## Instrumentation Services Overview

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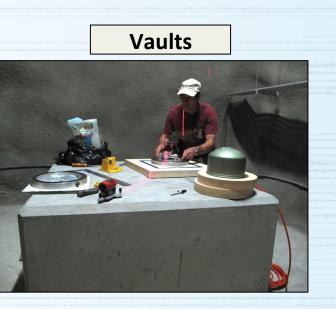
IRIS Instrumentation Services Technical Interchange Meeting

> Albuquerque, NM April 27-28, 2015



#### A Wide Range of Instrumentation Activities

#### Temporary to Permanent



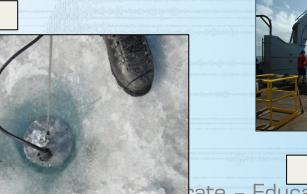












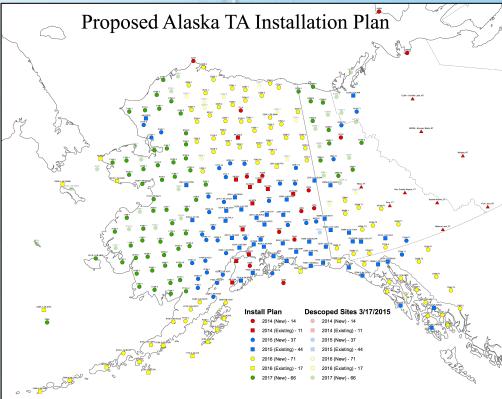


## Alaska Transportable Array

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- Beginning first major season in Alaska
- Key technologies
  - Power systems
  - Communications
  - Posthole sensor emplacement techniques





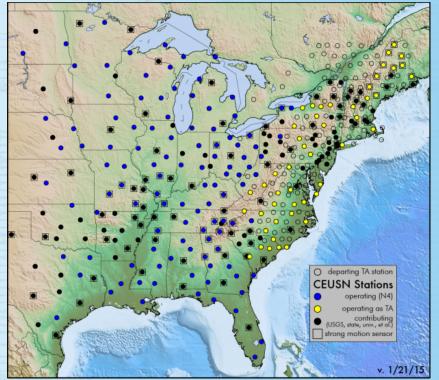
• Teams in Anchorage, New Mexico, and San Diego

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## L48 and CEUSN

- Rolling up the final TA footprint in the northeast
- Converting ~159 stations to long term operation as part of the Central and Eastern US Network
  - Over 125 stations converted





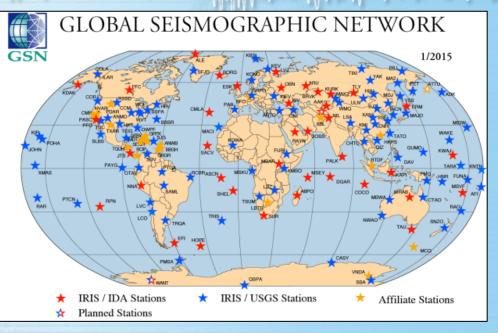
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## **Global Seismographic Network**

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- 153 globally distributed stations
- Just completed major, decadal review
- A new generation borehole
  Streckeisen sensor being developed
- Completed a major upgrade of all dataloggers
- Key efforts at USGS Albuquerque Seismological laboratory and Project IDA at UCSD







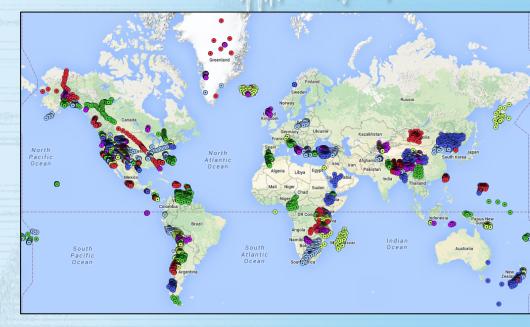
## PASSCAL

 Deployments on every continent for three decades

- Support for wide range of experiments, from broadband to active source
- Specialized support for Polar deployments



• Team at PASSCAL Instrument Center at New Mexico Tech

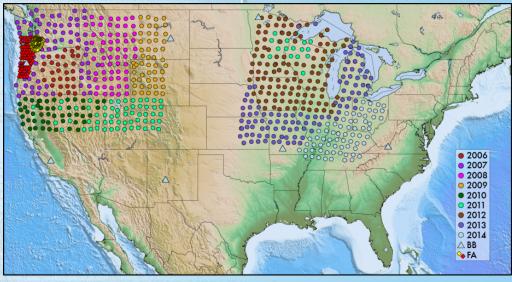


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## Magnetotellurics

- Support for both Transportable Array and Flexible Array MT activities
- MT-TA is continuing the SE US footprint
- Challenges with older
  instruments
- Team at Oregon State University





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#### Ocean Bottom Seismograph Instrument Pool

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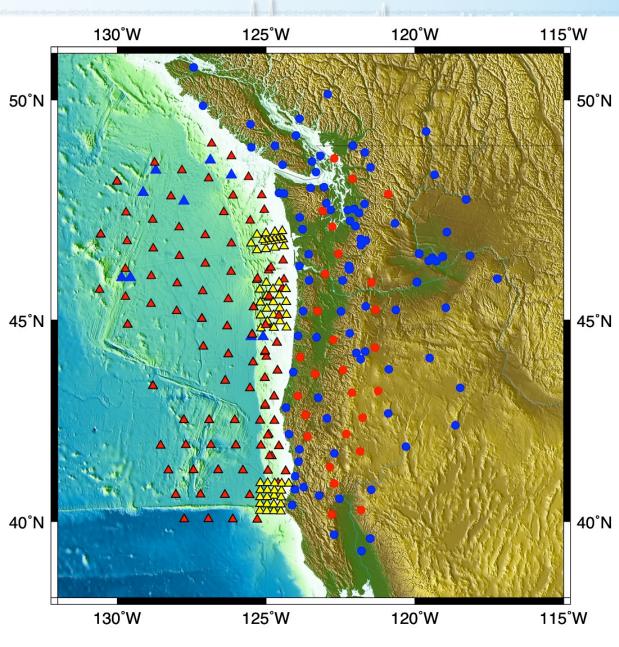
- Support experiments worldwide
- Broadband and short period
- Just completed 3<sup>rd</sup> year review of OBSIP Management Office

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- Key technologies
  - Packaging
  - Power systems
  - Timing

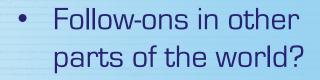


#### Cascadia Initiative



• 27 TA stations on shore

• Four years of OBS campaigns



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## **Other IS Activities**

- Greenland Ice Sheet Monitoring network (GLISN)
  - Ongoing O&M of six stations
  - Highly leveraged data from 32 stations



#### GEOICE

- Important project developing Large ..... N / Wavefields enabling technology
- Testing in the lab and field (Antarctica)
- Testing sensor-datalogger combo



## Emerging Activities

- Large N / Wavefields
  - Deploying instruments in larger numbers (large N) to observe wavefields without aliasing
  - Prototype activities underway
- Amphibious Array Future
  - Possible follow-on deployments to Cascadia Initiative
- Subduction Zone Observatory
  - Targeting a workshop in winter 2016
- RAMP
  - Exciting new technologies are out there



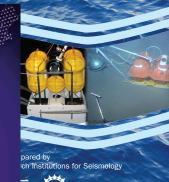
### **Our Funding and Support**

- SAGE, OBSIP, GLISN, GEOICE all at different stages of multi-year awards
- Funding generally strong, but generally flat (trend in federal funding)
- Although flat funding is stressful, we (IRIS) are still funded at over \$30 million / year of public funding
- Solid expectation of stable funding through 2018



A proposal prepared for The National Science Foundation

Program Solicitation: NSF



### IRIS

Proposal To NSF For Support Of SEISMOLOGICAL FACILITIES FOR THE ADVANCEMENT OF GEOSCIENCE AND EARTHSCOPE October 1, 2013– September 30, 2018

VOLUME 2

Budget and Supporting Documentation



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# Technical Interchange Meeting

- IRIS' first face-to-face Technical Interchange Meeting
- Goal: Share knowledge and experience
  - Gain efficiency
  - Enhance quality
- Contribute open and freely
- Meet your colleagues
- Provide feedback on how we should maintain momentum

IRIS 🎡

## Summary

- Collectively executing a widerange of instrumentation activities
- A mix of stable, well established activities and new activities
- Your efforts and your expertise are key to the success of the activities highlighted here – Thank You!



#### People Make it Happen

USArray's success over the first five years of the experiment is the result of the efforts of a large group of talented and enthusiastic people: the professionals who manage the program; the students, university professors, and regional network providers who contribute to siting efforts; the landowners who

permit stations to be installed on their property; the backhoe operators and electrical engineers who construct the stations and install the equipment; the contracting officers and purchasing agents who facilitate equipment acquisition; the data quality analysts and software developers who ensure data accessibility; the scientists from around the world who develop techniques to analyze the large volumes of data and provide new insights into how the earth works; and many, many others.

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