

**Workshop on  
Technical Specifications  
for Next Generation  
Polar Seismic/GPS Instrumentation**

**IRIS Perspective  
and  
Opportunities for IRIS-UNAVCO Collaboration**

**David Simpson, IRIS**

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# IRIS

- **the Consortium**

  - Forum for communication

  - Setting of community priorities

  - Development of community resources

  - International cooperation

  - Focus for interdisciplinary research

- **the Facility**

  - Core Programs**

    - GSN

    - PASSCAL

    - DMS

    - E&O

  - USArray/EarthScope**

- **the Corporation**

  - Administrative, fiscal, and legal structure



IRIS

## Science and Facilities

- *A Partnership* with NSF and the Research Community
- IRIS –
  - a non-profit Consortium
  - under Cooperative Agreement with NSF
  - with Governance by its University members:
    - implements facilities to support science
- “Arm’s length” link between facilities and science
  - NSF reviews and defines scientific programs
  - IRIS provides facilities to support science
  - NSF monitors IRIS plans and implementation
  - IRIS works with NSF and the research community to:
    - set priorities for facility development and evolution
    - linked to new opportunities for research



IRIS

# Science - Facility Interaction

IRIS develops, operates and manages *facilities* - funded through Cooperative Agreements with NSF Earth Science Division, Instrument and Facilities Program

- NSF reviews and defines scientific programs
- IRIS provides facilities to support science
- NSF monitors IRIS plans and implementation
- IRIS works with NSF and the research community to
  - set priorities for facility development
  - explore new research areas
- IRIS does not support in-house or external research
- NSF and DOE provide funds for instrument acquisition
- NSF supports IRIS to provide all O&M costs for community resources
  - » GSN, DMS, PASSCAL maintenance
- NSF supports PI's for implementation of individual PASSCAL field programs, analysis and research
- NSF and DOE scheduled experiment receive first priority for use



IRIS

## IRIS – some reasons for success

### •Planning

- Science Plan ---> Design Goals ---> Technical Specifications  
---> Implementation ---> O&M
- Flexibility and Responsiveness

### •Feedback

- Community governance and participation
- Close interaction between research needs and facility growth

### •Collaboration

- Within the scientific community
- With mission agencies
- With international partners

### •Stability

- 5–year Cooperative Agreements
- Standards, Formats, Quality Control
- Professional Staff



IRIS

## Some Lessons Learned

- Let Intellectual Drivers lead
- Set *Standards* and maintain *Quality*
- Provide *free and open access* to all data and services
- Differentiate between
  - Facilities and Science
  - Governance and Management
- Provide Competent and Responsive Management
  - Business and legal structure
  - Professional scientific, technical and business staff
- Maintain Strong Communications and Feedback between
  - Facilities and Science
  - Governance and Management
    - Community and Consortium
    - Consortium and NSF



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# IRIS & Polar Programs

## GSN stations in Antarctica and Arctic

South Pole (SPA) station O&M

Development of SPRESSO and QSPA

GSN stations at PMSA, CASY, ALE, BORG,  
NRIL, TIXI, BILL, etc

Collaboration with IMS and others at 6 -10  
additional Arctic and Antarctic sites

## PASSCAL Experiment Support

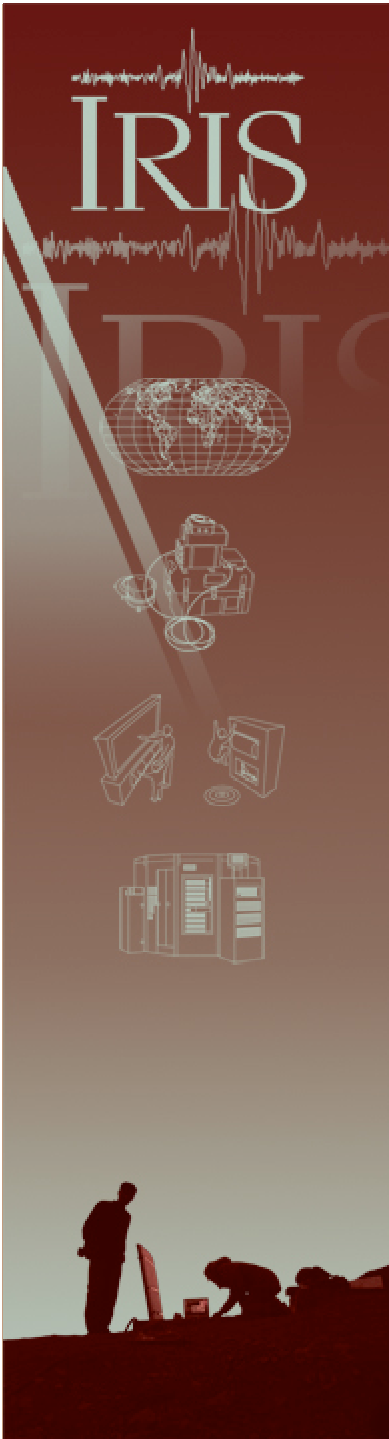
Instrumentation, training and field support for  
10's of PI funded experiments:

Seismic - active and passive - crust and lithosphere

Glaciology and Ice stream dynamics

Volcanology

Special instrumentation - disks, comms & streamers





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# IRIS 2006-2011 Proposal

## **Continuation and Enhancement of Polar Activities**

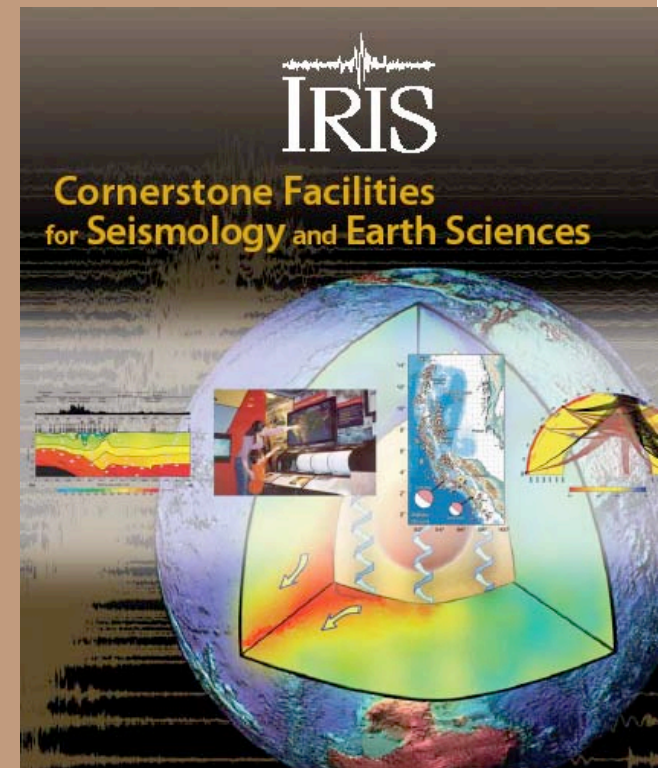
Continued O&M of QSPA and other GSN stations

Equipment for additional GSN-quality stations

Collaboration with UNAVCO on autonomous  
stations (this workshop)

## **Leveraged Opportunities**

**SPRESSO & Antarctic Array**







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## IRIS-UNAVCO Collaboration

- Community based Consortia with complementary expertise and technical capabilities in GPS/seismology
- Existing Cooperative Agreements with I&F
- Existing experience with Polar Programs
- Existing collaborative efforts:
  - GPS/GSN in Russia, Africa and elsewhere
  - EarthScope - PBO and USArray
  - Data exchange and backup
  - Education and Outreach
- Existing Expertise at Boulder, Socorro and ASL
- Existing Planning and IPY Opportunities
- Existing framework for Advocacy and Outreach
- Supported by IRIS-UNAVCO Boards
  - 2002 Declaration of Intent