CONVERGE

ethical, coordinated, and scientifically rigorous social science, engineering, and interdisciplinary extreme events research

Lori Peek
Principal Investigator, CONVERGE, SSEER, and ISEEER Director, Natural Hazards Center Professor, Department of Sociology University of Colorado Boulder
Session 2: Collecting, Managing, and Archiving Social and Behavioral Science Data

Describe opportunities for identifying and coordinating social science researchers so that we can best share information and publish our data as well as data collection protocols using DOIs, repositories, etc.

Discuss some of the overarching challenges and concerns with sharing social science data, such as privacy, data management plans and related IRB policies, duplication vs. replication, etc.
4 Things
1. NSF has funded the CONVERGE initiative
Why CONVERGE?
Why CONVERGE?

- *identify* and *coordinate* researchers and research teams;
- *advance* hazards and disaster research;
- *encourage* the publication of data and data collection instruments and protocols (DesignSafe Cyberinfrastructure + CONVERGE);
- *support* and *accelerate* training and mentoring;
- *fund* virtual reconnaissance, field research, and the development of novel research instruments and data collection protocols;
- *accelerate* the development of mobile applications for social science data collection (NHERI RAPID);
Why CONVERGE?

Dorian batters the coast of the Carolinas

About 115,000 people are without power in South Carolina and Georgia as the Category 3 storm moves up the coast

- Track the storm | How to help | CNN's live site

The wild horses of the Outer Banks won't evacuate. They have a special trick to survive hurricanes

Trump shows apparently altered Dorian trajectory map

Analysis: Where is Trump getting his bogus info about Dorian?

Dorian has strengthened to a Category 3 storm

Bahamas resident: You can smell the death in the air...
2. NSF Supports Extreme Events Research (EER) Networks

converge.colorado.edu
Why the EER’s?

Disciplinary and Interdisciplinary (within and between)

- research coordination
- ethical conduct
- scientific agenda setting
- data sharing and data publication
3. SSEER is for Social and Behavioral Scientists (please join!)

converge.colorado.edu/join-sseer
Why SSEER?

- A network for social and behavioral scientists who study hazards and disasters

816 researchers
Why SSEER?

- Learn more about diverse social scientists who study hazards and disasters
  - discipline
  - professional status
  - methods
  - events
  - etc.
How many SSEER researchers study hurricanes? 349 of 816

What percentage of SSEER researchers study hurricanes? 43%

How many hurricanes did people study on average? Mean = 2.2, Median = 2, Mode = 1, Stand. Dev. = 1.5, Min = 1, Max = 10

SSEER researchers studied two hurricanes on average. A few researchers studied up to ten.
What is the professional status of SSEER researchers who study hurricanes?

Professional Status of SSEER Researchers

- **Academic Researcher**: 229
- **Student**: 51
- **Government Researcher**: 28
- **Non-Profit Researcher**: 16
- **Independent Researcher**: 13
- **Other**: 6
- **Private-Sector Researcher**: 4
- **Retired**: 1
- **No Response**: 1

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Which phases of the disaster cycle do SSEER hurricane researchers study?

*most respondents chose multiple phases*
What are the disciplinary backgrounds of the SSEER researchers who study hurricanes?

*respondents often chose more than one discipline*
Which methods do the SSEER researchers who study hurricanes use?

*researchers chose multiple methods*
Where are the SSEER researchers who study hurricanes?
How many hurricanes were studied by SSEER researchers?

52 of the 1,065 (5%) unique disasters studied by SSEER researchers were hurricanes.

How many SSEER researchers per hurricane on average?
Mean = 14.8, Median = 3, Mode = 1, Stand. Dev. = 30.8, Min = 1, Max = 162

Most hurricanes in the data are studied by only a few researchers.
There are a few very popular hurricanes.
What are the top 20 most studied hurricanes by SSEER researchers?

How many SSEER researchers studied each hurricane?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Hurricane</th>
<th>Number of SSEER Researchers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hurricane Katrina, 2005</td>
<td>162</td>
</tr>
<tr>
<td>2</td>
<td>Hurricane Harvey, 2017</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Hurricane Sandy, 2012</td>
<td>91</td>
</tr>
<tr>
<td>4</td>
<td>Hurricane Maria, 2017</td>
<td>70</td>
</tr>
<tr>
<td>5</td>
<td>Hurricane Irma, 2017</td>
<td>65</td>
</tr>
<tr>
<td>6</td>
<td>Hurricane Matthew, 2016</td>
<td>39</td>
</tr>
<tr>
<td>7</td>
<td>Hurricane Ike, 2008</td>
<td>37</td>
</tr>
<tr>
<td>8</td>
<td>Hurricane Rita, 2005</td>
<td>25</td>
</tr>
<tr>
<td>9</td>
<td>Hurricane Florence, 2018</td>
<td>21</td>
</tr>
<tr>
<td>10</td>
<td>Hurricane Irene, 2011</td>
<td>13</td>
</tr>
<tr>
<td>11</td>
<td>Hurricane Andrew, 1992</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>Hurricane Gustav, 2008</td>
<td>11</td>
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<tr>
<td>13</td>
<td>Hurricane Ivan, 2004</td>
<td>11</td>
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<tr>
<td>14</td>
<td>Hurricane Isaac, 2012</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>Hurricane Michael, 2018</td>
<td>10</td>
</tr>
<tr>
<td>16</td>
<td>Hurricane Mitch, 1998</td>
<td>9</td>
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<tr>
<td>17</td>
<td>Hurricane Hugo, 1989</td>
<td>7</td>
</tr>
<tr>
<td>18</td>
<td>Florida Hurricane Season, 2004</td>
<td>5</td>
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<tr>
<td>19</td>
<td>Hurricane Frances, 2004</td>
<td>5</td>
</tr>
<tr>
<td>20</td>
<td>Hurricane Georges, 1998</td>
<td>5</td>
</tr>
</tbody>
</table>
Where are the researchers in relation to the hurricanes they study?
Locations of the SSEER researchers who studied Hurricane Maria, 2017
Locations of the SSEER researchers who studied Hurricane Sandy, 2012
SSEER and locally affected hazards and disaster researchers

How can the platform be used to identify researchers affected by hazard and disaster events?
SSEER researchers potentially affected by Hurricane Dorian, 2019
4. Data Publication Opportunities

The story went something like this...

- NWS Requirement
- Informs Research
- Research ensures minimum requirement
- But, wait. Meet minimum or improve?
- No central SBS data archival system

- Measuring improvement requires baseline data
- Baseline data requires collecting longitudinal data
- SBS Researchers have data/data management plans
- To make this a priority, we need societal impact performance metrics
- These metrics would relate to requirements and measuring success of SBS projects
4. NSF Supports Cyberinfrastructure for Hazards and Disaster Data Publication!
Social Science and Interdisciplinary Data Model

PRJ-1234 | HURRICANE MICHAEL STRUCTURAL DAMAGE AND POPULATION RESILIENCE

Authors: Peak, Lori; Wartman, Joseph et al.

Keywords: Hurricane, Reconnaissance, Damage Assessment, Interviews, Children, Shelters

Publication Type: Field Research | Reconnaissance, Social Science

Event: Hurricane Michael | Florida | 10/7/2018 | Lat 30.455660 Long -97.813780

Event Type: Hurricane, Storm Surge, Flood

Date of Publication: 11/25/2018

DOI: 10.17603/ds2-24hp-mv2k

License: ODC Public Domain Dedication and License

Awards: NSF-CMMI-1041338

NSF-CMMI-1116020

Related Work: Quick Response Research after Hurricane Katrina: A Study of Families

Rapid Reconnaissance Engineering Investigations after Hurricane Harvey, Irma, and Maria

This interdisciplinary social science and engineering data set includes damage assessment data collected five weeks after Hurricane Michael, as well as survey, interview, and observational data collected with parents and their children. This data may be of special interest to those seeking to understand the connections between damage to the built environment and associated social disruptions.

Reports | Virtual Reconnaissance

Mission / Wave | Mexico Beach - RAPID

Mission / Wave # | 1

Date(s) of Collection: 11/11/2018 - 11/15/2018

Data Collector(s): Haynie, Sarah; Huang, Shih-Kai; Bello, Elba; Fischer, Erica; Ecand; Anne-Margaret; Lyles, Ward; Morgan, Mary; Aleya, Meza; Michell

Data Location: North Lake Estates | Lat 30.455660 Long -97.813780 Elevation 20'

During this initial wave, the research team collected damage assessment data in two neighborhoods, as well as surveyed and interviewed parents and children who were displaced from those neighborhoods. The intent is for the team to return for two to three more waves of data collection over the coming year.
Social Science and Interdisciplinary Data Model

- Planning Documents and Research Protocols
- Interview Guides, Questionnaires
- Audio Recordings
- Photos
- Data
Why Publish?
Why Publish?

- Find Your Data
- Share Your Legacy and New Data
- Coordinate with Other Researchers (private and public data options)
- Encourage Replication (not Duplication)
- Get Credit – DOI’s!

Identify Gaps + Advance Science
Thank you so very much!

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Lori Peek: lori.peek@colorado.edu