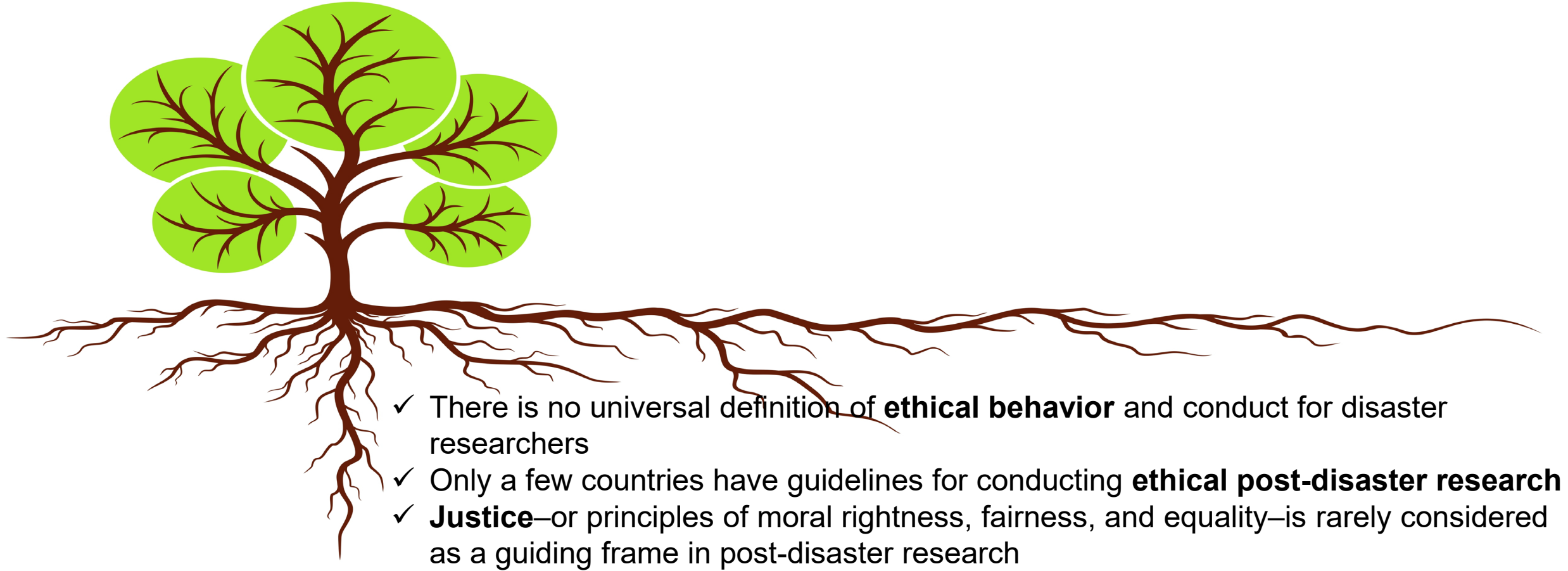
<sup>5</sup>College of William & Mary, Williamsburg, VA, USA

### Corresponding Author:

Hans M. Louis-Charles, Virginia Commonwealth University, 923 West Franklin Street, Richmond, VA 23284-2512, USA  
Email: [louischarh@vcu.edu](mailto:louischarh@vcu.edu)



# Critiques of Rapid Response Research







1. Lack of coordination among researchers



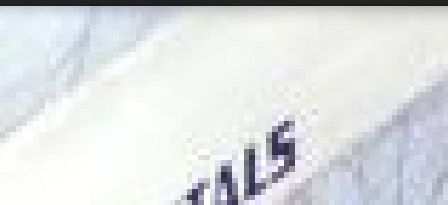


## 2. Added burden on affected people, local researchers, and public officials





3. Urgency of the work can lead to a lack of community buy-in and conflicts over appropriate “solutions” to pressing problems





# Portland's Old Brick Buildings Will Kill You

But As the City Ponders New Safety Standards, a Group of Property Owners is Fighting Back—and Winning

by [Dirk VanderHart](#)





# **NOTICE**

**THIS IS AN UNREINFORCED  
MASONRY BUILDING.  
UNREINFORCED MASONRY  
BUILDINGS MAY BE UNSAFE  
IN THE EVENT OF A MAJOR  
EARTHQUAKE.**

# **EARTHQUAKE WARNING**

**THIS IS AN UNREINFORCED  
MASONRY BUILDING.  
UNREINFORCED MASONRY  
BUILDINGS MAY BE UNSAFE  
IN THE EVENT OF A MAJOR  
EARTHQUAKE.**

**THIS IS AN UNREINFORCED  
MASONRY BUILDING.  
UNREINFORCED MASONRY  
BUILDINGS MAY BE UNSAFE  
IN THE EVENT OF A MAJOR  
EARTHQUAKE.**







## Part III. Just Reconnaissance: Centering *Justice*, *Ethics*, and *Convergence* in Disaster Research



# Traditional Approach to Research

Outcomes



Research  
Agenda

The diagram illustrates the traditional research approach. It features a large orange circle on the right side of the slide, containing the text "Research Agenda" in white. A black arrow points from the left edge of this circle towards the word "Outcomes" on the left side of the slide. The background is a solid orange color, and there is a yellow rectangular shape in the top right corner.

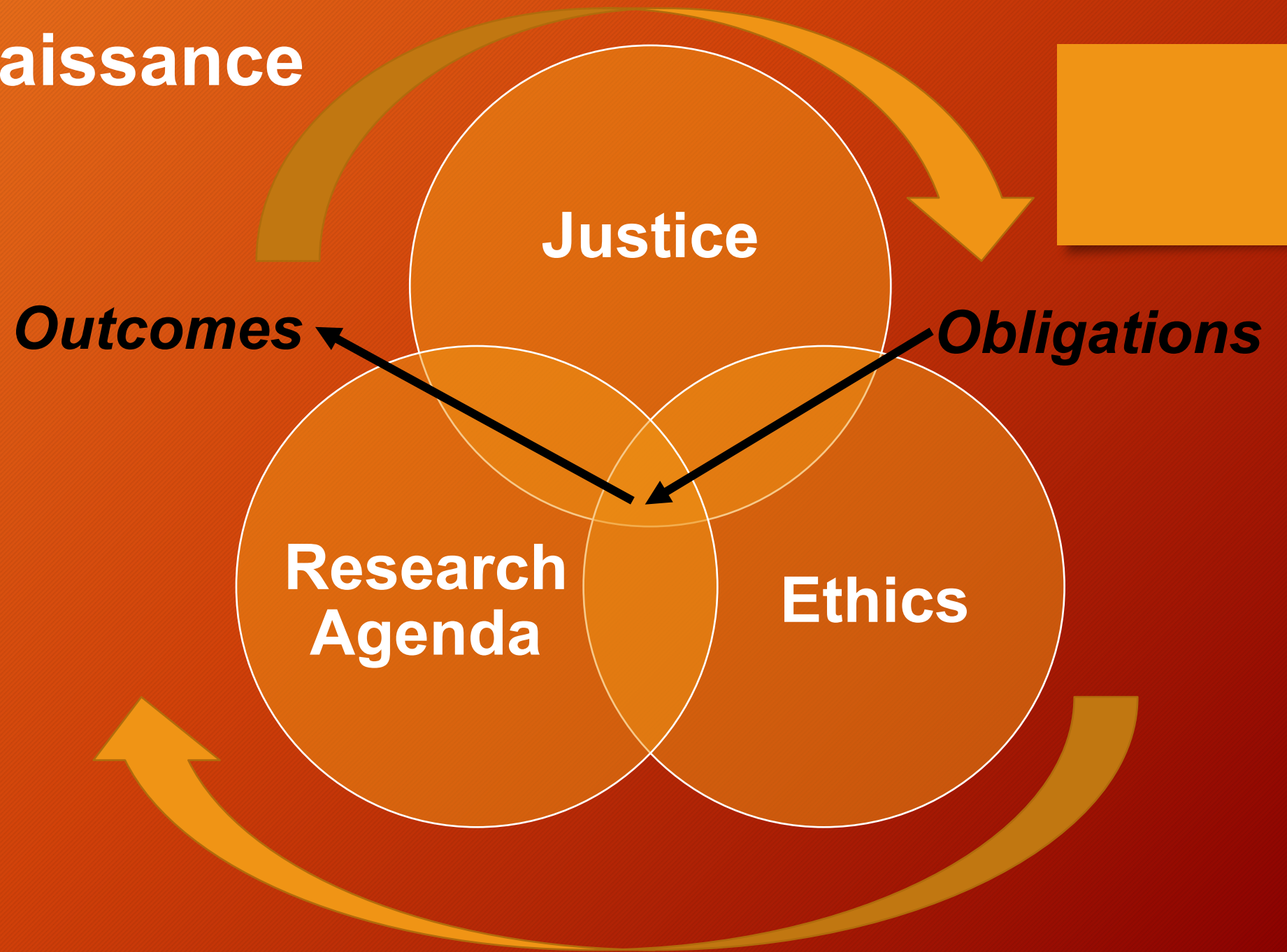


# Just Reconnaissance





# Just Reconnaissance





# Just Reconnaissance

*verb and a noun*





# Just Reconnaissance

*verb*

An approach to quick response disaster research that centers justice, ethics, and the research agenda, giving each equal weight. Researchers who engage in just reconnaissance begin with considerations of what is **just** and of their **ethical obligations** to participants, collaborators, and locally-affected researchers and responders. As the **research** progresses, research questions, data collection activities, data analysis, and the presentation of findings and proposed outcomes are all shaped by ongoing considerations of justice and research ethics.





# Just Reconnaissance

*verb and a noun*






# Just Reconnaissance

*noun*

A just reconnaissance researcher engages in ethical, rigorous, and coordinated convergence research that is designed to advance science and reduce pre-existing inequalities and injustices that are at the root of most disaster losses.





A large iceberg floats in a blue ocean under a cloudy sky. The visible tip of the iceberg is on the left side of the frame. The water surface is calm with gentle ripples. The sky is filled with soft, white clouds. The overall scene is serene but carries a metaphorical weight.

*What is our goal?*

Science to reduce disaster losses

*What is our goal?*

Science to reduce injustices and inequities that turn natural hazards into human catastrophes

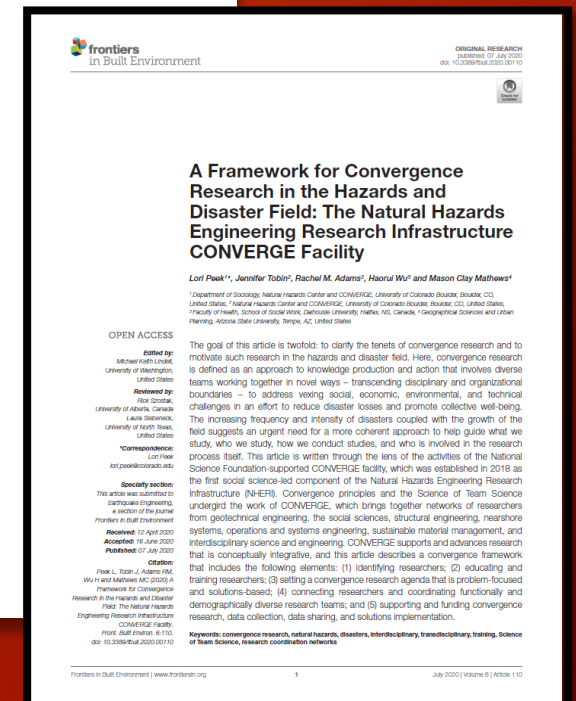
- Structural racism, patriarchy, economic inequality
- Environmental injustice
- Natural resource extraction
- Political corruption
- Poor land use planning
- .....



## Part IV. CONVERGE



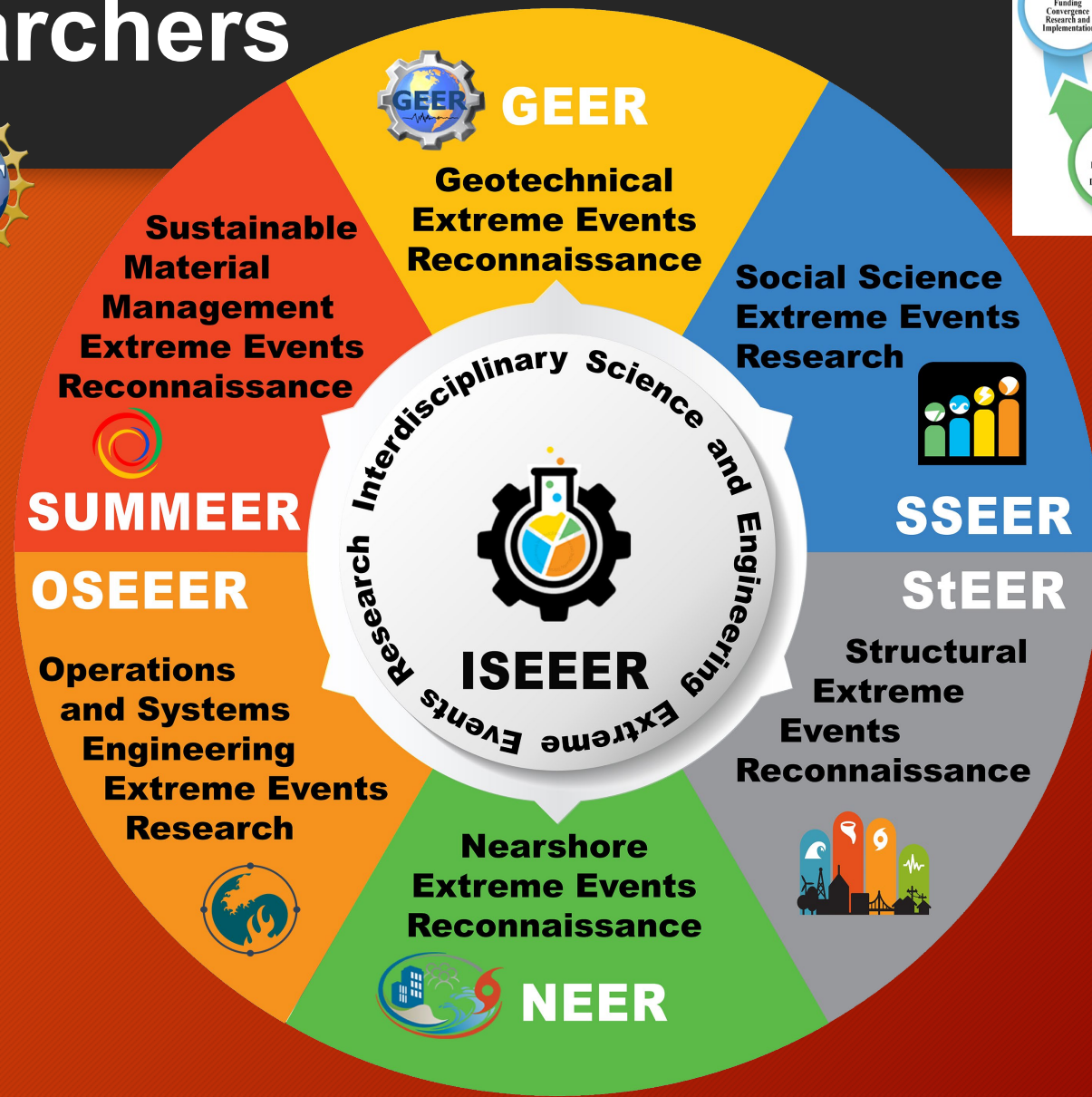
# A Framework and Support for Ethical, Rigorous, and Coordinated Convergence Research



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



# 1. Identifying Researchers





# 1. Identifying Researchers



**CONVERGE**

ABOUT RESEARCH NETWORKS RESOURCES DATA COMMUNICATIONS CONTACT

with Web AppBuilder for ArcGIS

**SSEER**  
SOCIAL SCIENCE  
EXTREME EVENTS  
RESEARCH

Welcome to the Social Science Extreme Events Research (SSEER) web map, which is an initiative of the [CONVERGE](#) project headquartered at the Natural Hazards Center.

SSEER is a National Science Foundation-supported 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 information.

Map of SSEER researchers. Map created by Mason Mathews, Jeffrey Gunderson, Lori Peek, and Jessica Austin. Source: CONVERGE, Natural Hazards Center, 2020.

University of Colorado Boulder

Esri, HERE, FAO, NOAA



## 2. Educating and Training Researchers





## 2. Educating and Training Researchers

Completed

### Cultural Competence in Hazards and Disaster Research

This Training Module focuses on culturally competent research and offers guidance on how hazards and disaster researchers can build cultural competence.

[VIEW MODULE](#)

100% COMPLETE

Completed

### Disaster Mental Health

This Training Module focuses on mental health outcomes associated with disasters, with a particular emphasis on risk factors over time that make certain populations vulnerable to poor disaster mental health outcomes.

[VIEW MODULE](#)

100% COMPLETE

Completed

### Social Vulnerability and Disasters

This Training Module focuses on social vulnerability to hazards and disasters, with an emphasis on population groups that have been identified in the literature as especially at risk to the adverse effects of extreme events.

[VIEW MODULE](#)

100% COMPLETE

CONVERGE Training Modules

The screenshot displays the CONVERGE website's 'RESOURCES' section. It features a grid of eight research check sheets, each with a title and a corresponding image. The check sheets are: 'PREPARING TO CONDUCT EXTREME EVENTS RESEARCH', 'IRB AND ETHICAL CONSIDERATIONS', 'SOCIAL SCIENCE METHODS AND APPROACHES', 'TRAINING, MENTORING, AND BUILDING TEAMS', 'COLLECTING DATA AND CONDUCTING FIELDWORK', 'DATA MANAGEMENT AND DATA USE', 'DATA ANALYSIS AND DATA PUBLICATION', and 'SHARING AND COMMUNICATING RESULTS'. The website header includes navigation links for ABOUT, RESEARCH NETWORKS, RESOURCES, DATA, COMMUNICATIONS, and CONTACT.

Extreme Events Research Check Sheets

The screenshot displays the CONVERGE website's 'RESOURCES' section, specifically focusing on COVID-19. It features a grid of seven resources, each with a title and a corresponding image. The resources are: 'REGISTRY FOR COVID-19 PUBLIC HEALTH AND SOCIAL SCIENCES RESEARCH', 'COVID-19 RESEARCH WORKING GROUPS', 'COVID-19 VIRTUAL FORUMS', 'COVID-19 QUESTIONS', 'COVID-19 QUICK RESPONSE RESEARCH', 'COVID-19 RAPID AWARDS', and 'COVID-19 INFORMATION PAGES'. The website header includes navigation links for ABOUT, RESEARCH NETWORKS, RESOURCES, DATA, COMMUNICATIONS, and CONTACT.

Webinars, Workshops, and Event-Specific Resources



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



# 3. Setting a Research Agenda





# COVID-19 Working Groups





# COVID-19 Working Groups

- Population Groups, Organizations, and Social Institutions
- Issues, Impacts, and Recovery
- Compound Hazards and Cascading Disasters
- Research Networks, Methods, and Ethics

The screenshot shows the CONVERGE website with a navigation bar including links for ABOUT, RESEARCH NETWORKS, RESOURCES, DATA, COMMUNICATIONS, and CONTACT. The main heading is "COVID-19 Working Groups for Public Health and Social Sciences Research". Below this, a paragraph states that 90 COVID-19 Working Groups have been funded, focusing on various issues and advancements. Another paragraph explains that the groups are organized into four focal areas of study: 1) population groups, organizations, and social institutions; 2) issues, impacts, and recovery; 3) compound hazards and cascading disasters; and 4) research networks, methods, and ethics. The page features four large image tiles corresponding to these focal areas: a crowd of people for population groups, a world map for issues and impacts, a hand knocking over dominoes for compound hazards, and a group of people brainstorming for research networks. Each tile has a caption below it. The footer includes the University of Colorado Boulder logo and a URL.

**CONVERGE**

ABOUT RESEARCH NETWORKS RESOURCES DATA COMMUNICATIONS CONTACT

## COVID-19 Working Groups for Public Health and Social Sciences Research

Due to the outpouring of interest from the research community and our mission to advance convergence research for the benefit of humanity, CONVERGE and the Social Science Extreme Events Research (SSEER) Network have funded 90 COVID-19 Working Groups for Public Health and Social Sciences Research. The Working Groups focus on a variety of issues and advancements in methods, ethics, and empirical topics related to the COVID-19 pandemic. Each group is led by a public health researcher or a researcher in the social, behavioral, or economic sciences, and includes researchers from at least three different disciplines to encourage convergent approaches.

The funded Working Groups are organized according to four focal areas of study: 1) population groups, organizations, and social institutions; 2) issues, impacts, and recovery; 3) compound hazards and cascading disasters; and 4) research networks, methods, and ethics. Many of the groups focus on cross-cutting issues. All groups submitted a Research Agenda Setting Paper which is available in the box below as well as on each Working Group's specific webpage.

POPULATION GROUPS, ORGANIZATIONS, AND SOCIAL INSTITUTIONS

ISSUES, IMPACTS, AND RECOVERY

COMPOUND HAZARDS AND CASCADING DISASTERS

RESEARCH NETWORKS, METHODS, AND ETHICS

University of Colorado Boulder  
<https://converge.colorado.edu/resources/covid-19/working-groups/population-groups-organizations-social-institutions>

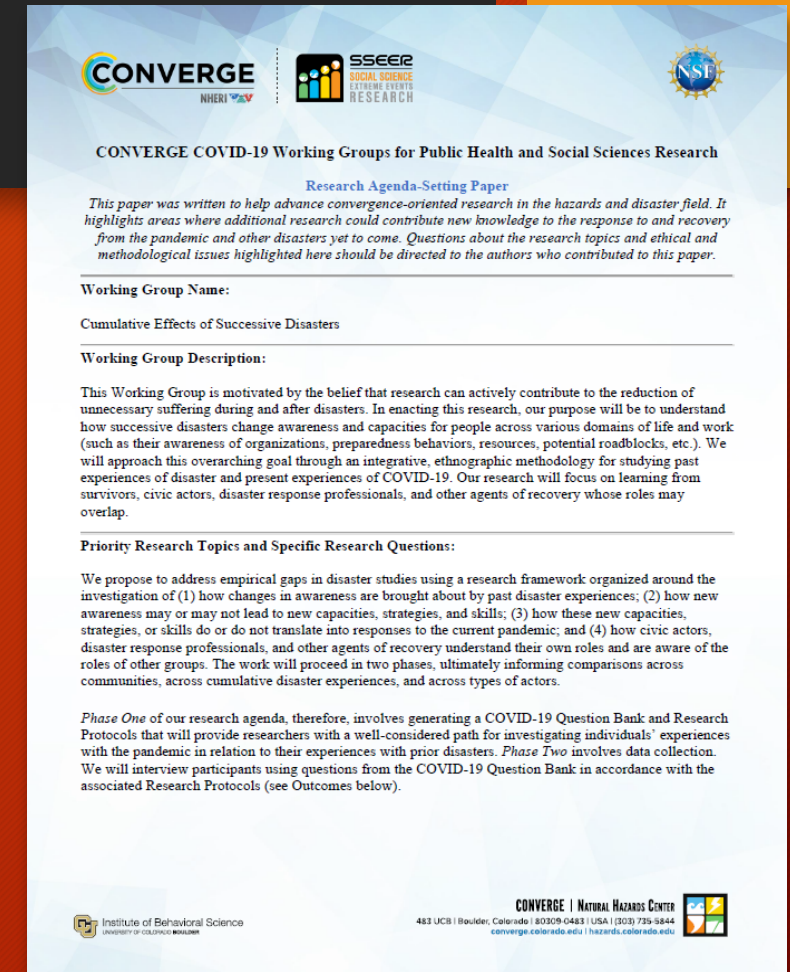
Instagram Twitter LinkedIn YouTube

[converge.colorado.edu/resources/covid-19/working-groups](https://converge.colorado.edu/resources/covid-19/working-groups)



# COVID-19 Working Groups – *Group Requirement*

- Submit a research agenda setting paper by June 19, 2020





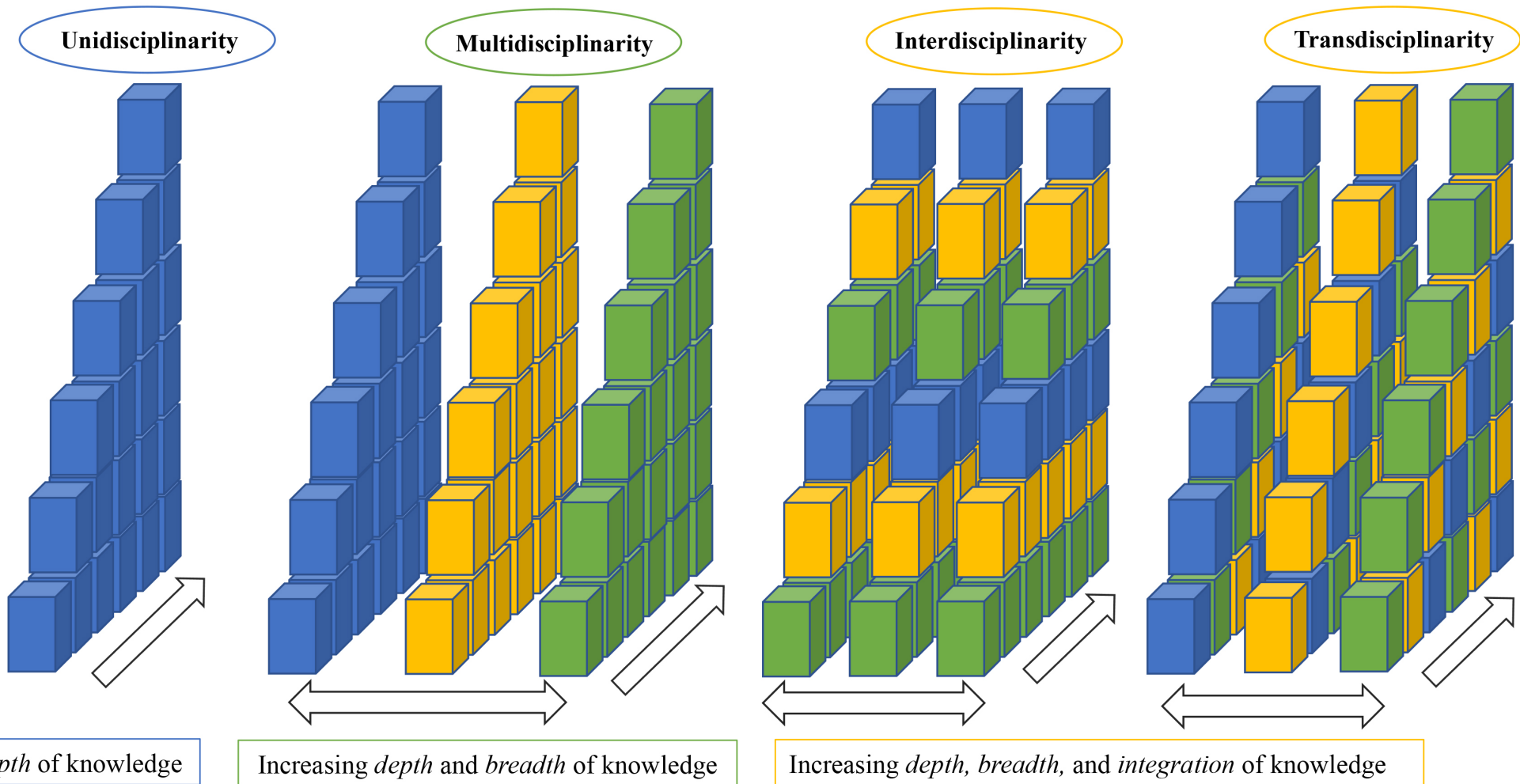
## 4. Connecting and Coordinating Researchers







[converge.colorado.edu/research-networks](https://converge.colorado.edu/research-networks)






# 5. Funding Convergence Research




[ABOUT](#) [RESEARCH NETWORKS](#) [RESOURCES](#) [DATA](#) [COMMUNICATIONS](#) [CONTACT](#)

[Resources](#) > [COVID-19](#) > [Working Groups](#)


## COVID-19 Working Groups for Public Health and Social Sciences Research




POPULATION GROUPS, ORGANIZATIONS, AND SOCIAL INSTITUTIONS








ISSUES, IMPACTS, AND RECOVERY



COMPOUND HAZARDS AND CASCADING DISASTERS



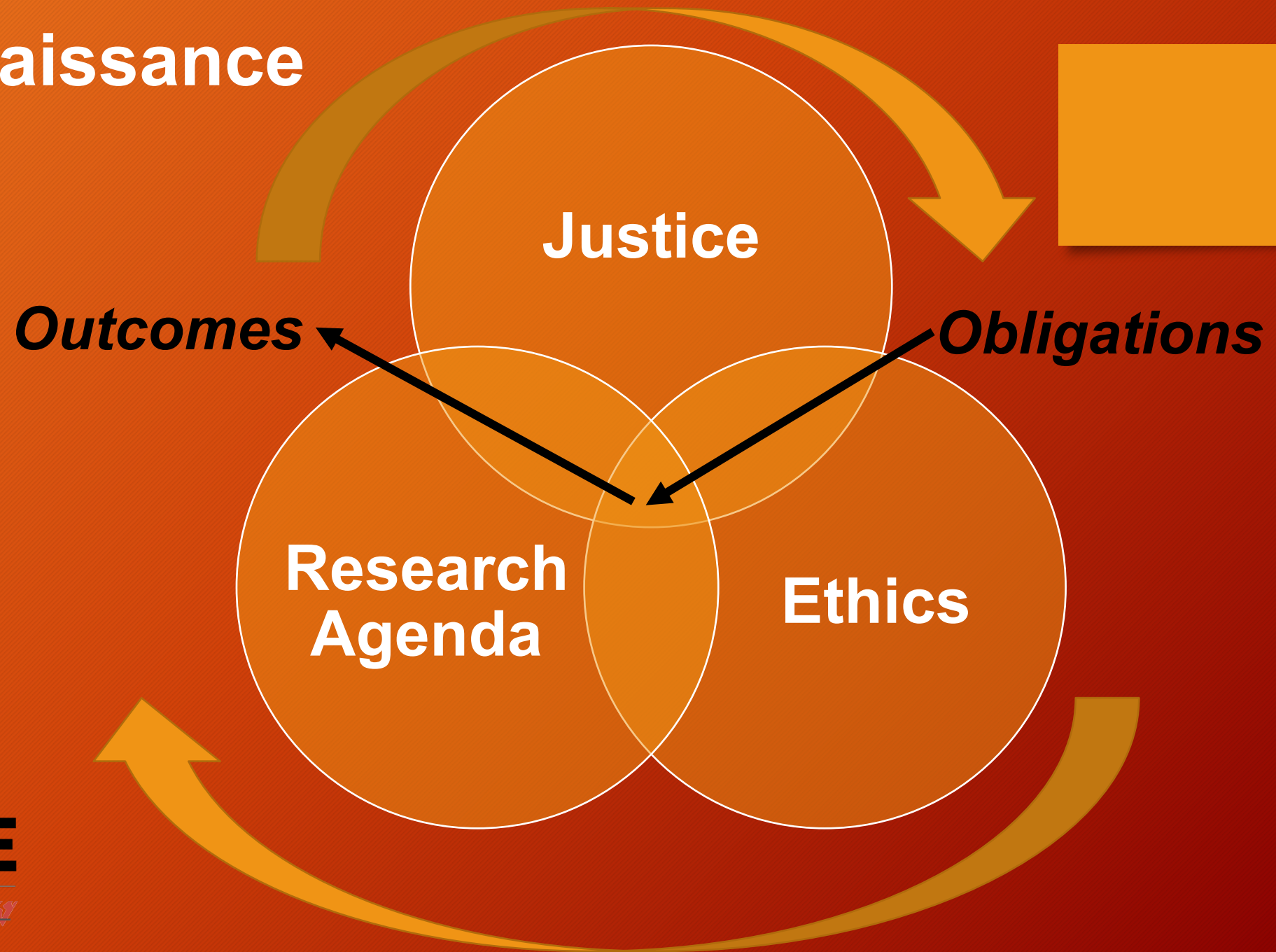
RESEARCH NETWORKS, METHODS, AND ETHICS





# Just Reconnaissance

NSF support for CONVERGE has helped to create a *social infrastructure* for encouraging just reconnaissance research.







Please sign up for updates and information for the  
Natural Hazards Center and CONVERGE:



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



CONVERGE and the Natural Hazards Center are funded by the National Science Foundation, Division of Civil, Mechanical, and Manufacturing Innovation (CMMI), Program on Humans, Disasters, and the Built Environment ([Award #1841338](#) and [Award #1635593](#)). Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the NSF.