### A Global Community

**The IRIS Mission** 

There are enduring reasons that seismology has fostered international collaboration among scientists, and society more generally, for over 100 years:

- International data exchange has always been essential to earthquake studies, and remains so today. IRIS has been instrumental in expanding this spirit of data exchange into the modern era of digital technology.
- In common with other geoscientists, seismologists often must collaborate with local scientists in "place-based" experiments around the globe.
- Seismology is of vital interest to developing nations for assessing and mitigating earthquake hazards. Training and capacity-building to cultivate support and local expertise are essential to long-term success.

Right now, the need for seismologists to serve society is even more widely recognized around the world:

- After the December 2004 Sumatra earthquake and tsunami, many nations recognize shortcomings of existing monitoring and warning systems.
- Development agencies can now document that natural disasters systematically and severely set back their projects.
- At three Earth Observation Summits, national governments have committed themselves to seeking societal benefits through the Global Earth Observing System of Systems (GEOSS).



In 2006, IRIS Members endorsed a three-part statement of the Consortium's mission:

- Facilitate and conduct geophysical investigation of seismic sources and Earth properties using seismic and other geophysical methods.
- Promote exchange of geophysical data and knowledge, both through use of standards for network operations, data formats and exchange protocols, and through pursuing policies of free and unrestricted data access.
- Foster cooperation among IRIS Members, Affiliates, and other organizations in order to advance geophysical research and convey benefits from geophysical progress to all of humanity.

Each new Foreign Affiliate expresses its support for these goals by endorsing the mission statement.



Detail from "Geohazard Map of the Balkans" prepared by Betim Muço and others as part of a project supported by the Civilian Research and Development Foundation.



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# IRIS Foreign Affiliates

The IRIS Consortium welcomes universities, academies of science, government agencies, and other nonprofit institutions outside of the United States as Foreign Affiliates.

IRIS Foreign Affiliates include collaborators in PASSCAL experiments, institutions hosting stations of the Global Seismographic Network, and users of services at the IRIS Data Management Center.

Over 125 institutions in locations around the world have already joined, in some cases transforming a transitory interaction with US seismologists into an ongoing series of collaborations.

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#### **Facilities for All Seismologists**

## **Responsibilities of Affiliation**



- Receive copies of all IRIS publications, including newsletters and annual reports.
- Use the IRIS Message Center to advertise job vacancies and announce significant developments.
- Become eligible for long-term loans of retired IRIS instrumentation.
- Faculty, staff, and students can participate in IRIS workshops.
- Send a representative to IRIS Member meetings.
- Faculty and staff can join IRIS committees and working groups.
- Download selected seismological software from IRIS, including:
- Portable Data Collection Center, developed by IRIS to facilitate organizing and archiving data
- Seismic Analysis Code, developed at Lawerence Livermore National Laboratory to process and visualize digital time series.
- Join the list of IRIS contacts that US Members use to find in-country collaborators for international experiments.

With funding from the National Science Foundation and other agencies of the US government, and in partnership with the US Geological Survey, IRIS built and operates facilities used by seismologists worldwide.

The Global Seismographic Network (GSN) includes 128 core stations distributed uniformly on all continents and over a dozen affiliated stations. Each has very broadband, high-dynamic-range sensors, state-of-the-art data acquisition, and real-time telemetry wherever feasible.

#### The Program for Array Seismic Studies of the Continental Lithosphere (PASSCAL) is a pool of

portable seismographic systems and support services for experiments ranging from thousands of sites recording high-frequency controlled sources over a few weeks to a few dozen broadband stations recording naturally occurring signals for years.

The Data Management Center freely distributes data from the world's largest open archive of continuous seismological waveforms, including data from all GSN stations, all PASSCAL experiments, networks funded by the USGS, and from each network of the FDSN.



From Hsin-Ying Yang and Shu-Huei Hung. 2005. Validation of ray and wave theoretical travel times in heterogeneous random media. *Geophys. Res. Lett.* 32:L20302, doi:10.1029/2005GL023501



IRIS's Portable Data Collection Center facilitates integration of regional network operators into the global community of seismologists.

There is no cost to join IRIS as a Foreign Affiliate, nor are affiliates required to participate in IRIS meetings in the United States or host IRIS meetings locally.

Nevertheless, IRIS Foreign Affiliates are expected to promote IRIS goals within their own countries. Promotional activities could involve working with agencies of an Affiliate's own national government for more open data policies or making geophysical data collected by their government freely available.

When seismologists from IRIS Member institutions in the United States visit the country of an IRIS Foreign Affiliate, they may seek collaborators to join them in field work and data analysis, or help obtain permission to import equipment or visit field areas.

When IRIS approaches international agencies such as the United Nations or the World Bank, it may ask Affiliates in regions of proposed activities to evaluate the local benefits and, if appropriate, to seek support of the Affiliate's national government.