

Community Resources

Herb Wang (UWisconsin),
Scott Tyler (U Nevada-Reno/CTEMPS),
Bob Woodward (EarthScope)

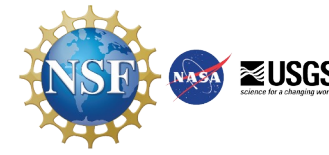
Kasey Aderhold (EarthScope)



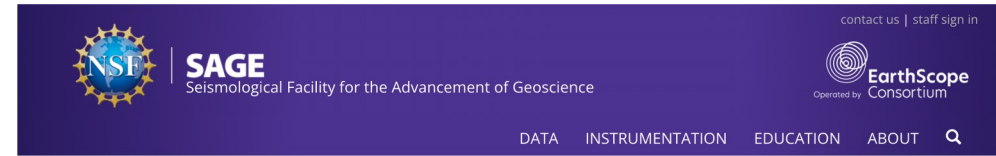
GAGE
SAGE

 EarthScope
Consortium
Operated by

DAS RCN



- DAS RCN - Distributed Acoustic Sensing Research Coordination Network
https://www.iris.edu/hq/initiatives/das_rcn
- Funded by the National Science Foundation to run 2020-2023
- Goals:
 - Identify applications of DAS and develop a network of potential DAS users.
 - Train a community of DAS users in the acquisition, handling and processing of DAS data.
 - Identify needed technical development (engineering and scientific).
 - Identify major challenges and next steps for supporting DAS science beyond the RCN.



Distributed Acoustic Sensing (DAS) Research Coordination Network (RCN)

Subscribe to the DAS mailing list through the IRIS Message Center [here](#). Messages can be sent to das@lists.ds.iris.edu.

[About](#) [Events and Announcements](#) [Steering Committee](#) [Join a Working Group](#) [New to DAS?](#)

New to DAS?

If you are new to Distributed Acoustic Sensing and are looking for places to start, please see the following resources.

- Tutorials
 - [2021 DAS Lesson from ROSES](#) with Dr. Eileen R. Martin (2 hour video)
 - [2020 DAS Workshop and Tutorial](#) (Playlist of 21 videos, [Github](#))

2023

May (3)
April (7)
March (4)
February (9)
January (3)

2022

2021

2020

Active Message Threads for May 2023

[2023 DAS RCN Workshop - June 13-14, 2023 in Madison, Wisconsin and Virtual - In-Person Registration and Hotel Block Closes May 26th, Call for White Papers](#) Kasey Aderhold
2023-05-25 02:23:26 - 2023-05-31 18:18:51

The *2023 DAS RCN Workshop <<https://www.earthscope.org/event/2023-das-workshop/>>* will be held June 13 (all day) and June 14th (morning) at the University of Wisconsin-Madison. This workshop will provide an opportunity to bring together the Distributed Acoustic Sensing (DAS) community that has matured and expanded over these past three years of the research coordination network. At this workshop, there will be opportunities to present and discuss DAS science and technology. We also welcome par... [\[more\]](#)

Replies

[Special session at forthcoming MetroSea workshop in Malta this 4-6 October on DAS sensing of the marine environment](#) - John Potter - 2023-05-31 18:18:51

[Ph.D on Passive imaging of the subsurface along transportation infrastructures using DAS and ML](#) Anthony Sladen
2023-05-11 17:42:43

Abstract of the Ph.D project A key aspect in the development of sustainable smart cities is to leverage the existing

DAS RCN



- Tutorials, short courses, workshops, webinars, community forums
- Recordings available on YouTube
- <https://www.youtube.com/playlist?list=PLvd8fqCFf8CUySHtD7omI7kMAxjqyPj9o>
- GitHub Repository
- github.com/DAS-RCN

The image shows a composite of two screenshots. The top screenshot is a YouTube search results page for 'das rcn'. It features a video player for 'Distributed Acoustic Sensing Research Coordination Network...' and a list of six related videos, including 'DAS RCN Community Forum - Global Distributed Acoustic Sensing Day', 'Engineering and Urban Seismology', 'Instrumentation Showcase Part 5 - DAS RCN Webinar', 'Global EQ DAS Data Campaign Coordination Meeting', and two more 'Instrumentation Webinar' entries. The bottom screenshot shows the GitHub repository page for 'DAS-RCN'. The repository is described as 'Codes and Examples from Distributed Acoustic Sensing Research Coordination Network' and has 40 followers. It lists two popular repositories: 'IntroToDASData' (a friendly introduction to reading and working with DAS data, 35 stars, 11 forks) and 'awesome-das' (a curated list of DAS tools and resources, 15 stars, 5 forks).

EarthScope

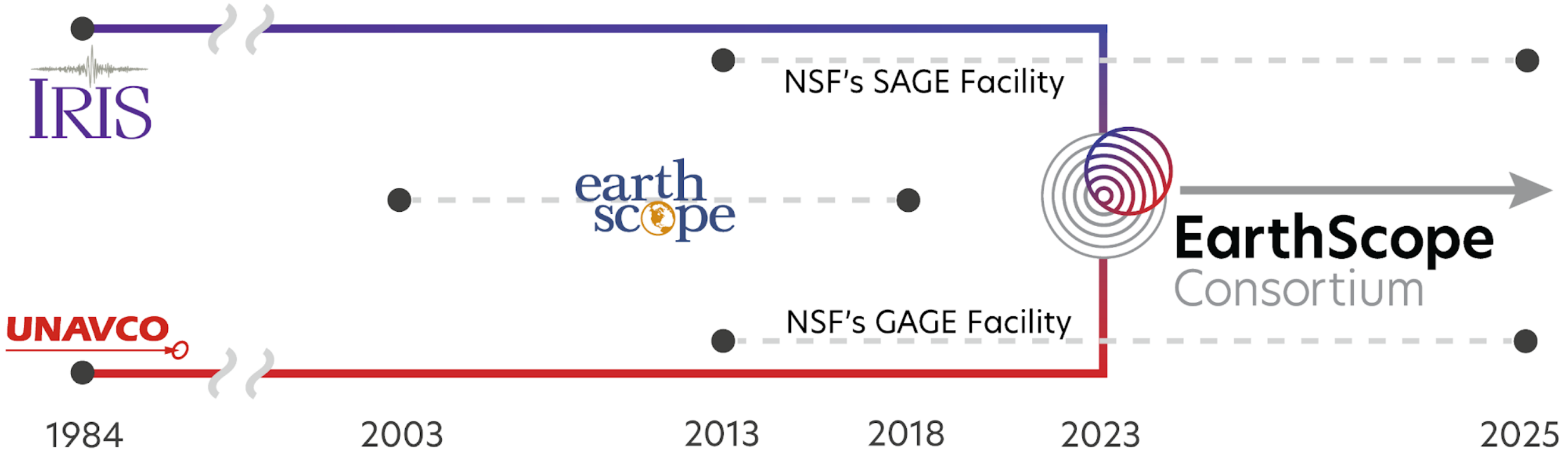


GAGE
SAGE



EarthScope
Operated by Consortium

- IRIS and UNAVCO merged to create EarthScope
- All the same services as before



SAGE - PASSCAL

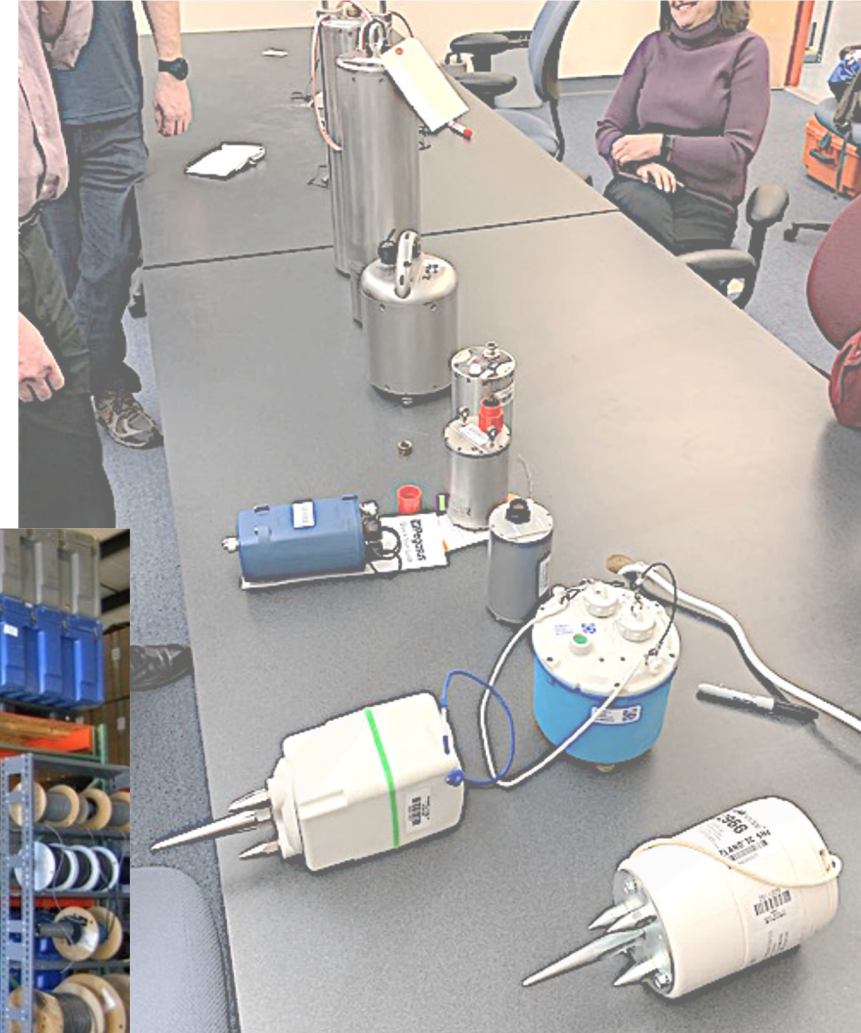


GAGE
SAGE



EarthScope
Operated by Consortium

- Support for PI experiments
 - Experiment planning
 - Training
 - Logistics/import/export
 - Data handling
 - Engineering
 - Field support
- ~1,000 broadband
- ~4,000 3C nodes
- multi-channel and GPR



SAGE – PASSCAL MT

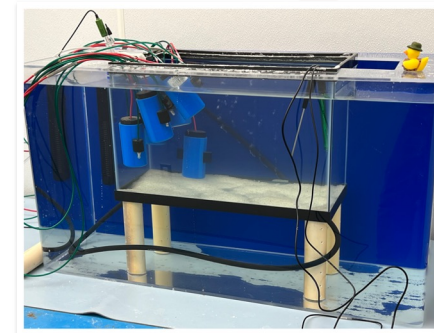


GAGE
SAGE



EarthScope
Operated by Consortium

- 13 LEMI LP and 22 Phoenix WB systems
- Software and support provided



SAGE – Educational Instrumentation



USGS
Science for a changing world

GAGE
SAGE

EarthScope
Operated by Consortium

- Ground Penetrating Radar (3 with multiple antennas)
- Multi-channel systems (refract/reflect) with short take outs



SAGE – PASSCAL Source Facility



GAGE
SAGE



EarthScope
Consortium
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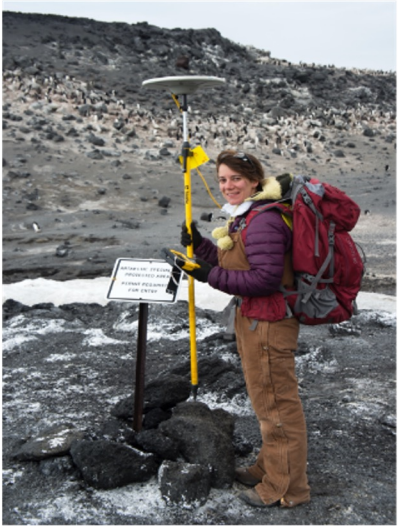
- Experiment support with explosive, pneumatic and other controlled seismic sources



SAGE & GAGE

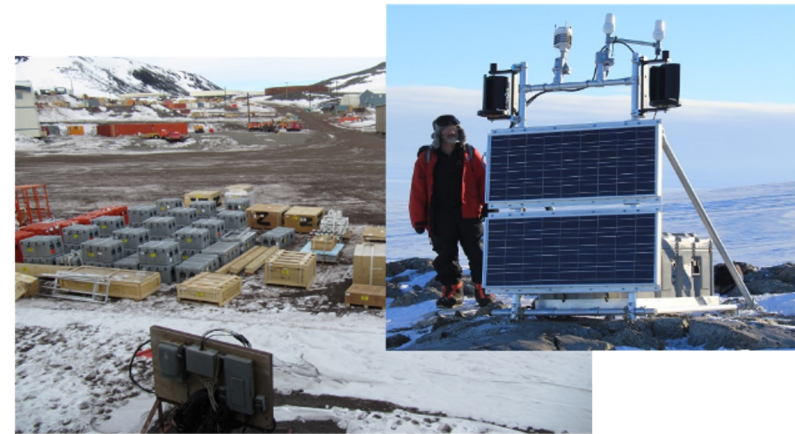


Campaign GPS, Mapping

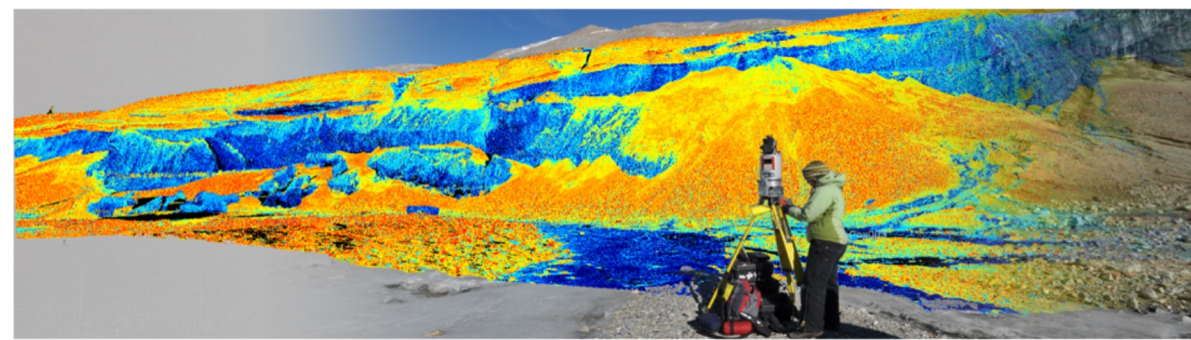


PI Training

Remote Instrument Networks



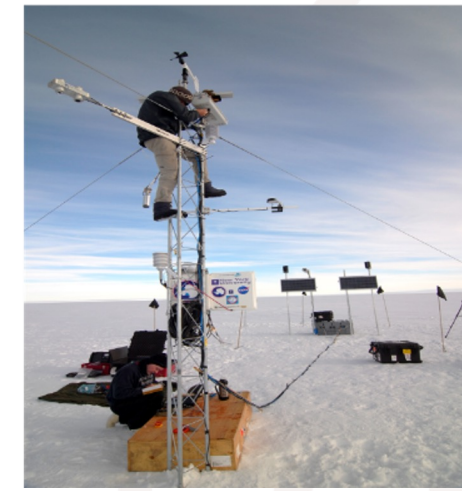
Geodetic Imaging – Terrestrial Laser Scanner



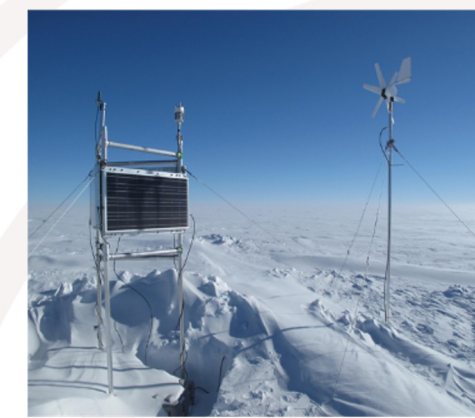
sUAV Multi-Sensor Capable



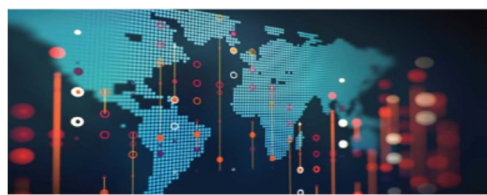
Instrument Power and Telemetry



Plateau instrumentation



Open Data Archive



DAS at EarthScope



- Increasing in-house knowledge of DAS instrumentation and data
- Procurement of community instrumentation, including a DAS interrogator (*in progress*)
- Data and metadata standards and archive/processing strategies towards eventual integration into the archive and Cloud (*in progress*)



PubDAS

a PUBLIC Distributed Acoustic Sensing datasets repository for
geosciences

Zack J. Spica¹, Jonathan Ajo-Franklin², Gregory C. Beroza³, Biondo Biondi³,
Feng Cheng², Beatriz Gaité⁴, Bin Luo^{3,α}, Eileen Martin⁵, Junzhu Shen⁶,
Clifford Thurber⁷, Loïc Viens^{1,β}, Herbert Wang⁷, Andreas Wuestefeld⁸, Han
Xiao^{9,γ}, Tiejuan Zhu⁶.

<https://eartharxiv.org/repository/view/3574>

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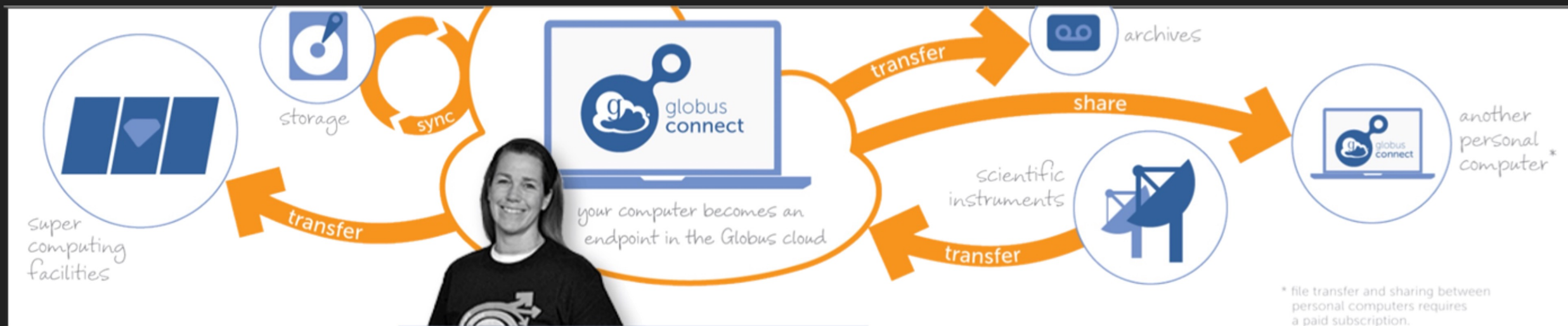


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UNIVERSITY OF MICHIGAN

How to access PubDAS?



Globus delivers fast and reliable big data transfer, sharing, and platform services directly from **your own storage** systems via software-as-a-service using existing identities with the overarching goal of unifying access to data across tiers



Global DAS Month



- February 2023
 - February 14th - DAS Day
 - 31 DAS contributors
 - Data on PubDAS
 - SRL paper submitted
-
- Observations of 156 earthquakes of $M \geq 5.0$
 - February 14th 2023, 00:00 - 23:59 UTC, downsampled to 50Hz

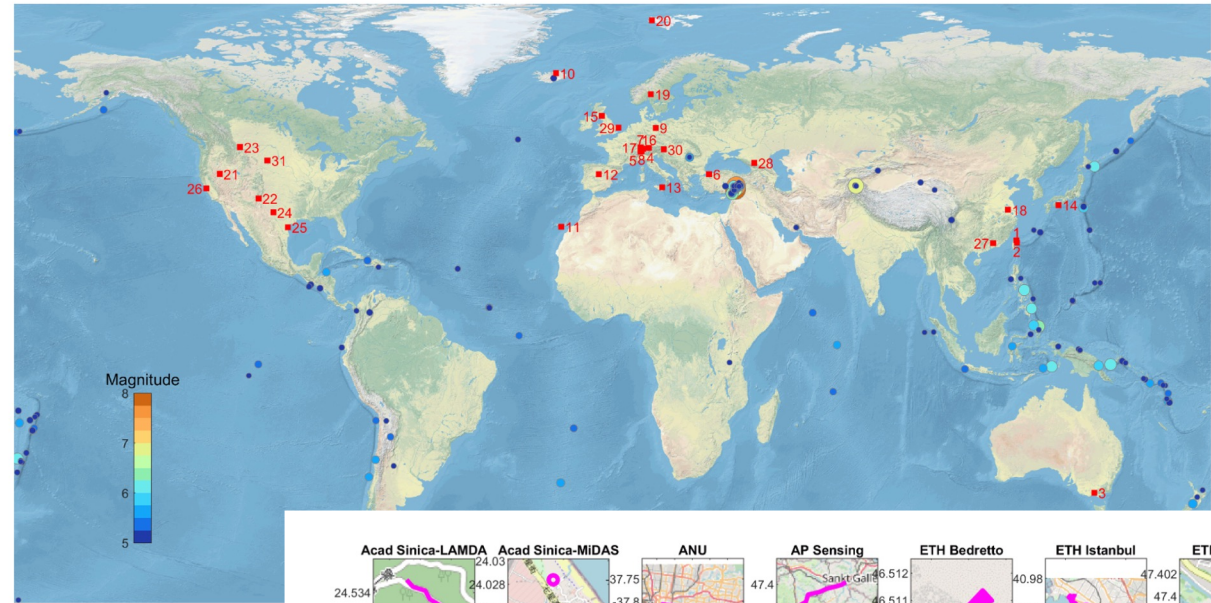


Figure 1. Map of systems contributing to Global DAS Month. Also shown are the locations of earthquakes with $M \geq 5$ that occurred during the month.

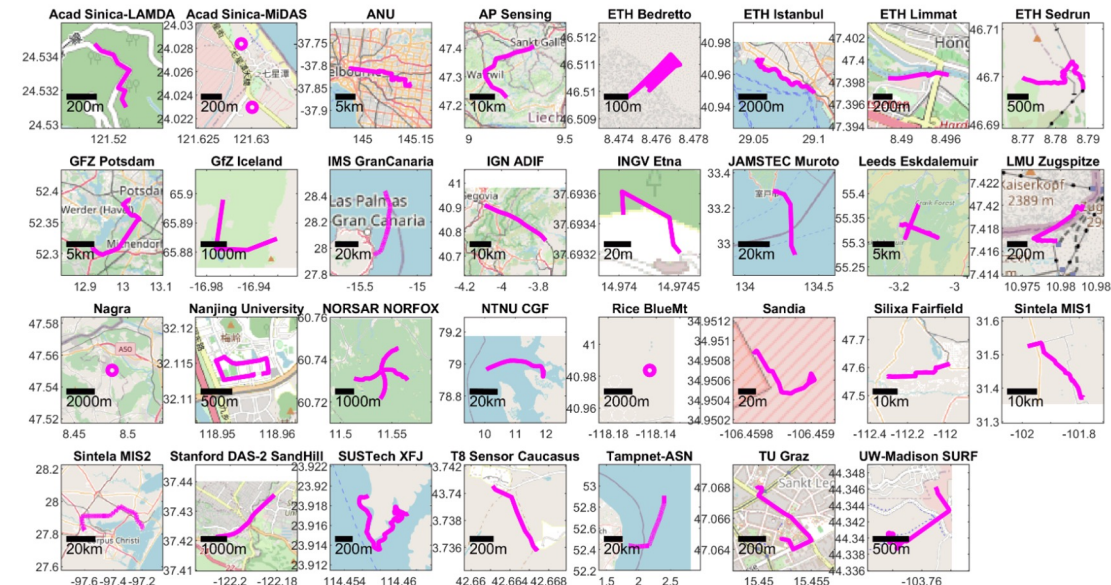
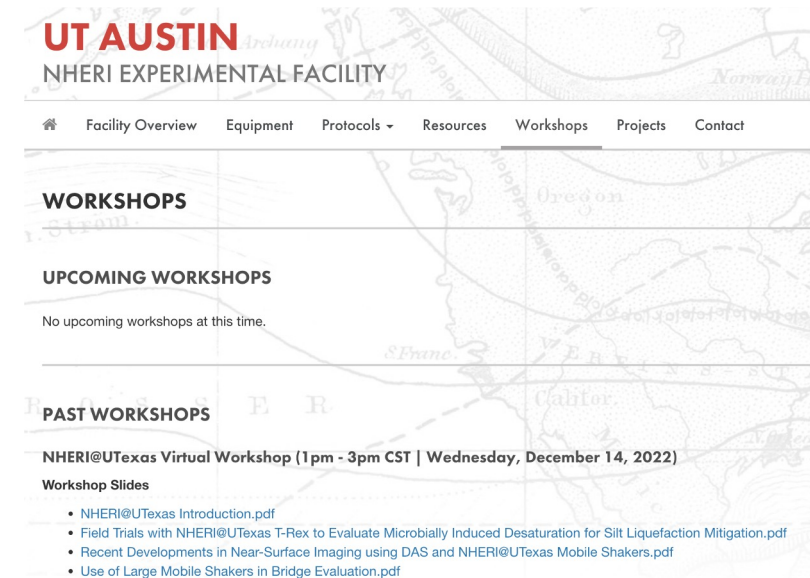


Figure 3. Individual layouts of the contributions. Boreholes are indicated as circles.

NHERI

- UT Austin NHERI Experimental Facility
- <https://utexas.designsafe-ci.org/>
- Workshops, resources, instrumentation
- Goals:
 - performing deeper, more accurate, higher resolution, 2D/3D subsurface geotechnical imaging
 - characterizing the nonlinear dynamic response and liquefaction resistance of complex geomaterials in situ
 - developing rapid, in-situ methods for non-destructive structural evaluation and soil-foundation-structure interaction (SFSI) studies



UT AUSTIN
NHERI EXPERIMENTAL FACILITY

Facility Overview Equipment Protocols Resources Workshops Projects Contact

WORKSHOPS

UPCOMING WORKSHOPS

No upcoming workshops at this time.

PAST WORKSHOPS

NHERI@UTexas Virtual Workshop (1pm - 3pm CST | Wednesday, December 14, 2022)

Workshop Slides

- NHERI@UTexas Introduction.pdf
- Field Trials with NHERI@UTexas T-Rex to Evaluate Microbially Induced Desaturation for Silt Liquefaction Mitigation.pdf
- Recent Developments in Near-Surface Imaging using DAS and NHERI@UTexas Mobile Shakers.pdf
- Use of Large Mobile Shakers in Bridge Evaluation.pdf

...and more!

- Instrumentation at academic institutions:
 - Colorado School of Mines
 - Penn State
 - Cal State-Long Beach
- Future events:
 - [ARMA Workshop on Distributed Fiber Optic Sensing for Geomechanical Applications](#) (June 25, 2023 | Atlanta, Georgia, USA)
 - [DAS RCN Workshop](#) (June 13-14, 2023 | Madison, Wisconsin, USA)
 - **Advances in earthquake and explosion monitoring using Distributed Acoustic Sensing Symposium at [2023 IUGG](#)** (July 11-20, 2023 | Berlin, Germany)
 - [Photonic Seismology: Lighting the Way Forward](#) (October 8-11, 2024 | Vancouver, B.C., Canada)

