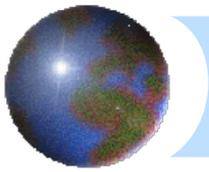


International Research & Education Collaboration: Opportunities & Resources at NSF



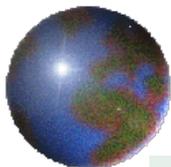
NSF Grants Conference
1 March 2016

Chuck Estabrook
Office of International Science & Engineering (OISE)
cestabro@nsf.gov



Take Home Messages

- NSF supports international collaboration *when it enhances proposed research and education*
 - NSF funds U.S. side of collaboration
- Research directorates provide most support for international
 - OISE seed funds, student programs, PIRE
- NSF has growing number of strategic partnerships to facilitate international collaboration
- Review criteria unchanged
 - Intellectual Merit
 - Broader Impact



Global R&D Expenditures by Region

Figure O-5
Global R&D expenditures, by region: 2011

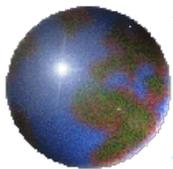
Billions of U.S. PPP dollars



PPP = purchasing power parity.

NOTES: Foreign currencies are converted to U.S. dollars through PPPs. Some country figures are estimated. Countries are grouped according to the regions described by *The World Factbook*, available at www.cia.gov/library/publications/the-world-factbook/index.html.

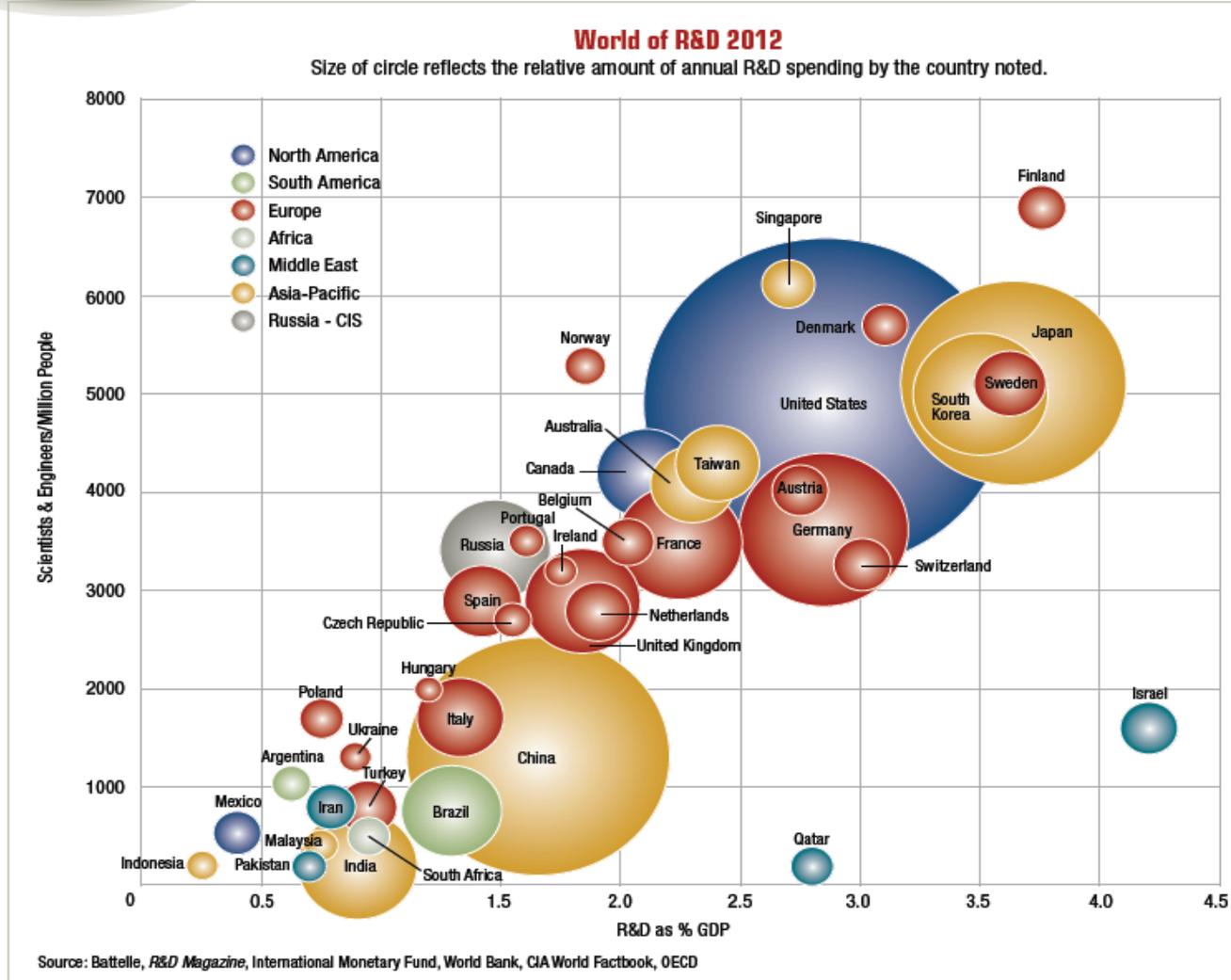
SOURCES: National Science Foundation, National Center for Science and Engineering Statistics, estimates (August 2013). Based on data from the Organisation for Economic Co-operation and Development, *Main Science and Technology Indicators* (2013/1); and the United Nations Educational, Scientific and Cultural Organization Institute for Statistics, <http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders.aspx>, table 25, accessed 2 August 2013.

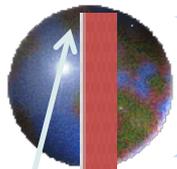


Global Research and Development Funding



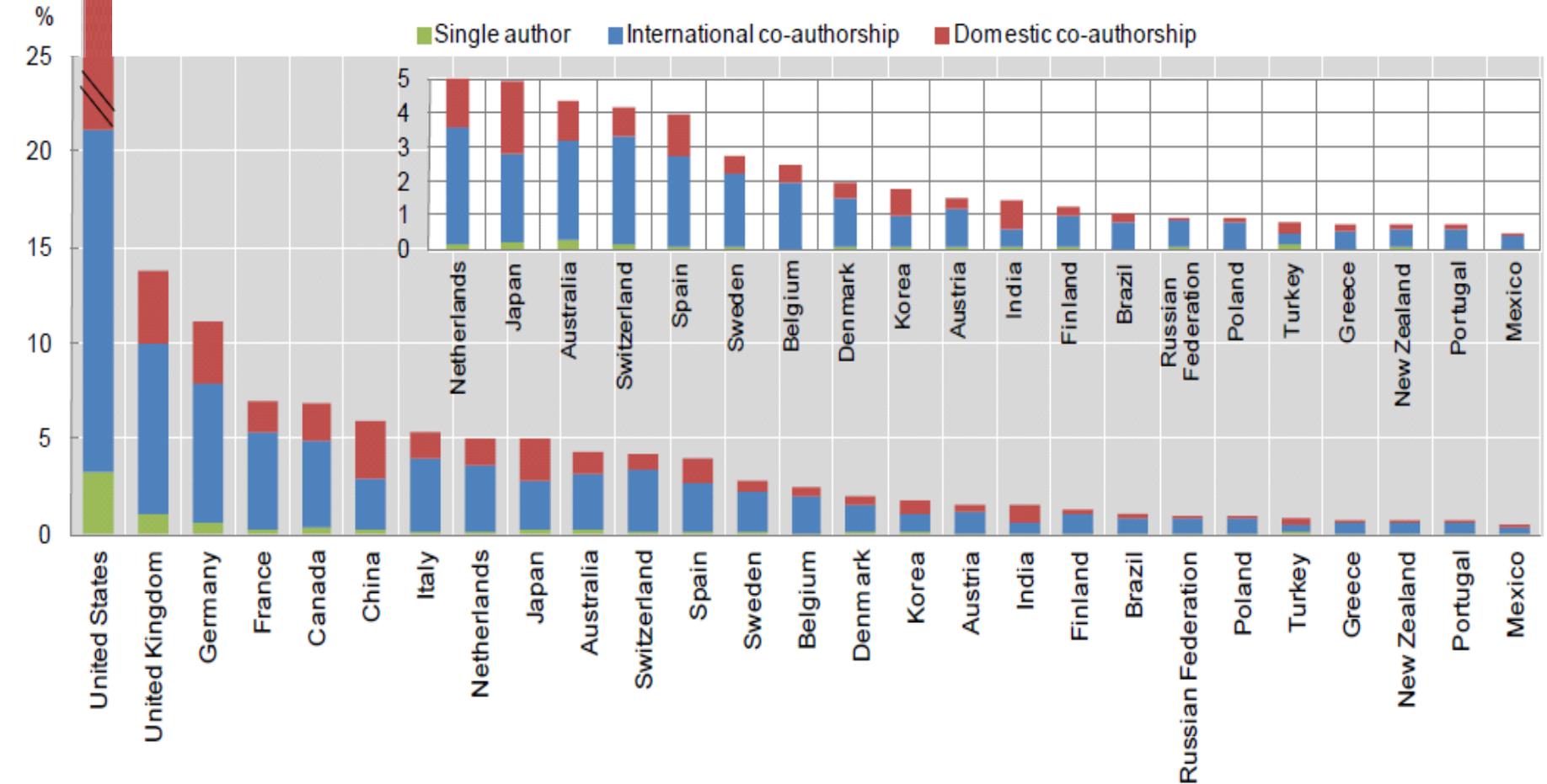
2013 Global R&D Funding Forecast





US Researchers Less Likely to Co-Publish Internationally

Highly cited (top1%) scientific articles by type of collaboration 2006-2008
As a percentage of highly cited scientific articles worldwide



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

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



Drivers for International Collaboration

Resources

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

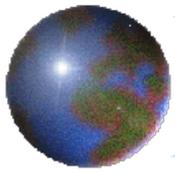
Capacity

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

Objectives

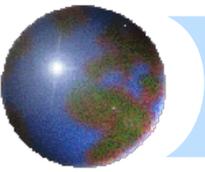
- **Enhance** research and education
- **Leverage** complementary resources
- **Address** national, transnational challenges
- **Advance** personal/professional goals





Core Values for International

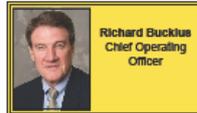
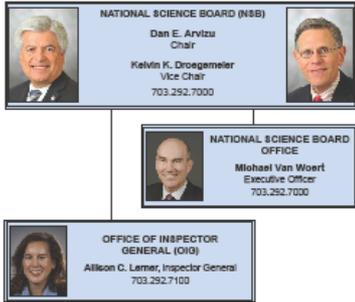
- Intellectual Collaboration
 - Engage researchers in-country
 - Mutual benefit where possible
- Leveraging complementary resources
- Young scientist/practitioner involvement
- Be true to NSF's mission
 - Basic research and education
 - Not capacity building
- NSF funds U.S. side of collaboration
 - Limited exceptions



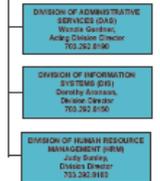
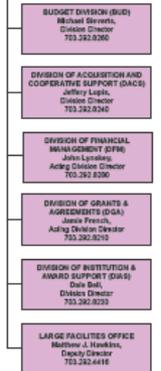
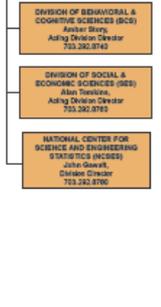
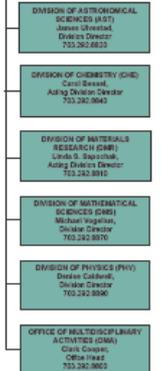
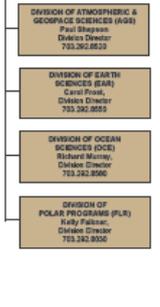
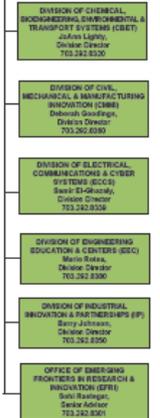
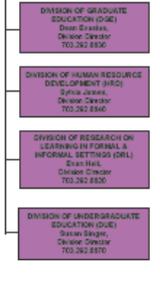
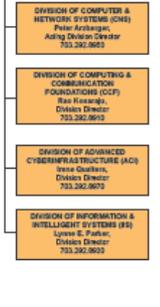
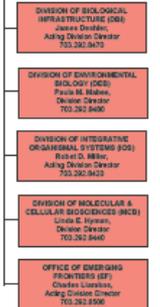
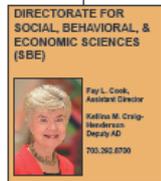
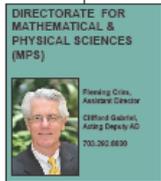
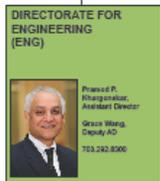
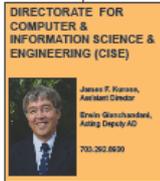
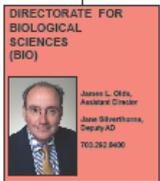
NSF Organization Chart



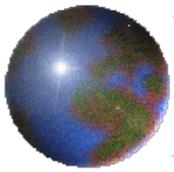
NATIONAL SCIENCE FOUNDATION



OISE



National Science Foundation
 4201 Wilson Boulevard
 Arlington, Virginia 22230
 TEL: 703.292.5111 | FIRS: 800.877.8339 | TDD: 800.281.8749



OISE Organization Chart

**ADMINISTRATIVE
MANAGEMENT**

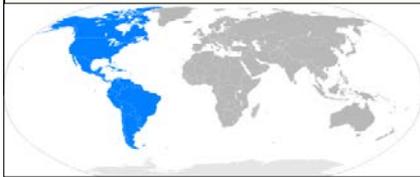
**OFFICE HEAD
DEPUTY HEAD**

OVERSEAS OFFICES

**BEIJING – NANCY SUNG
BRUSSELS – SONIA ORTEGA
TOKYO – OFFICE HEAD**

**GLOBAL
INITIATIVES**

AMERICAS



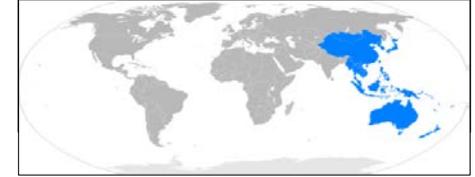
**EUROPE AND
EURASIA**

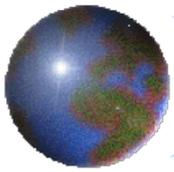


**AFRICA, NEAR EAST,
AND SOUTH ASIA**

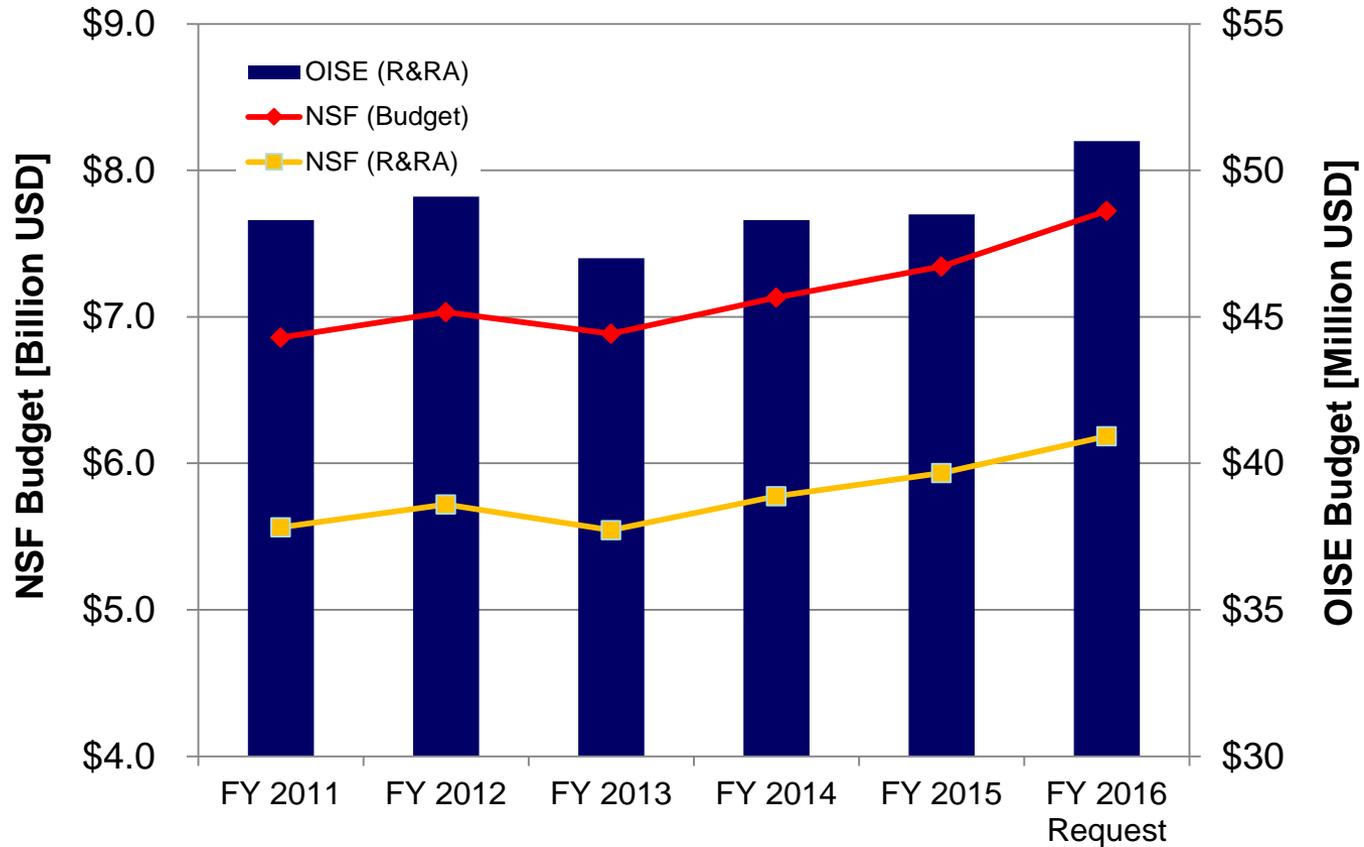


**EAST ASIA AND
PACIFIC**

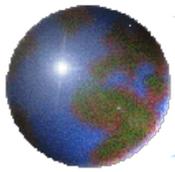




NSF Budget (Research & Related Activities)



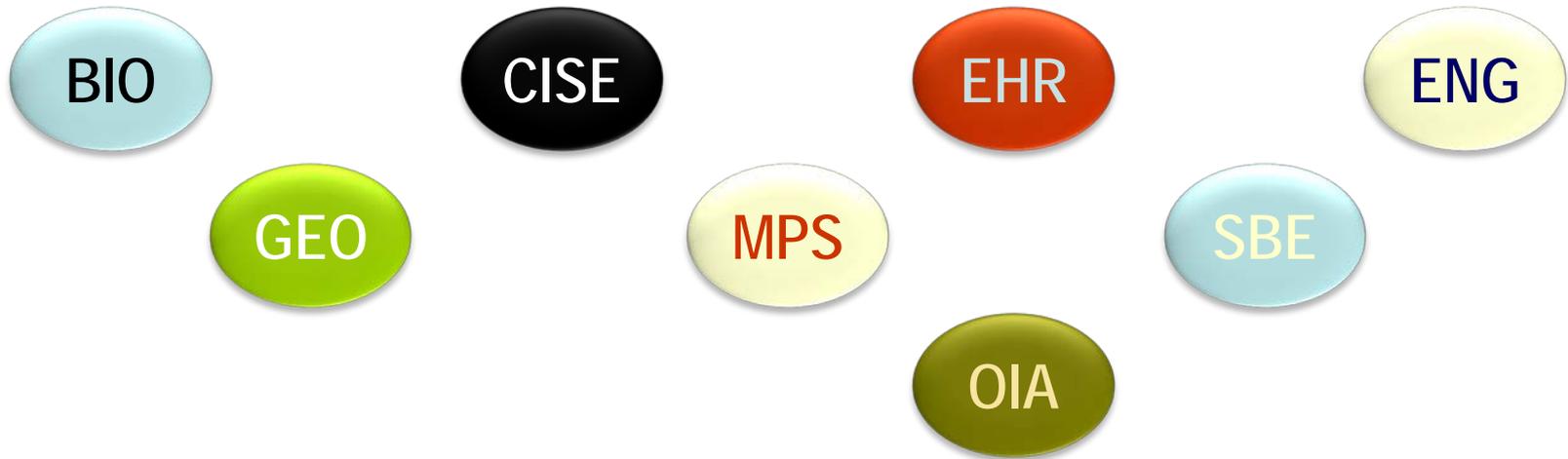
R&RA – Research & Related Activities

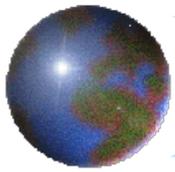


NSF Funding for International Activities

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

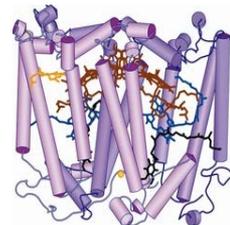
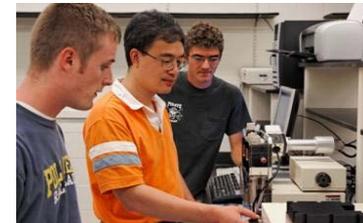
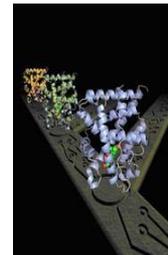
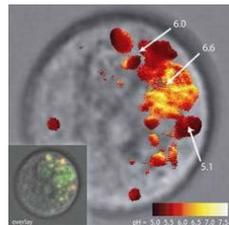
- As part of regular awards
- As supplements to regular awards

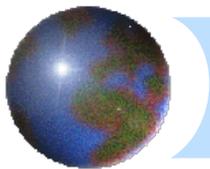




Some Special International Funding Opportunities

- Dimensions of Biodiversity
- Collaborative Research in Computational Neuroscience
- Belmont Forum Collaborative Research Action
- Several Directorates/Division (SBE, GEO, BIO/DEB) offer lead agency agreements
- Partnerships for Enhanced Engagement through Research (PEER)





OISE Programmatic Activities

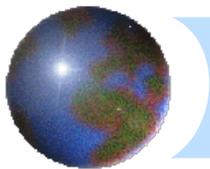
Partnerships – Tools for International Research

PIRE	Partnerships for International Research and Education	\$ 19 M
CNIC	Catalyzing New International Collaborations	\$ 1.5 M
GVP	Global Venture Fund	\$ 3.2 M
SAVI	Science Across Virtual Institutes	\$ 1.3 M
PEER	Partnerships for Enhanced Engagement in Research (USAID/NAS; NIH, NASA, USDA, USGS, Smithsonian)	

Talent Development – Developing a Globally Engaged Workforce

IRES	International Research Experiences for Students	\$ 5.0 M
EAPSI	East Asia & Pacific Summer Institutes	\$ 1.6 M
IRFP	International Research Fellowship Program (Postdocs)	\$ 3.0 M
GROW	Graduate Research Opportunities Worldwide (Grad-students)	
iREU	International Research Experiences for Undergraduates	
STEM-AGI	STEM Advanced Graduate Institutes (Global PASI)	

Type: Stand-alone **Co-funding Program** **Under Consideration**



OISE Programmatic Activities

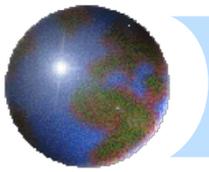
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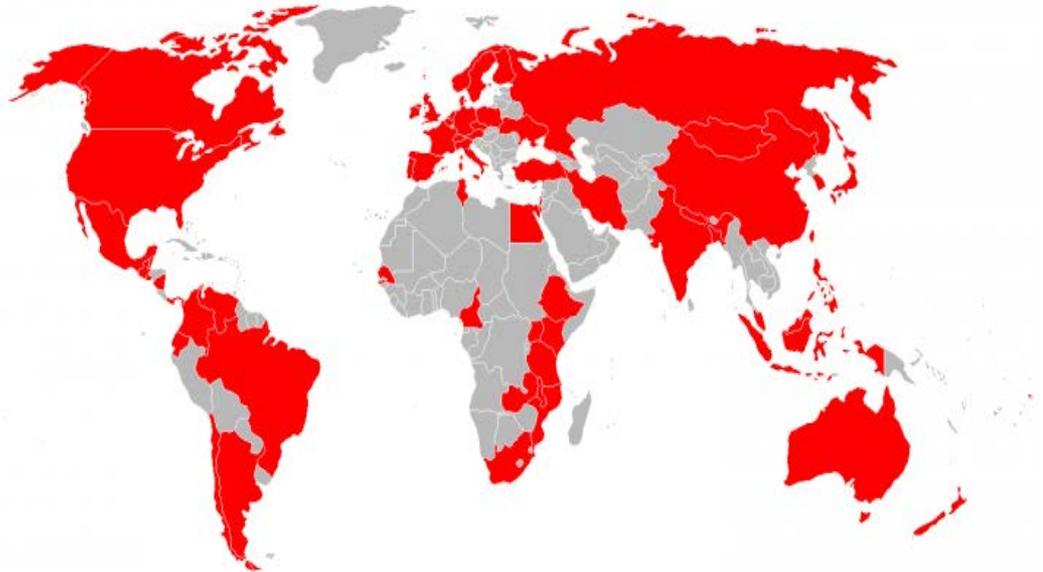
Partnerships for International Research & Education

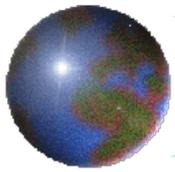
PIRE

- ISE-managed flagship international research program
- Frontier research leverages unique, complementary expertise of US & international partners
- Extensive overseas research opportunities for US students / early career researchers
- Institutional impact for international science
- Strengthen capacity of institutions, multi-institutional consortia, and networks to benefit from international research and education collaborations
- Development of globally-engaged U.S. science and engineering workforce
- 76 PIRE awards have engaged collaborators in more than 70 countries across all NSF disciplines
- 5-year awards, averaging \$4.5M

	Funding
FY 2011	\$17.8 M
FY 2012	\$23.5 M
FY 2013	\$21.0 M
FY 2014	\$17.4 M
FY 2015	\$18.5 M

The Global Reach of PIRE



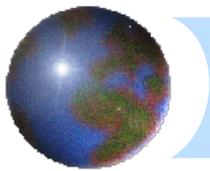


Partnerships for International Research and Education



Ancient biodiversity and global change in the New World Tropics: A once-in-a-century opportunity along the Panama Canal (OISE 0966884)

As a byproduct of the expansion of the Panama Canal, researchers gain a better understanding of the geologic evolution of the Isthmus of Panama in fields of paleontology, paleo-botany and tectonics/geochronology. This interdisciplinary project brings together four U.S. institutions and four Panamanian institutions and is training nearly 60 students.

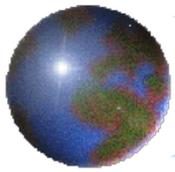


Global Venture Fund (GVF)

- Co-funds or supplements to NSF directorate awards
- Funds allocated across OISE regions
- NSF Program Officers submit request to OISE
 - Guidance via internal memo
- OISE internal panel reviews to ensure program goals met
- Co-funds or supplements up to \$75,000; higher with additional justification

	Co-funds	Funding
FY 2012	126	\$4.2M
FY 2013	220	\$4.0M

Directorate	2012 Co-funds	2013 Co-funds
BIO	18	40
CISE	14	29
EHR	4	4
ENG	35	47
GEO	33	70
MPS	9	18
SBE	13	12



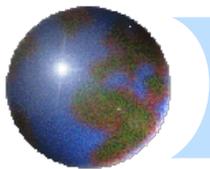
Science Across Virtual Institutes

SAVI

Platform for teams of NSF-funded investigators to:

- **Network** with partners abroad
- **Leverage resources** to advance shared research interests
- **Engage students** in international collaboration.
- SAVI is a mechanism, **not a stand-alone program**
 - ISE and NSF Directorate support
 - Support from counterpart agencies overseas





Partnerships for Enhanced Engagement in Research

PEER

- USAID-funded competitive grants program to support research & capacity building for developing country scientists
- U.S. investigator must have an active NSF award (or NIH, USDA, USGS, NASA, Smithsonian). May request supplement if partner funded
- Proposals reviewed by panel of science experts with development experience
- Only certain countries are eligible this year (2016)
- Must address USAID – development objectives
- USAID contributes \$6-7 million annually to this program
- Managed by National Academies of Science
- **Check the website!**

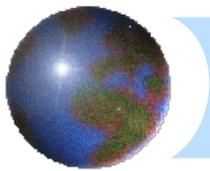
YEAR	PROPOSALS	AWARDS	COUNTRIES
2011	488	41	63
2012	237	54	54
2013	254	39	26

WORKING TOGETHER...



...where scientific research meets global development challenges





OISE Programmatic Activities

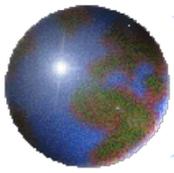
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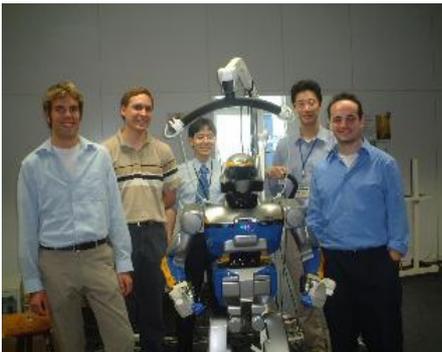
Type: Stand-alone **Co-funding Program** Under Consideration

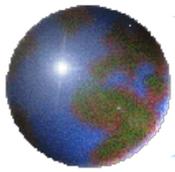


International Research Experience for Students

IRES

- Develop a more globally engaged S&E workforce
- Supports small group of students for focused research experience overseas
- U.S. faculty organizes international research experiences for small groups of U.S. undergraduate/graduate students. Foreign mentorship required
- \$250,000 maximum budget for up to three years



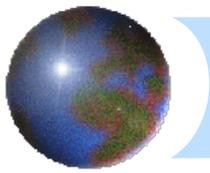


East Asia & Pacific Summer Institutes

EAPSI

- Summer research opportunity for U.S. STEM graduate students
- 8-10 week summer research program in EAP
 - Australia (25 positions), China (40), Japan (65), Korea (25), New Zealand (15), Singapore (15), Taiwan (25)
- Open to grad students who are U.S. citizens or permanent residents
- Partnership with counterpart funding agencies





International Research Fellowship Program

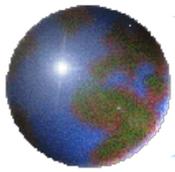
IRFP

- **Early post-docs (within two years of PhD)**
- Post-doc is the applicant and PI
- Introduce scientists and engineers in the early stages of their careers to international collaborative research opportunities
- Fellow's mentor is the foreign collaborator
- Residence abroad for 9 - 24 months
 - Up to \$200,000 in support
 - PI support for research, stipend, cost of living, transportation, insurance and dependents

	Proposals	Awards	Funding
FY 2011	188	34	\$4.66 M
FY 2012	154	32	\$4.50 M
FY 2013	*	30*	\$3.69 M



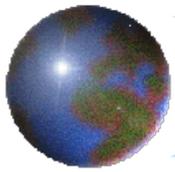
***In FY 2013 IRFP became a co-funding program and 24 of the 30 co-funded awards were in the BIO Directorate**



Graduate Research Opportunities Worldwide

- GROW offers opportunities for 2-12 month international research collaborations to NSF *Graduate Research Fellows*
- 17 Current Partners
Australia, Austria, Brazil, Chile, Denmark, Finland, France, India, Ireland, Japan, Korea, Mexico, Netherlands, Norway, Singapore, Sweden and Switzerland
- Expanding partnerships for future
- Contact: grow@nsf.gov

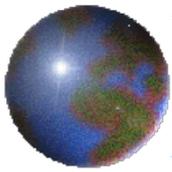




Keys to Success in ISE Funding

- Read the program announcement
- Strong Intellectual Merit, Broader Impacts
 - How does the collaboration enhance the work?
- Involve U.S. students, junior researchers
 - Prepare, mentor, and assess
 - Pay them: travel, living costs, stipends
- Include letter(s) of support from collaborator(s)
- Include biosketch of key collaborator(s)
 - ...unless solicitation prohibits it (CAREER)
 - Other senior project personnel (not co-PI)
- Work with others in your institution
- Know and observe special rules, e.g.
 - Fly America Act
 - Host country visa, permit requirements
- Ask early, ask often





Finding OISE on Web

The screenshot shows a web browser window displaying the NSF OISE website. The browser's address bar shows the URL <http://www.nsf.gov/od/aise/about>. The website features a navigation menu with links for FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT NSF, and FASTLANE. The main header includes the NSF logo and the text "National Science Foundation Office of International Science & Engineering (OISE)". A search bar is located in the top right corner. Below the header, there is a secondary navigation menu with links for OISE HOME, OISE FUNDING, OISE AWARDS, OISE DISCOVERIES, OISE NEWS, and ABOUT OISE. The main content area is titled "About the Office of International Science & Engineering (OISE)" and contains several paragraphs of text. A left sidebar provides a comprehensive list of resources, including links to OISE Home, OISE Advisory Committee, OISE Staff, and various regional and program-specific information. At the bottom of the page, there are social media and utility icons for Email, Print, and Share.

[HOME](#) FUNDING AWARDS DISCOVERIES NEWS PUBLICATIONS STATISTICS ABOUT NSF FASTLANE

NSF National Science Foundation
Office of International Science & Engineering (OISE)

QUICK LINKS

SEARCH

OISE HOME OISE FUNDING OISE AWARDS OISE DISCOVERIES OISE NEWS ABOUT OISE

Office of International Science and Engineering (OISE)

About the Office of International Science & Engineering (OISE)

The Office of International Science and Engineering section (OISE) serves as a focal point for international science and engineering activities both inside and outside NSF.

OISE promotes development of an integrated, Foundation-wide international strategy, and manages international programs that are innovative, catalytic, and responsive to a broad range of NSF interests.

Specifically, OISE supports programs to expand and enhance leading-edge international research and education opportunities for U.S. scientists and engineers, especially at the early career stage. It works to build and strengthen effective institutional partnerships throughout the global science and engineering research and education community, and it supports international collaborations in NSF's priority research areas.

The section carries out its functions through close partnership with the NSF Directorates and through its own program activities. OISE is housed within the Office of the NSF Director since its role is Foundation-wide.

OISE encourages funding applicants to include an international component in proposals submitted to the appropriate research directorate. See more at the OISE Home page.

To identify OISE staff assignments for specific countries, see [Staff by Country](#) page.

A vision statement for OISE can be found at <http://www.nsf.gov/od/aise/vision-doc.jsp>.

General questions about OISE may be directed to oisewebmaster@nsf.gov.

OISE Home
About OISE
OISE Advisory Committee
View OISE Staff

OISE Resources

Staff by Region, Country & Program

Regional Opportunities

NSF Overseas Offices

- NSF Europe Office
- NSF Tokyo Office
- NSF Beijing Office

NSF-wide International Information

Student & Early Career Information

International Postdoctoral Research Fellowships

Counterpart Science Agencies

J-1 Visa Waiver Requests

International Research Integrity

Info for Travelers

State Department Visa Page

US Government International Offices

Reports and Responses

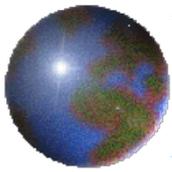
Additional OISE Resources

Staff by Region, Country & Program

NSF Overseas Offices

Email Print Share

<http://www.nsf.gov/od/aise/about.jsp>



Finding OISE Staff by Country

The screenshot shows the NSF OISE website interface. The main navigation bar includes links for HOME, FUNDING, AWARDS, DISCOVERIES, NEWS, PUBLICATIONS, STATISTICS, ABOUT NSF, and FASTLANE. The OISE logo and name are prominently displayed. A search bar is located in the top right. The left sidebar contains a list of resources, with 'Staff by Region, Country & Program' highlighted by a green arrow. The main content area features a section titled 'OISE Program, Regional and Country Contacts' with explanatory text and two tables: 'FUNDING OPPORTUNITY' and 'REGIONAL CONTACTS'.

OISE Program, Regional and Country Contacts

Responsibility for proposal processing in OISE is determined by either the location of the primary international activity or by the type of activity to be funded. Use the charts below to identify the appropriate contact.

Any OISE staff can respond to general questions or redirect inquiries. Use the **Program or Regional Contact** when questions are not country specific. **Contact a program officer directly only for country-specific issues.** If a country/economy is not listed, use the appropriate regional contact.

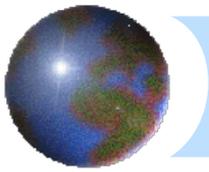
FUNDING OPPORTUNITY

Funding Program	OISE Contact	Contact email
CNIC - Catalyzing New International Collaborations	Lara Campbell	cnic@nsf.gov
EAPSI - East Asia Pacific Summer Institutes for US Grad Students	Anne Emig	eapsi@nsf.gov
IRES - International Research Experiences for Students	Maija Kukla	ires@nsf.gov
SAVI - Science Across Virtual Institutes	Anne Emig	savi@nsf.gov
PASI - PanAmerican Advanced Studies Institutes	Jessica Robin	pasi@nsf.gov
PEER - Partnerships for Enhanced Engagement in Research - Science	Lara Campbell	peer-nsf@nsf.gov
PIRE - Partnerships for International Research Education	Casandra Dudka	pireinfo@nsf.gov

REGIONAL CONTACTS

Region	ISE Contact	Contact email
Africa	ANESA team	anesainfo@nsf.gov

<http://www.nsf.gov/od/oise/country-list.jsp>



Thank You!

For Further Information

cestabro@nsf.gov