RAPID NHERI
Natural Hazards Reconnaissance

DesignSafe: Introduction to DesignSafe, HazMapper, Potree, and QGIS

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DESIGNSAFE-CI
A NATURAL HAZARDS ENGINEERING COMMUNITY

A Cyberinfrastructure for the Natural Hazards Community

Slides courtesy of Ellen M. Rathje, Director, DesignSafe-ci, and Professor, University of Texas

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What is DesignSafe?

- A web-based research platform that provides computational tools to manage, analyze, and understand critical data for natural hazards research

DesignSafe Vision

- A CI that is an integral part of research discovery
  - Support end-to-end research workflows and the full research lifecycle, including data sharing/publishing
  - Cloud-based tools that support the analysis, visualization, and integration of diverse data types
- Amplify and link the capabilities of the NHERI partners and natural hazards researchers around the globe

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NHERI: Natural Hazards Engineering Research Infrastructure

- NSF-funded, shared-use research infrastructure to enable transformative research in natural hazards engineering
  - Network Coordinating Office (NCO)
  - Cyberinfrastructure (CI)
  - Seven shared-use experimental facilities (EF)
  - **Natural hazards reconnaissance facility (RAPID)**
  - Computational Modeling and Simulation Center (SimCenter)

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DesignSafe Components

- Research Workbench
  - Data Depot
  - Workspace
  - Reconnaissance Portal
- Learning Center
  - Training resources and student engagement
- NHERI Facilities
  - Access to information about all NHERI facilities
- NHERI Community
  - News and online Slack community

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Data Depot Features

- Different areas:
  - My Data (Private)
  - My Projects (Semi-Private, Collaborative)
  - Published (Publicly accessible, curated)
  - Community Data (Publicly accessible, uncurated)
- Upload files/folders via web browser, cloud service providers, or bulk transfer (Globus)
- Manage, preview files within Data Depot
- Data curation and publishing

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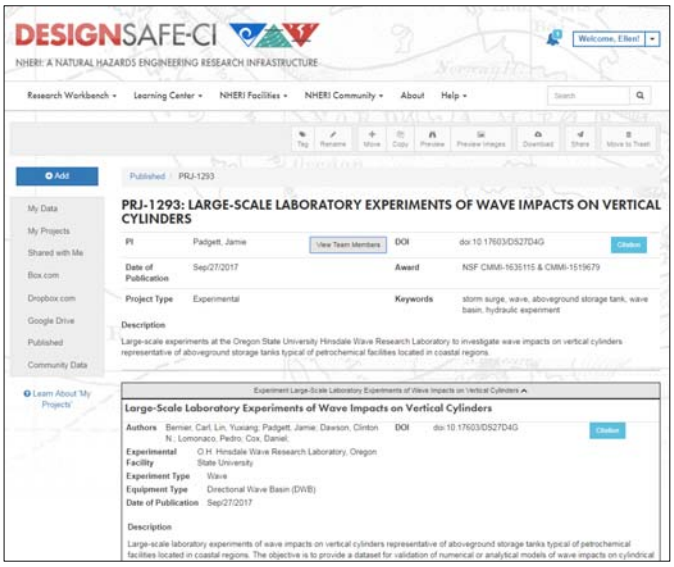
Data Depot: Published Project



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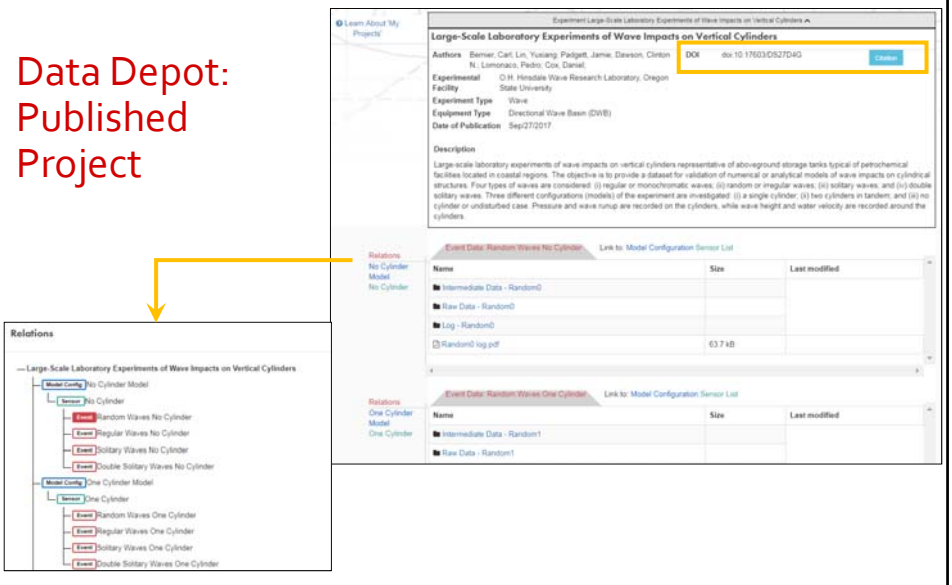
Data Depot: Published Project



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Data Management Philosophy

- ***Vision:*** Allow users to easily store, share, document, and publish the data associated with their research, supporting the full data lifecycle
  - Focus on achieving community's research goals
  - Flexible data models that support how researchers organize their data
- Different data models for different types of projects:
  - Experimental, Simulation, Hybrid Simulation, Field Reconnaissance, and Other

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Workspace: Data analysis

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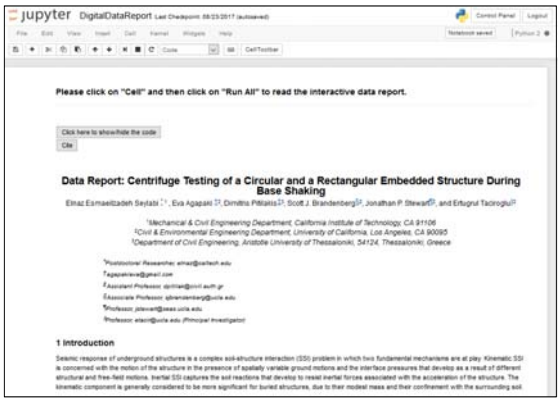
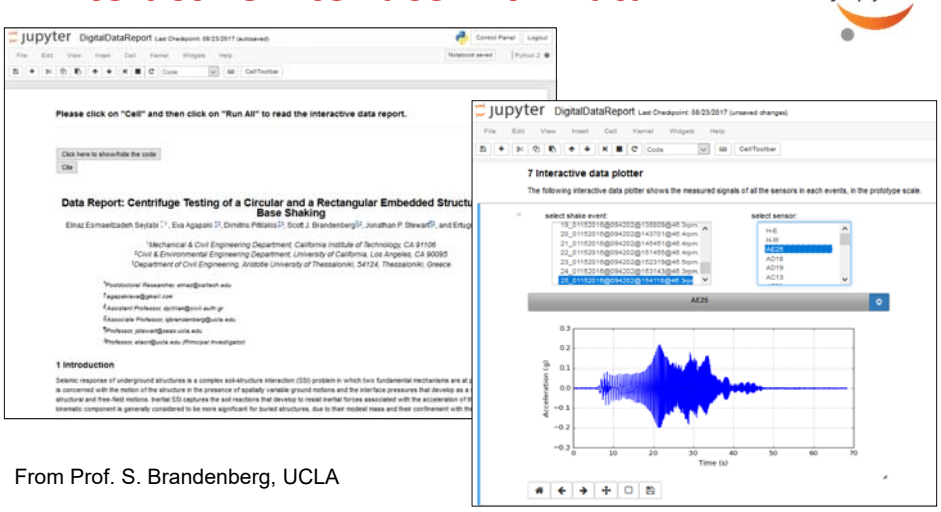
Interactive Interface with Data



From Prof. S. Brandenberg, UCLA

Interactive Interface with Data



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Reconnaissance Portal

Identifying Archived Datasets from Recon Events

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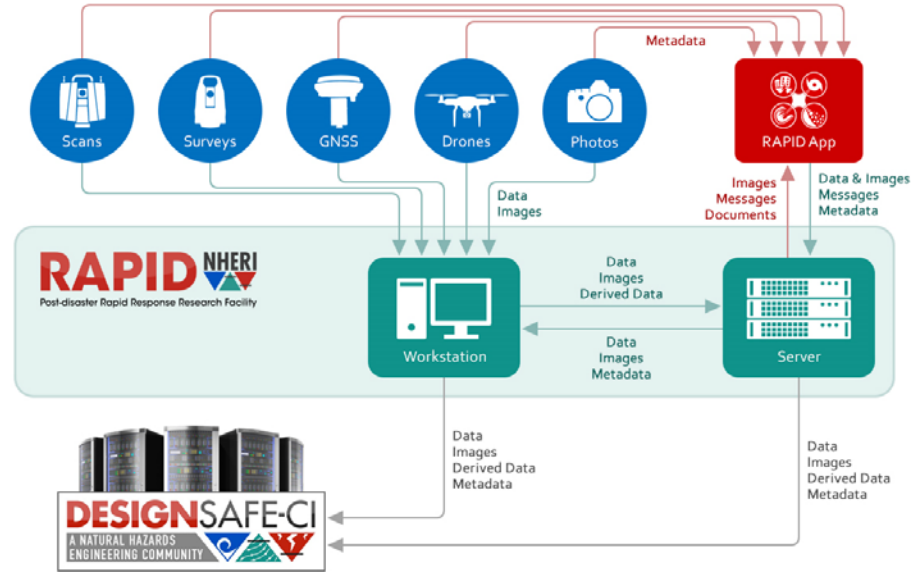
Data Workflow Concept



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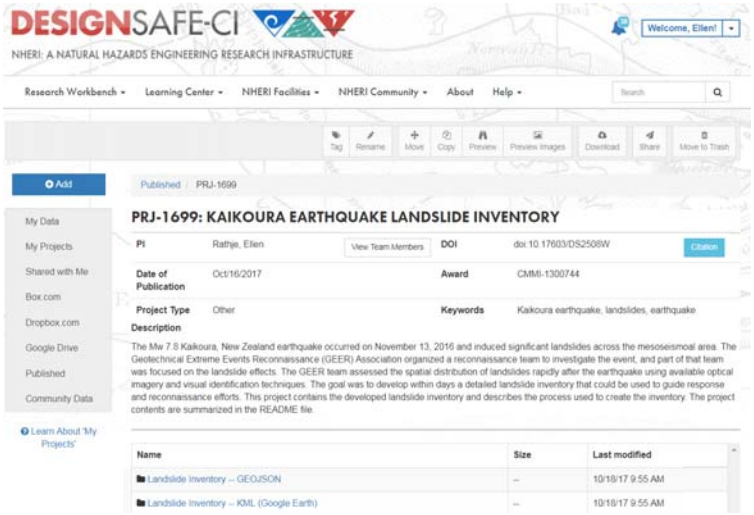
Recon Portal → Data Depot



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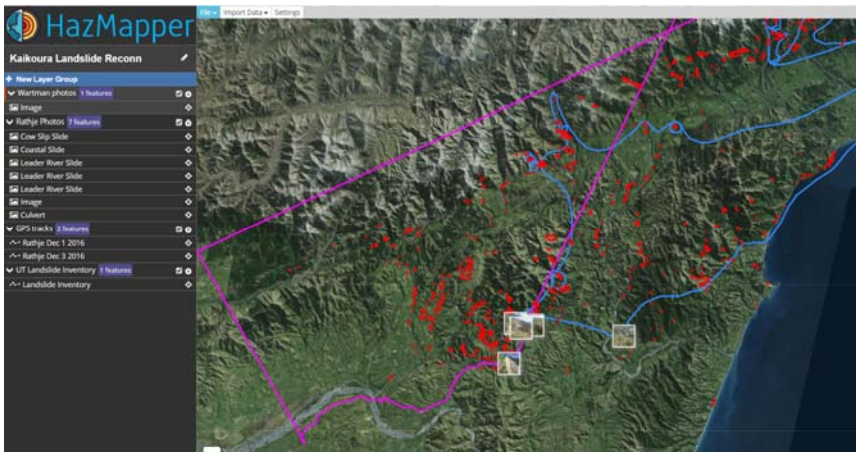
HazMapper: Landslide Distribution

Interactive Map Viewer of Event Data



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DesignSafe: Open for Business

www.designsafe-ci.org

- Capabilities available to the global natural hazards research community—account registration is free
- Training webinars
  - Overview webinars, as well as detailed training on Jupyter, etc.
  - Archived training webinars available at https://www.designsafe-ci.org/learning-center

Please share your feedback, ideas, experiences!

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