Geoprocesses, geohazards - CSDMS 2018
Co-funded by NSF's PREEVENTS and EarthCube Programs

Justin Lawrence, Program Director

May 22, 2018

Thank You to Our Reviewers and Panelists!

- We can't say that often enough.

- Your contribution of time and your insights are immensely important to us.

- We hope you'll find your service to NSF to be interesting and rewarding.

- Interested in being a reviewer or panelist – let us know!

Prediction of and Resilience Against Extreme Events (PREEVENTS)

Basic purpose

- Better understand risks posed by GEO-relevant natural hazards and extreme events through basic geoscience research, in order to help increase resilience and reduce impacts on life, society, and the economy

Primary targets – **must address both to be eligible**

- Enhance understanding of fundamental processes underlying natural hazards and extreme events on various scales, and variability inherent in such hazards/events
- Improve capability to model and forecast such hazards and events

Subsidiary – encouraged, but not required

- Improve understanding of effects of natural hazards/extreme events
- **Enable** development, **with other support**, of tools to enhance societal resilience

Directorate for Geosciences: Divisions of Atmospheric and Geospace Sciences, Earth Sciences, Ocean Sciences, & Polar Programs

3

PREEVENTS Management Team

Carrie Black

Eric DeWeaver

Susanna Ehlers

George Voulgaris

Justin Lawrence

Diane McKnight

Ilia Roussev

Deborah Smith

Jennifer Wade

Program Design

	Co-funding	Track 1 (conferences)	Track 2
Purpose	Leverage other programs Provide additional support Flexibility on "extreme" **New data collection OK**	Conferences to foster new communities and interdisciplinary methods	Projects addressing both primary goals that don't fit existing GEO programs **No support may be requested for new data collection**
Request	Internal memo only*	PREEVENTS solicitation every two years **Letter of intent due last Friday in July, 2018** **Full proposal due third Tuesday in September, 2018**	
FY16 ($M)	17.75**	-	-
FY17 ($M)	8.0	0.50	18.5
FY18 ($M)	8.0	0.50	
FY19 ($M)	TBD	TBD	TBD
FY20 ($M)	TBD	TBD	

*Max co-funding per project: 50% of total project or $1M, whichever is less. Under *exceptional* circumstances, the management team may elect to consider requests for up to $1.5M per project.

**FY16 - $9M for co-funding under management team, remainder distributed in Divisions for PREEVENTS-relevant work

PREEVENTS Solicitation
2016/17

199 Letters of Intent

131 Projects Submitted

117 Projects Compliant
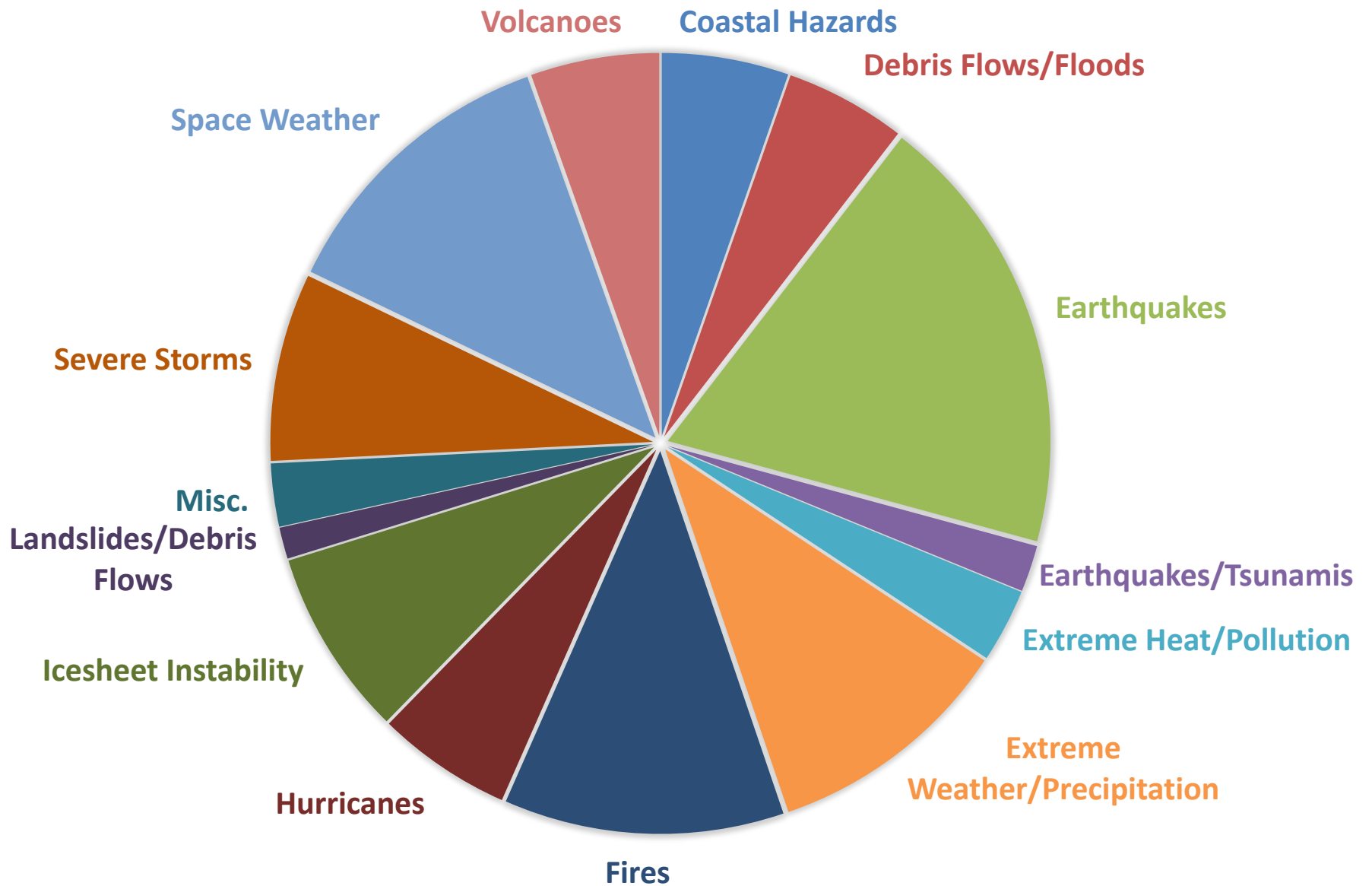
13 Awards Made

PREEVENTS Track 2 Awardees
2016/17

PREEVENTS Portfolio ($)

Project Highlight: PREEVENTS Funding in the Cascade Range of the Pacific Northwest

1663859: Integrated Modeling of Hydro-Geomorphic Hazards: Floods, Landslides and Sediment

- Mountain to Coastline (M2C) framework will couple a landscape evolution model, a glacio-hydrology model, and a hydrodynamic/morphodynamic model.
- Places bounds on the extent to which geomorphic processes that create and transport sediment translate into flood hazard.
- NGOs and stakeholders will be involved, including USGS and NPS.
- Interacts with the National Water Model.

$1,699,663: PREEVENTS funding

(Top) 2009 flooding of the White River in the town of Pacific WA.
(Bottom) Upland reaches of the White River filled with sediment.

PI: Erkan Istanbulluoglu, University of Washington

+ Christina Bandaragoda
  Brian Collins
  Alexander Horner-Devine
  Nirnimesh Kumar
  David Shean
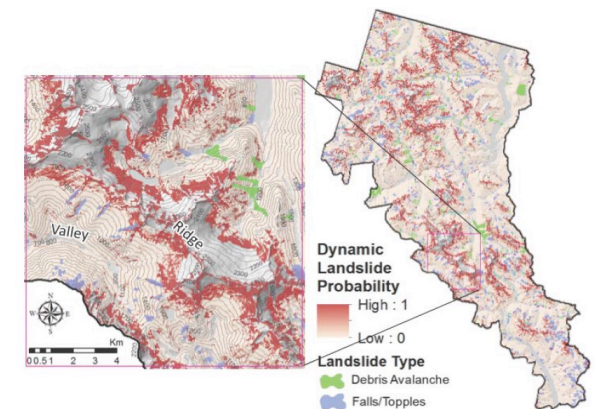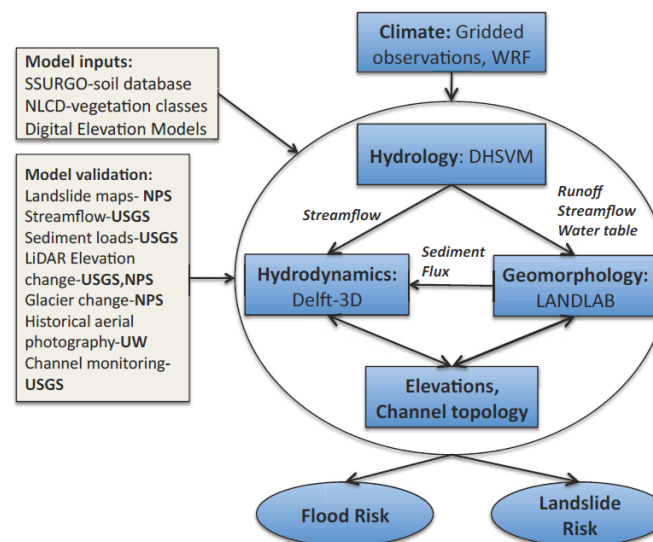 Jessica Lundquist
  David Montgomery
  Guillaume Mauger
  Allison Pfeiffer
  … and others

Shallow landslide risk map.

EarthCube Opportunities

Participate in Discovery Registry

- New **decentralized** approach to linking data repositories *(IEDA, BCO-DMO, LinkedEarth, Neotoma, Open Core Data, MAGiC, UNIDATA, etc.) using* **schema.org standards**
- Coordination through **EarthCube Council of Data Facilities**
- Leaders: Eric Lingerfelt (ESSO), Doug Fils (Ocean Leadership), Adam Shepherd (WHOI)
- Working with tools and services as well as data

- Communities should develop standards for sharing data, models, tools

- Look for Solicitation updates in Fall 2018- Spring 2019

5th annual meeting

www.earthcube.org/ECAHM2018

Funding Opportunities in Computer and Information Science and Engineering (CISE)

- Training-based Workforce Development for Advanced Cyberinfrastructure (**CyberTraining**) https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505342&org=OAC&sel_org=OAC&from=fund

- Cyberinfrastructure for Sustained Scientific Innovation (**CSSI**) Data and Software: Elements and Frameworks *formerly DIBBS and SI2* https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505505

- Partnerships between Science and Engineering Fields and the NSF TRIPODS (Transdisciplinary Research in Principles of Data Science) Institutes (**TRIPODS + X**) (due May 29, 2018) https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505527&org=OAC&from=home

GEO Co-funds proposals submitted to these calls. Look for updated deadlines for 2019.
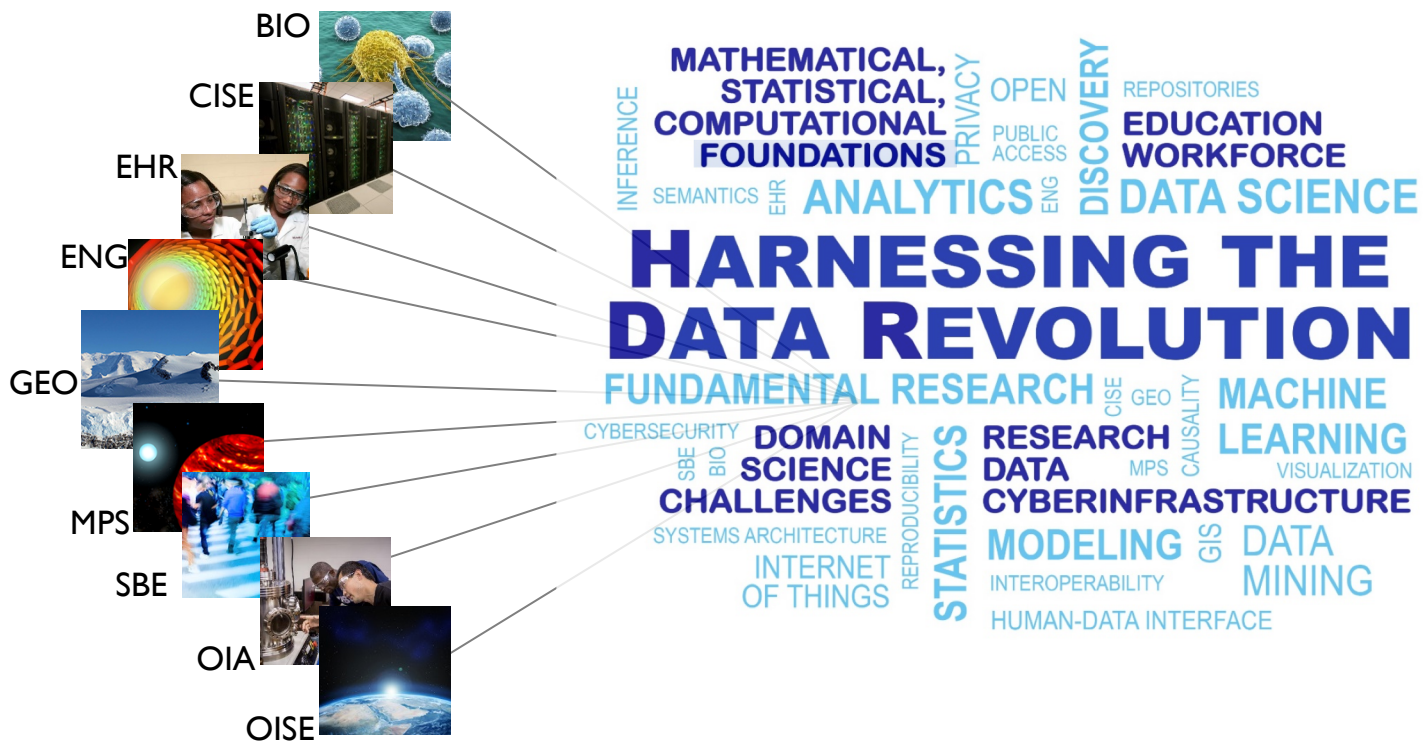
- One of the 10 Big Ideas
- 5 themes: Science domains; foundational data science; systems, algorithms; cyberinfrastructure; education, workforce
- $30M in 2019. Stay tuned for funding opportunities