International Research Collaboration: Opportunities and Resources at NSF

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Program Director
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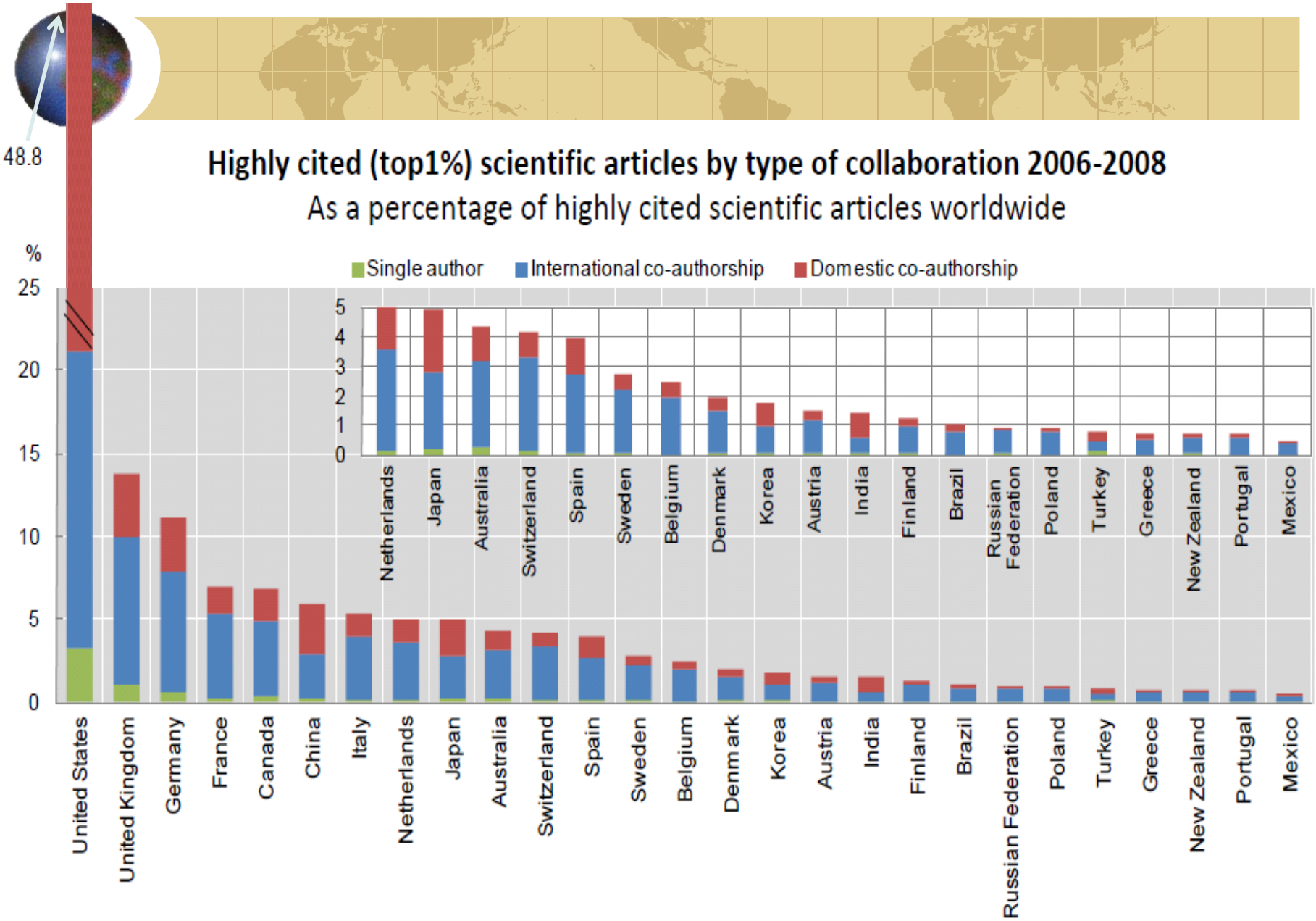
NSF and International Engagement

"The nation's commitment to research will … take on a more globally connected context as the major issues and problems we face know no boundaries."

Subra Suresh
Director NSF

October, 2012



Source: OECD calculations, based on Scopus Custom Data, Elsevier, December 2009

Statlink: http://dx.doi.org/10.1787/836087047406

Global R&D Spending to Increase 5.2% to $1.4 Trillion

Growing Worldwide Emphasis on Basic Research

Dynamic Scientific Landscape

Worldwide R&D Investment Growing

Global R&D expenditures by region in 2009

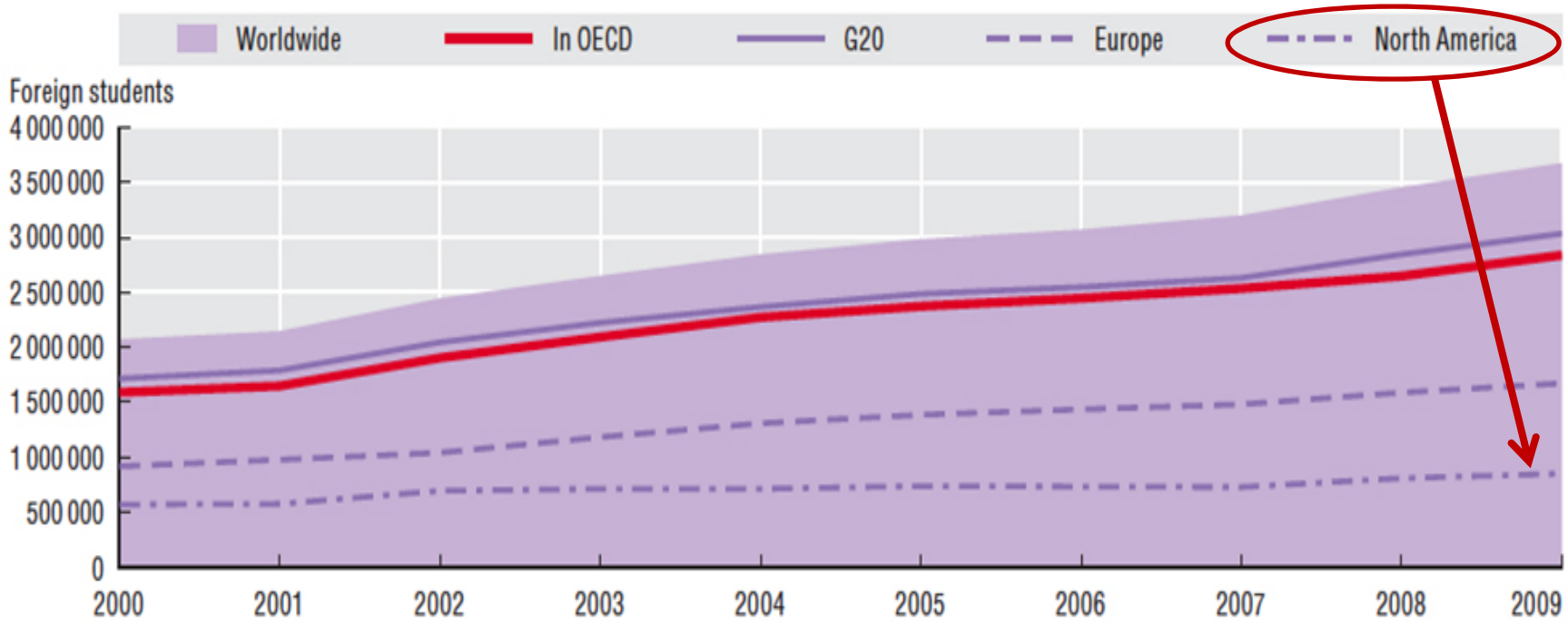
World Total = $1,276 U.S. PPP dollars (billions) **(PPP = purchasing power parity)**

Source: Science and Engineering Indicators

North American Student Mobility is Flat

Figure 1.20. **Evolution in the number of students enrolled outside their country of citizenship (2000, 2009)**

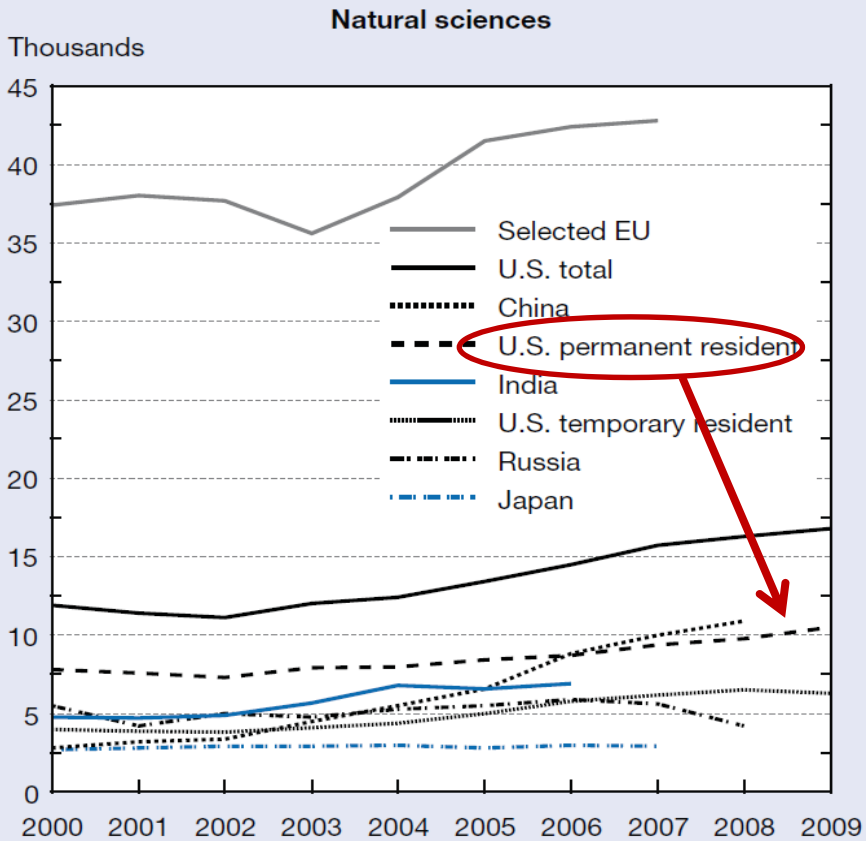
This figure shows the growth of foreign tertiary student enrolment, by regional grouping, over the past nine years.

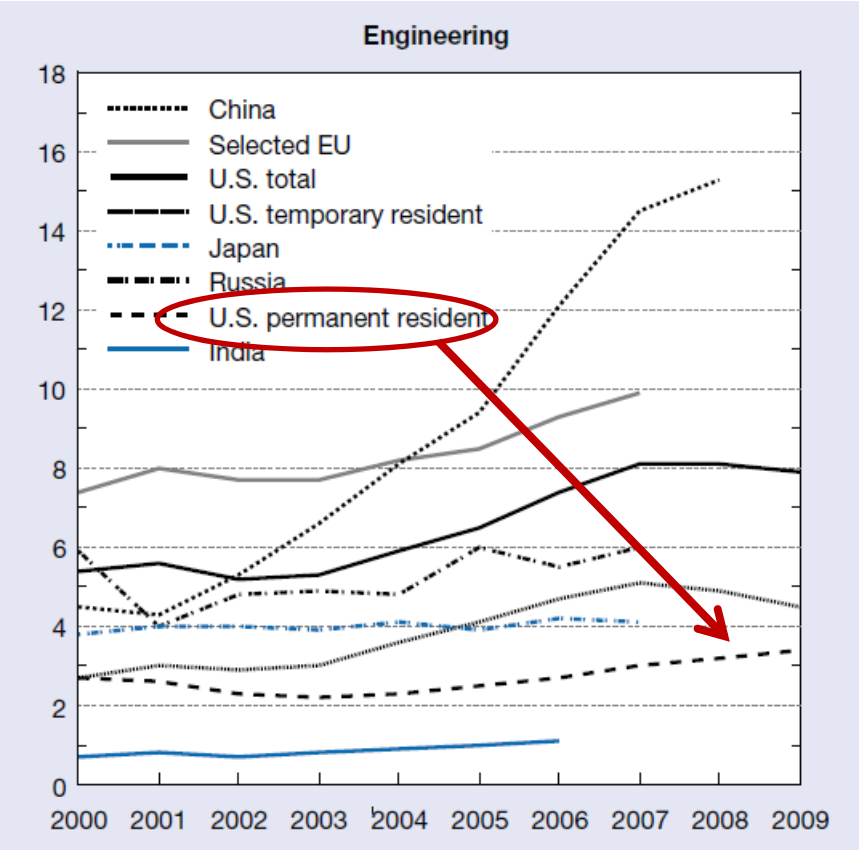


Source: OECD (2011), *Education at a Glance 2011*, Table C3.5, available at http://dx.doi.org/10.1787/888932464543.

U.S. STEM Graduate Degrees are Flat

Doctoral degrees in natural sciences and engineering, by selected region/country: 2000 to most recent year





NOTE: Natural sciences include physical, biological, environmental, agricultural, and computer sciences, and mathematics.

SOURCES: Organisation for Economic Co-operation and Development, Education Online database, http://www.oecd.org/education; and national statistical offices.

Science and Engineering Indicators 2012

Drivers for International Research Collaboration

Resources

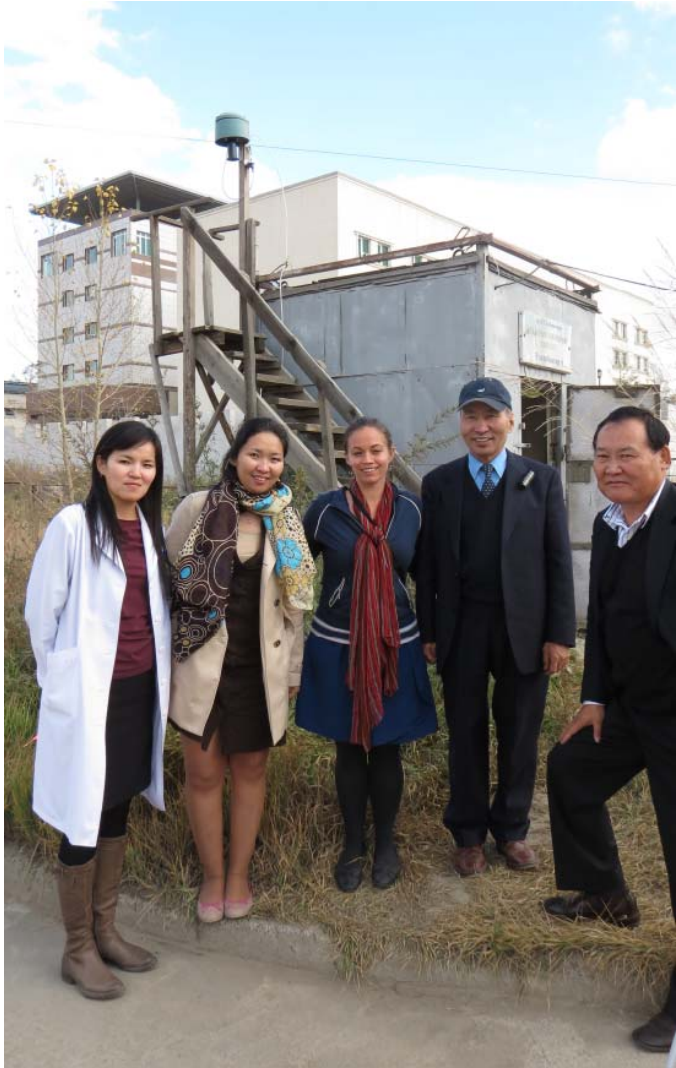
- **Access** to unique facilities and equipment
- **Share** costs and risks
- **Exchange** techniques and insights

Capacity

- **Strengthen / Expand** knowledge base
- **Attract** talent
- **Enhance** S&T-led economic performance

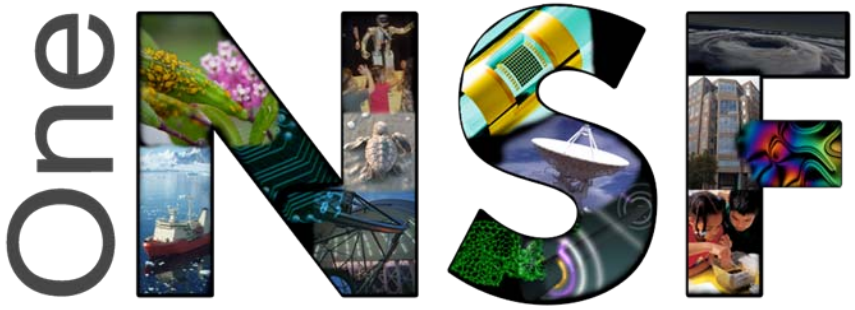
Objectives

- **Address** national, transnational or global problems
- **Foster** science diplomacy
- **Access** foreign markets
- **Pursue** personal / professional goals



NSF Embraces Core Values for International Engagement…

- Intellectual partnerships and mutual benefit are the norm
- U.S. students and junior researchers engaged internationally
- Global networks link expertise and resources are common



NSF Programmatic Organization

NSF Office of the Director

- Office of Cyberinfrastructure (OCI)
- Office of Integrative Activities (OIA)
- Office of International Science and Engineering (OISE)
- Office of Polar Programs (OPP)

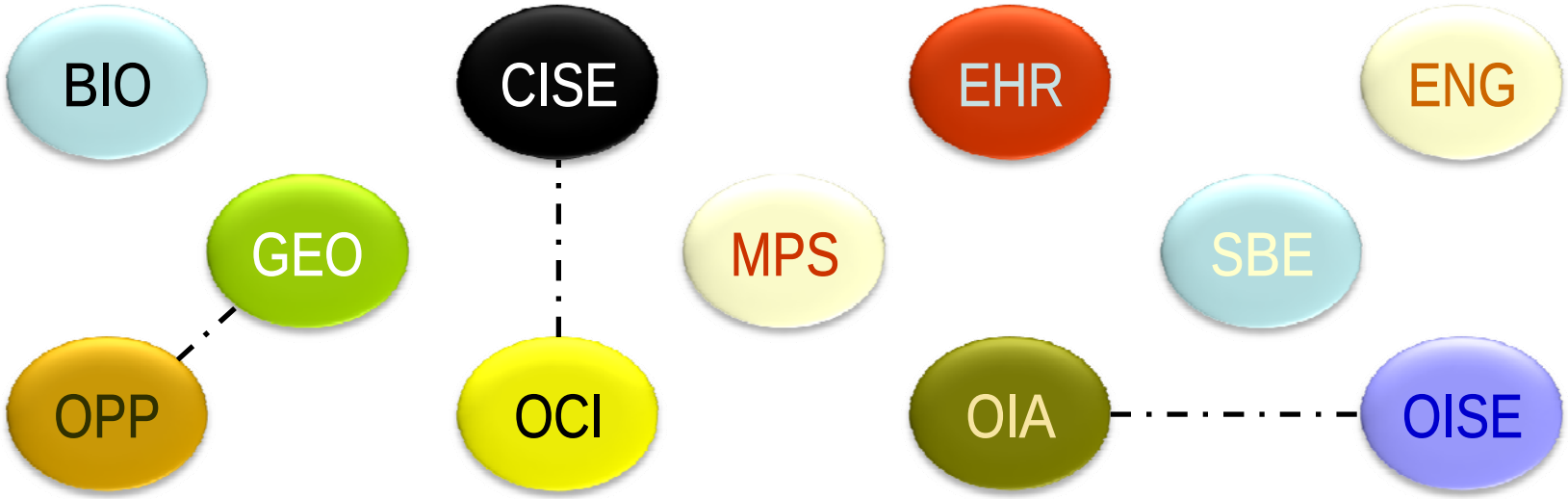
NSF Directorates

- Biological Sciences (BIO)
- Computer and Information Science and Engineering (CISE)
- Education and Human Resources (EHR)
- Engineering (ENG)
- Mathematical and Physical Sciences (MPS)
- Geosciences (GEO)
- Social, Behavioral and Economic Sciences (SBE)

NSF Funding for International Activities

Most international research and education activities are **funded by NSF disciplinary programs**:

- As part of regular awards
- As supplements to regular awards

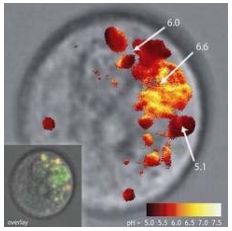


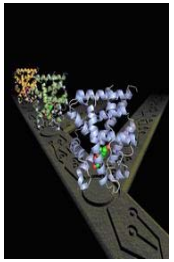
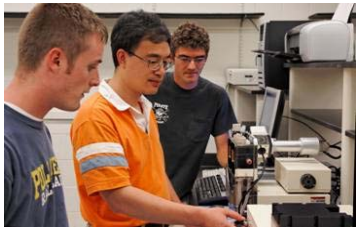
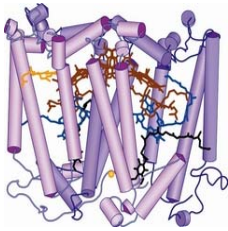
These 2012 NSF programs include an explicit international dimension…

BIO	Metabolomics; Dimensions Of Biodiversity
CISE	Collaborative Research In Comp Neuroscience; GENI
GEO	Integrated Ocean Drilling Project; Belmont Forum
EHR	GRF Nordic Supplement; IGERT Traineeship
ENG	Earthquake Research; Synthetic Biology; Nanotechnology
MPS	ICC; MWN; Astronomical Observatories
SBE	S&T Statistics; Science Of Science And Innovation Policy
OISE	Catalyzing New International Collaborations
OPP	Antarctica And Arctic Research And Education
OCI	International Research Network Connections

These NSF programs have one or more external partners…

- Basic Research to Enable Agricultural Development (BREAD)
- International Collaboration in Chemistry
- Materials World Network
- Dimensions of Biodiversity
- Partnerships for International Research and Education (PIRE)
- G8 HORCS/Belmont Forum



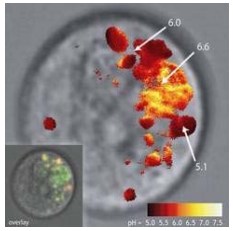
NSF programs for an internationally engaged workforce

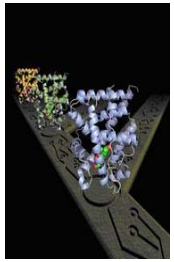
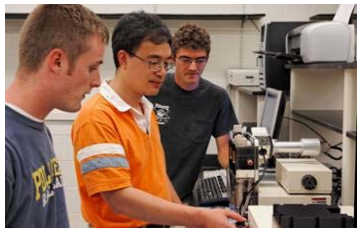
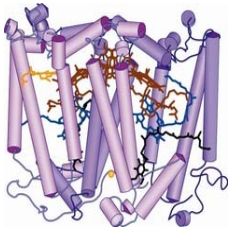
- (International) Research Experiences for Undergraduates*
- Graduate Research Fellowship Program
- Integrative Graduate Education and Research Traineeship Program
- East Asia Pacific Summer Institutes
- Pan-American Advanced Studies Institutes
- (International) Postdoctoral Research Fellowship Program *

*Alignment of OISE programs with NSF-wide programs

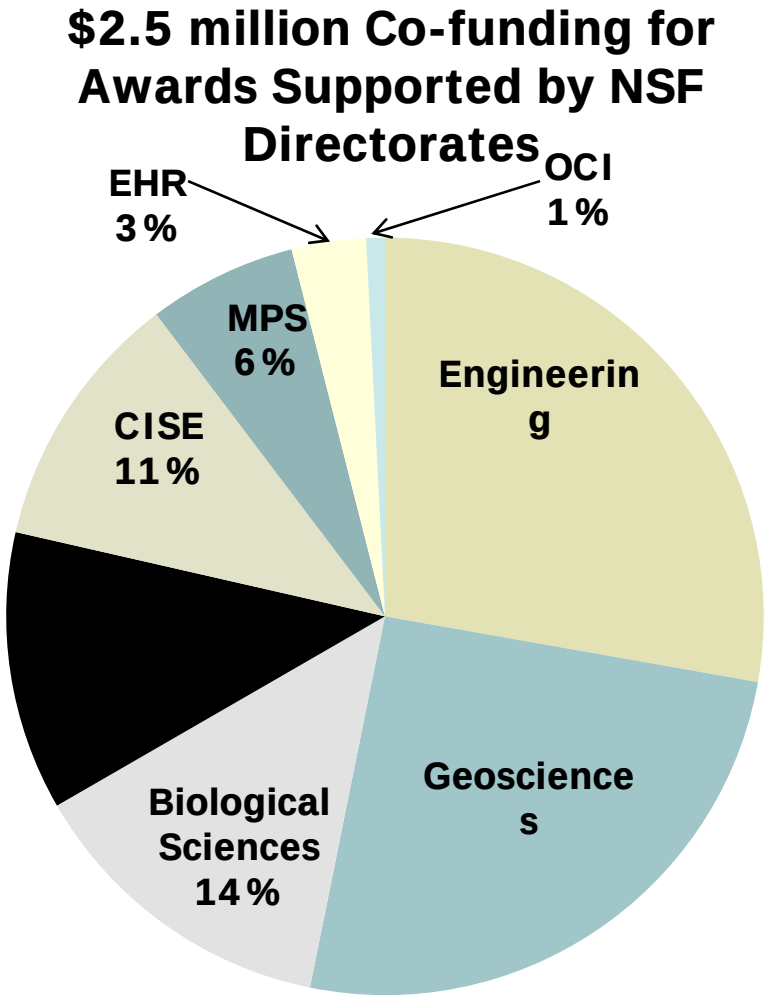
New Tools for International Engagement

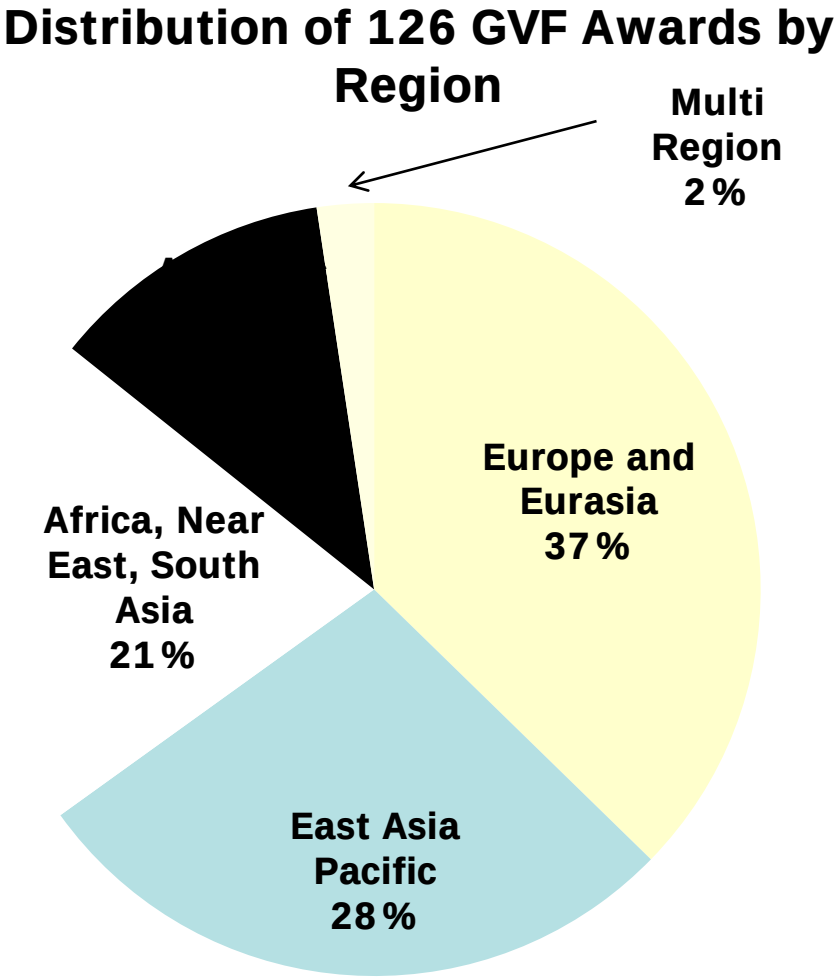
- Global Venture Fund
- Science Across Virtual Institutes (SAVI)
- Partnerships for Enhanced Engagement in Research (PEER-Science)



Global Venture Fund 2012





SAVI catalyzes the development of virtual institutes to facilitate research collaboration; networking; and technical exchanges between U.S. students, post docs, and junior faculty and their international partners.

SAVI

NSF Science Across Virtual Institutes

QUICK LINKS
PROJECTS
STAFF
PUBLICATIONS

Partnerships for Enhanced Engagement in Research (PEER)

PEER is expanding! Our international collaborative grants program now has two separate components, each with its own topical focus areas, eligibility requirements, application procedures, and deadlines.

PEER

PEER Science | PEER Health

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PEER Health: peerhealth@nas.edu

Telephone enquiries for both programs:
+1-202-334-3345

Which PEER program is right for you?

PEER Science provides support for researchers in 87 eligible countries worldwide on a wide range of development-related topics, including food security, climate change, water, biodiversity, disaster mitigation, and renewable energy, to name just a few. Applicants to PEER Science must be working in collaboration with a U.S. partner who holds an active award from the National Science Foundation (NSF). View more information about PEER Science.

PEER Health provides support for researchers in 33 eligible countries on implementation science projects in support of country-specific health priorities. The 2012 program cycle focuses on Child Survival (with applications accepted from all eligible countries), and special funds are also available to support projects in Indonesia on priority health topics. Applicants to PEER Health must be collaborating with a partner supported by the U.S. National Institutes of Health (NIH). View more information about PEER Health.

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International Collaboration & OISE Cofunding

In addition to the solicitations listed below, investigators may also include international components in **new proposals** submitted to **any relevant NSF program**, or request **supplemental funding** for projects already supported by NSF. Investigators should consult early in the application process with both the disciplinary program manager and OISE country program manager. OISE works with all NSF areas to co-fund new awards and supplements that meet these criteria:

- **True intellectual collaboration with foreign research partner** (Foreign partner's 2-pg biosketch & communication outlining project role must be included. If foreign institution will provide resources, also include an endorsement letter from the foreign institution.)
- **New** international collaborations, as opposed to well-established ones;
- Clear benefit to U.S. science/engineering community from **expertise, facilities, or resources** of the foreign collaborator; and
- Active research engagement of U.S. **students and junior researchers** at the foreign site.

OISE **does not** provide support for U.S. scientists and engineers to participate in international conferences; nor does it provide support for such meetings. OISE **can** support workshops that immediately precede or follow a larger-scale conference when they add an international dimension focused on building research collaboration (see NSF Grant Proposal Guide II.D.8 & 9).

Programs and Funding Opportunities

Key: C Crosscutting | N NSF-wide

Advancing NSF's International Interests

Internal

External

Supporting NSF Directorates/ Offices

Oversight

Engaging U.S. Research Community

Leveraging Resources and Expertise

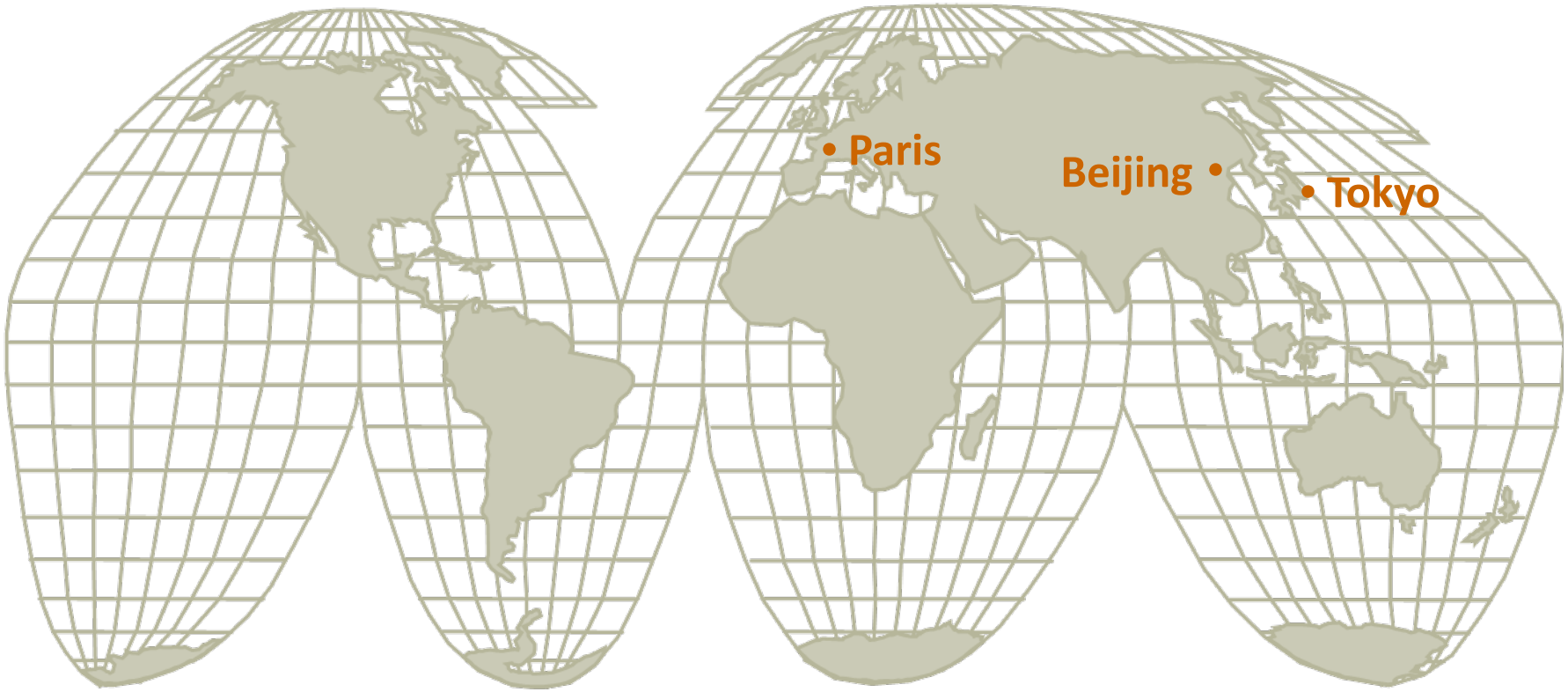
Strengthening Partnerships With Foreign Counterparts

Testing New Models

Data

U.S. Government Agency

NSF Overseas Offices



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For Further Information

http://www.nsf.gov/div/index.jsp?org=OISE

Thank You!