



# The Natural Hazard and Disaster Reconnaissance (RAPID) Facility

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## Natural Hazard and Disaster Reconnaissance Facility (RAPID)

The RAPID Facility enables transformative research by providing investigators with the instrumentation, software, and support needed to collect, process, and analyze perishable data from natural hazard events and from disasters.



Laser scanners  
(up to 2.4 km range)



Suite of drones  
with high  
resolution  
cameras and lidar



Hydrographic survey



On-Demand Training



Data Post-Processing Support



Seismographic arrays and shear  
wave velocity profiling



"Streetview" mobile imaging



RApp mobile  
application



Hyperspectral  
camera



Mobile Mass  
Spectrometer



X-Ray  
Fluorescence



Air monitoring



Drone-based  
water sampling

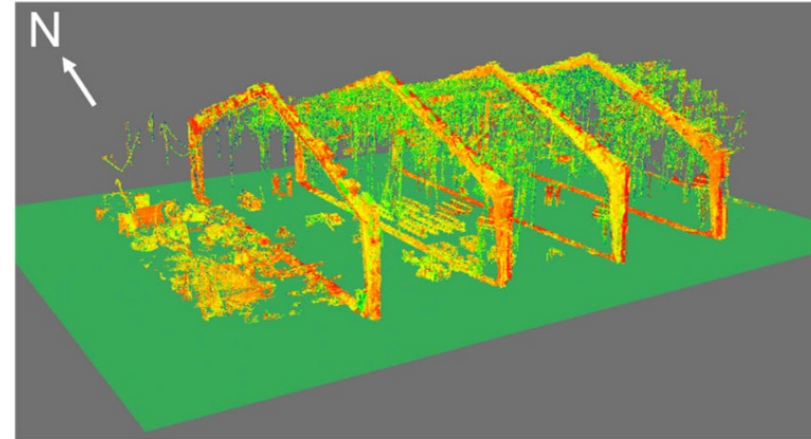


National Institutes  
of Health

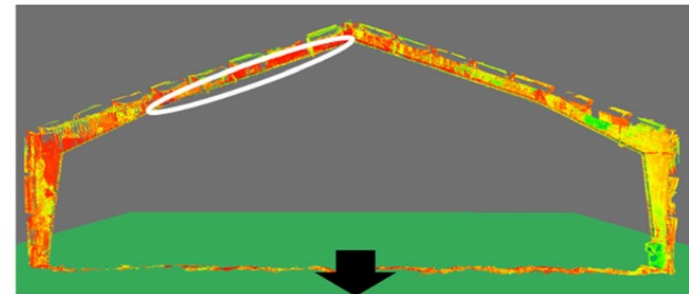
### Activities, Support, and Services

- Manage advanced data collection equipment and instrumentation
- Design comprehensive data collection strategies and methods; UAS information
- Deliver specialized training through hands-on workshops and fieldwork

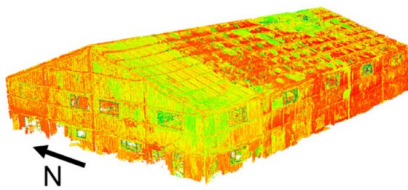
## Example Dataset: Terrestrial Lidar



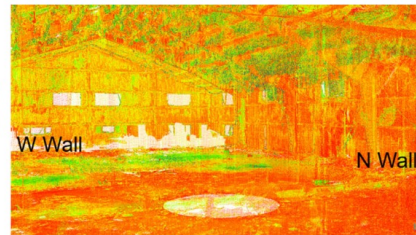
(a)



Schulze et al. 2021



(a)



(b)

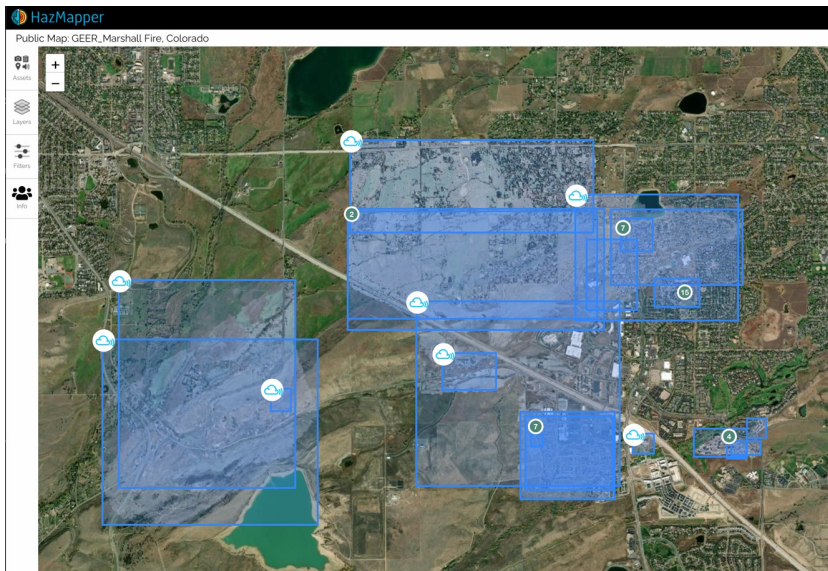


Example Dataset:  
UAS/SfM



Marshall Fire, E. Fisher

# Example Dataset: UAS/SfM



**NSF NHERI RAV DESIGNSAFE**

Use DesignSafe Learning Center NHERI Facilities NHERI Community News Help

Search DesignSafe Website Datasheet

**DATA DEPOT**

Search within Publication

Published **PRJ-3379 | GEER - Marshall Fire, Colorado** Download Dataset

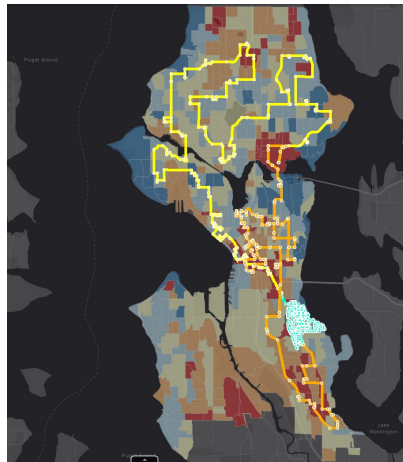
PI	Wham, Brad
Co-PIs	Fletcher, Erik; Daulton, Brock
Project Type	Field research / Reconnaissance
Natural Hazard Type(s)	Fire
Event(s)	Marshall Fire (Louisville, Colorado; Marshall, Colorado) Superior, Colorado   2021-10-30 - 2022-06-22 [Lat: 39°19'23"N Long: 105°10'48"W]
Avenue	GEER: 2021 Marshall Fire Reconnaissance; Code: 332719
Keywords	RAPID/Collaborative Research: Investigation of 2021 Marshall Fire Impacts on Physical Infrastructure and Decision-Making Processes   2216962
HazMapper Maps	GEER_Marshall Fire, Colorado (P)

View Data Diagram | Leave Feedback

**Description:**  
Reconnaissance of the damage resulting from the Marshall Fire in Boulder County, Colorado. Data included was collected in parallel to GEER reconnaissance mission: 2021 Marshall wildfire, GEER's first response to wildfire event (report linked below). Imagery collected in 2022 during three general time periods: Late January, mid-February, and late-April. Data was collected as soon as possible following the event to provide a detailed overview of the impacts (none cover to present in some data sets, several of which were repaired in subsequent flights). HazMapper link provides overview of...  
[Show More](#)

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# Example Dataset: Street View Images



PLOS ONE

RESEARCH ARTICLE

Open-source data pipeline for street-view images: A case study on community mobility during COVID-19 pandemic

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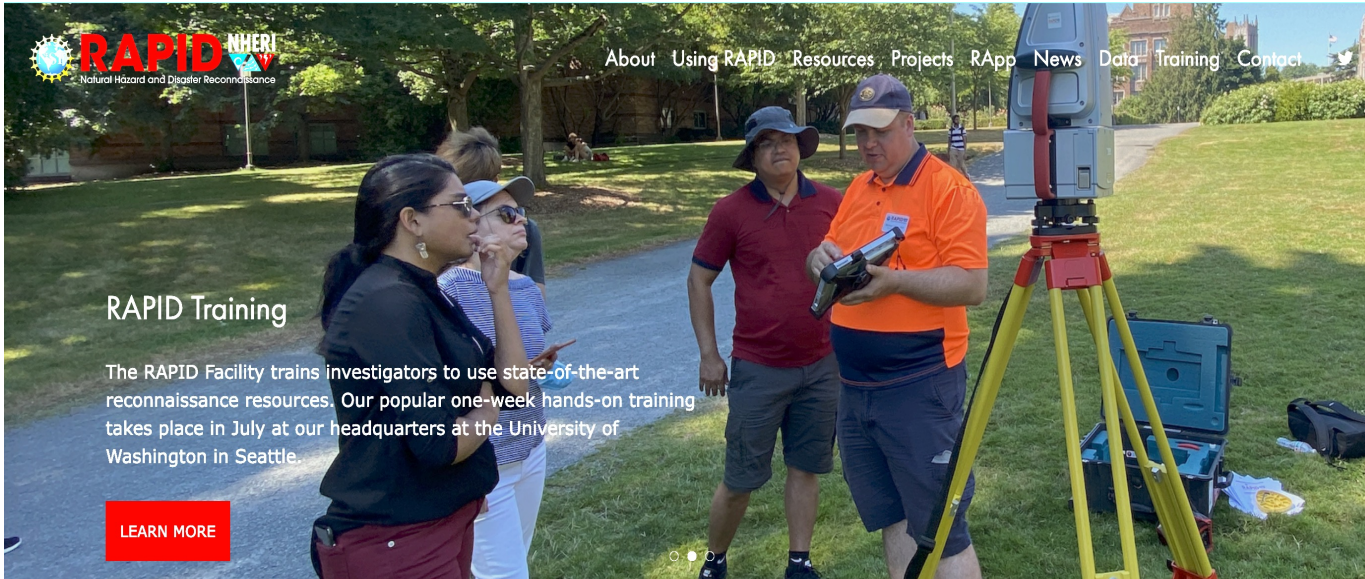
## Current Los Angeles Fires Data Collection Opportunities for the Natural, Social and Health Sciences:

*"A humanitarian mission in the broadest sense" (LA Times)*

- Public Health Consequences (e.g., Air Quality and Respiratory Issues, Mental Health Impacts)
- Economic and Infrastructure Damage (e.g., Property Value Erosion, Infrastructure Functionality and Losses)
- Environmental and Ecosystem Effects (e.g., Soil Erosion and Contamination, Carbon Cycle Alterations)
- Community Displacement and Demographic Shifts (Population Displacement, Inequitable Recovery)
- Cascading Hazards and Secondary Disasters (Landslides, Infrastructure Chain Failures)
- Assess and Test Wildfire Mitigation Effectiveness

### **RAPID Science Plan**

- Cross-Scale Data Collection (Spatial, Temporal, and Social)
- Collect and synthesize multidisciplinary data sets



[uwrapid.org](http://uwrapid.org)

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