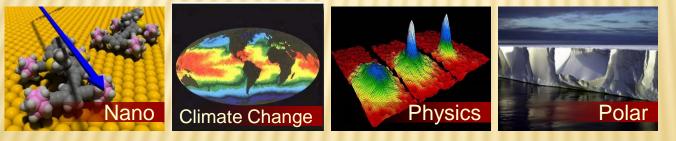


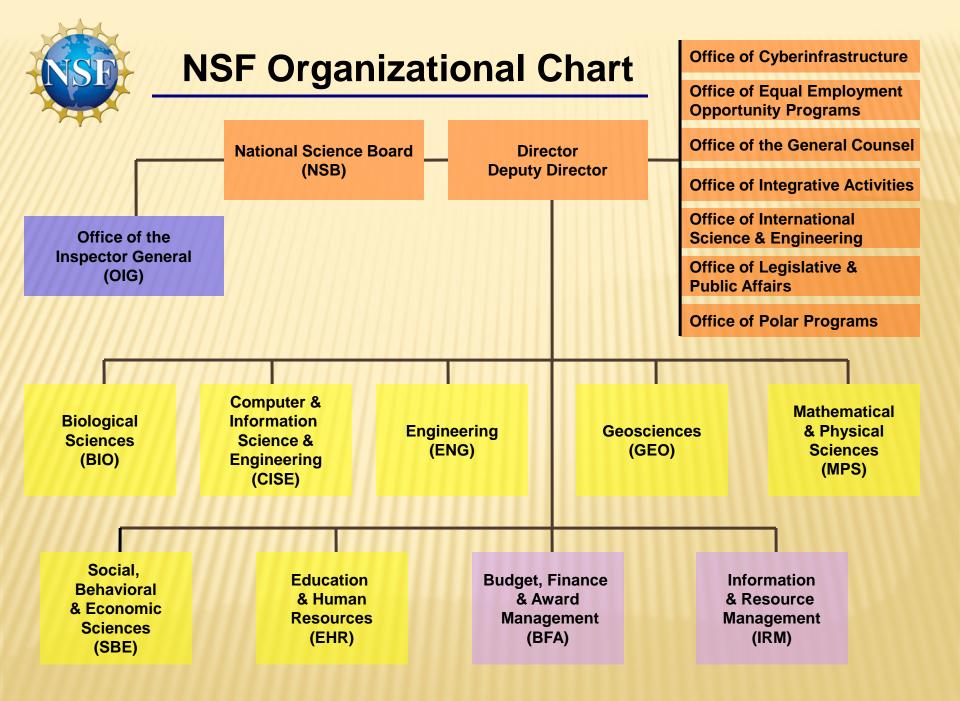
NATIONAL SCIENCE FOUNDATION Dr. Mark Suskin Executive Officer

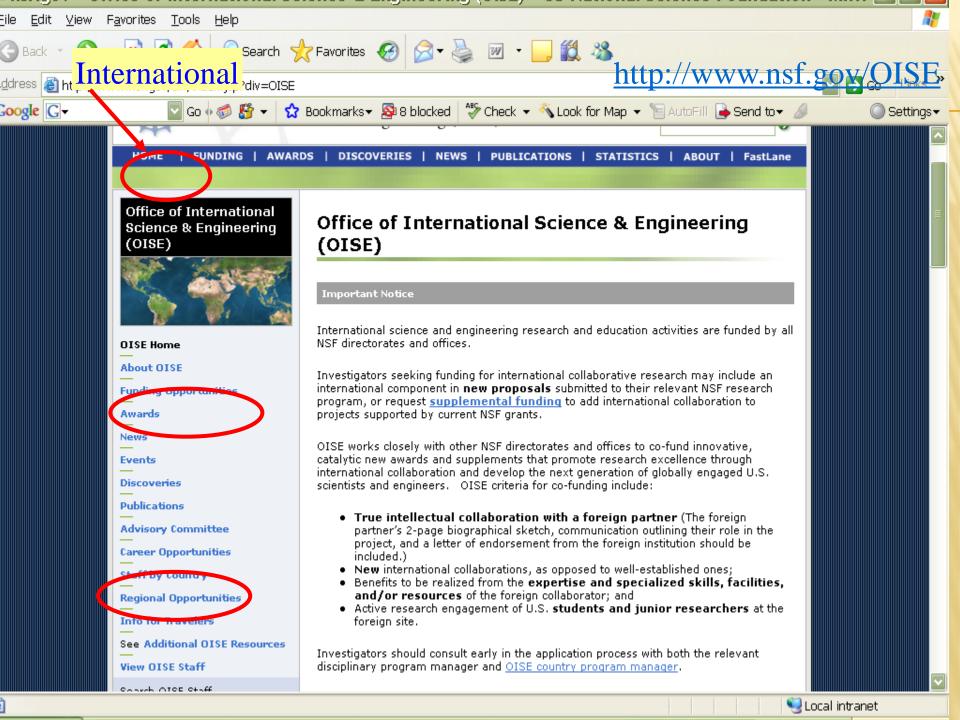
Office of International Science & Engineering

National Science Foundation



All this and so much more...





NSF Activities related to the Haiti, Chile, & Mexico Earthquakes RAPID Awards (Rapid Response Research Grant)

• NSF funded 40+ proposals for rapid research on earthquake and tsunami processes, seismic networks, structural engineering, geotechnical systems performance, critical infrastructure systems effects, and emergency response following the three earthquakes

Workshops (2010)

Haiti Reconstruction Workshop, Miami

- Joint funding NSF, USGS, NASA
- Sponsored by USAID, SDR, Dept. of State

Chile Research Needs Workshop, NSF

• Joint funding NSF-ENG, ONR, ITC-Americas, CONICYT

Haiti Research Needs Workshop, NSF

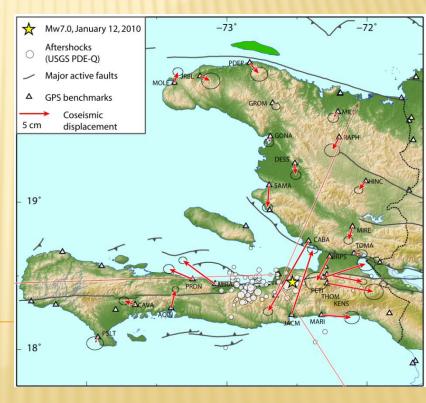
Funding NSF-ENG

Regional Caribbean-Central America Workshop, Costa Rica (this workshop)

• Joint funding NSF-OISE, NSF-EAR, USAID

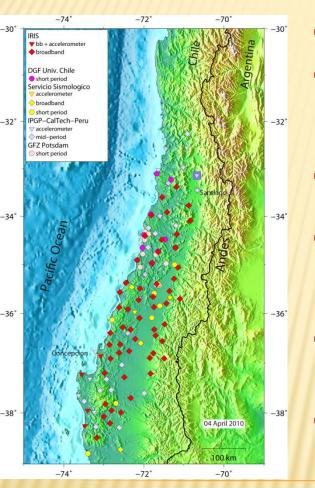
Checking GPS receiver on roof of Jacmel's police station. (courtesy E. Calais)





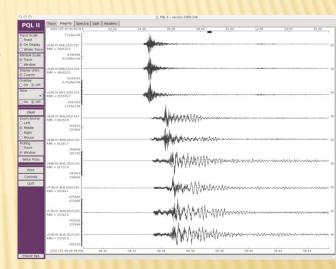
GPS Coseismic Offsets (courtesy E. Calais)

FEBRUARY 27, 2010 MW=8.8 CHILE EARTHQUAKE: NSF- RAPID SUPPORT FOR US PARTICIPATION IN AN INTERNATIONAL AFTERSHOCK DEPLOYMENT AND OPEN DATA EXCHANGE



US and Chilean teams are in the field now demobilizing 58 portable broadband seismic instruments from IRIS PASSCAL and EarthScope USArray along the 600 km rupture zone. Stations were installed in late March and service runs to collect data were conducted in May and July.

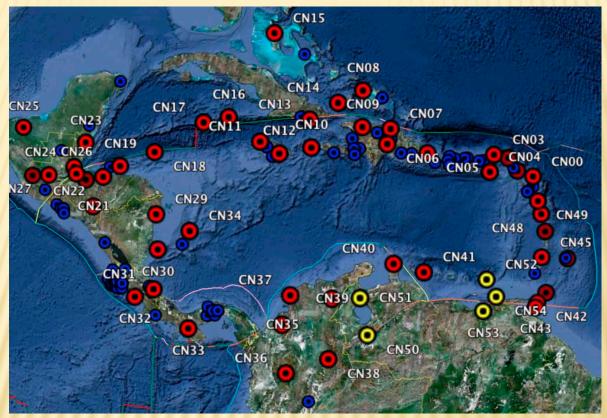
- A major breakthrough in international collaboration and open data exchange.
- 58 portable broadband seismometers installed throughout the aftershock zone by US university scientists and IRIS – PASSCAL staff in collaboration with the University of Chile.
- Station locations and data exchange coordinated with teams from France, Germany and UK.
- All country teams have agreed to make their data open and freely available through the IRIS Data Management System and other data centers.
- This collaborative international approach can serve as a model for future aftershock deployments around the world.
- A recently funded NSF MRI award will support continued collaboration between IRIS and the University of Chile with the installation of 10 permanent geophysical observatories as part of a new 60 station Chilean National Seismic Network.



North-south, east-west and vertical components from the July 14, 2010 Mw=6.5 aftershock in Chile as recorded by three RAPID-funded CHAMP stations. Data from these stations were transmitted via cell modem in real-time to the University of Chile and IRIS.



COCONet (Continuously Operating Caribbean GPS Observational Network)



- 50 new & 50 existing station continuous GPS & weather network for Caribbean multi-hazard science
- UNAVCO and UCAR lead institutions, with Purdue and U of Puerto Rico
- Multiple international partnerships between US and Caribbean scientists on research, network design and operations, and use of data for societal needs
- 5 year, \$6.7M project conceived in response to Haiti earthquake

Global Science Needs New Partnerships

MOU

NSF

- Mission: scientific research
- Primary client: US science community
- Funding to US institutions
- Awards based on merit review

Mission: foreign assistance

USAID

- Primary clients: developing countries
- Funding to foreign partner via US institution
- Bureaus, regions, and missions need buy-in

Benefits of Leveraged Funding



NSF Benefits:

- US science is more effective with fully engaged and funded international partners
- Foreign scientists possess local and regional knowledge
- Research questions span borders and are global in nature

USAID Benefits:

- Scientist-to-scientist relationships build capacity
- Development needs and perspective included in research effort
- Institutional linkages endure over time
- Scientists communicate when politicians don't or won't

NSF & USAID: Partners in Science for Development

- NSF and USAID are leveraging funding on a case-by-case basis
- Joint Activities in Latin America
 - Peru Workshop



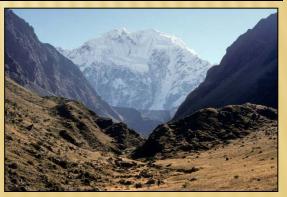
- Costa Rica Workshop
- Climate 1-Stop & SERVIR



 NSF and USAID are developing a mechanism to facilitate joint funding of awards







Washington, DC USA

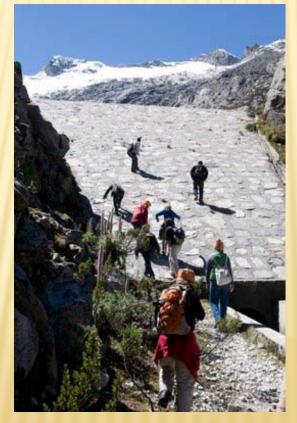
6th Regular Meeting of COMCYT

INTERNATIONAL WORKSHOP

ADAPTING TO A WORLD WITHOUT GLACIERS: realities, challenges and actions



Lima and Huaraz- July 7 to 15, 2009







Adapting to a World without Glaciers

Questions:

- What do you do when the water cycle changes?
- How do we begin to adapt to such a different future?

Outcomes:

 Research and action agendas for water, agricultural, and biodiversity sectors







Pastoruri Glacier, July, 2009

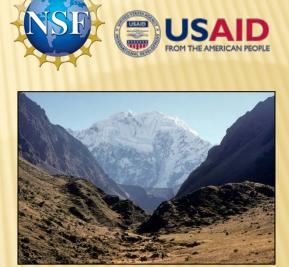
Activities Generated from Peru Workshop

- **NSF** funding 4 U.S. institutions over 3 years to investigate:
 - impact of glacial recession in tropical highlands on downstream watersheds and communities
 - resilience of livelihood systems
 - critical information for adaptive strategies and responses to global climate change

USAID - funding The Mountain Institute over 3 years to develop:

- Vulnerability assessments
- Stakeholder workshops
- Information and Outreach

<u>CONCYTEC -</u> Developing research agenda/strategy





Geophysical Hazards and Plate Boundary Processes in Central America, Mexico and the Caribbean GUATEMALANDHOUKAS CARIBBEAN SI GUATEMALANDHOUKAS CARIBAN

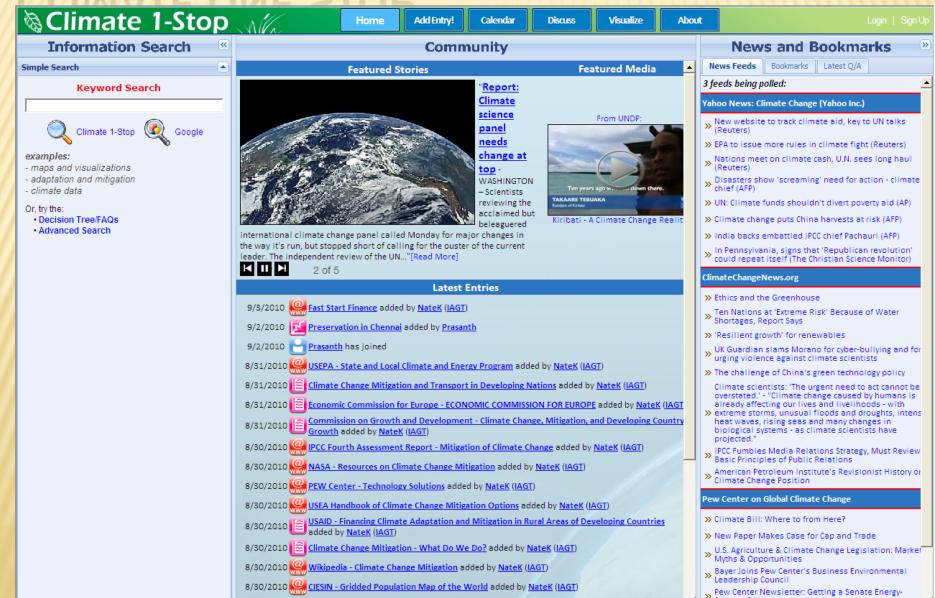
- Geophysical Hazards and Plate Boundary Processes
- Costa Rica October 24-28, 2010
- Co-Funded by NSF and USAID
- Workshop focus:



- Scientific issues that derive from the unique tectonic environment of the region
- Strengthen the regional infrastructure and science community for seismological research
- Generate products with immediate regional societal benefits



CLIMATE ONE STOP



Pan-American Advanced Studies Institute - PASI

- PANAMA Integration of Research on Climate Change and Hazards in the Americas: July 2010
- ARGENTINA Dynamics & Chemistry of the Upper Atmosphere: Oct 2010
- COSTA RICA Volcanic Hazards and Remote Sensing in Pacific Latin America: Jan 2011
- ECUADOR New Frontiers in Seismological Research: Sustainable Networks, Earthquake Source Parameters, and Earth Structure: July 2011

