



# International Collaboration

# International Science is Frontier Science

## Principled International Collaboration is Critical to Success

- Enables cutting-edge research that no nation can achieve alone
- Strengthens scientific & diplomatic relations
- Leverages resources, including funding, expertise, and facilities
- Trains a robust S&T workforce capable of solving global problems
- International students and scholars contribute significantly to the U.S. research enterprise

Reference: Elizabeth E. Lyons, E. William Colglazier, Caroline S. Wagner, Katy Börner, David M. Dooley, C. D. Mote Jr., and Mihail C. Roco, "How Collaborating in International Science Helps America" *Science & Diplomacy*, Vol. 5, No. 2 (June 2016).



**MOSAIC** is the largest international Arctic research expedition ever undertaken—20 countries and 600 scientists conducted research from a German research icebreaker in the Arctic sea ice for one year.

Photo credit: Matthew Shupe/NSF-funded scientist, MOSAIC

# Improper Foreign Government Interference Does **NOT** Equal International Collaboration

## INTERNATIONAL COLLABORATION

- Ideal international scientific research collaborations **have transparent and reciprocal exchanges** for mutual benefit
- International collaborations leverage **complementary skills, facilities, sites, and resources**
- Overall, international collaboration **benefits** the scientific enterprise

## IMPROPER FOREIGN INFLUENCE

- Improper foreign influence can be categorized as a foreign government or entity's attempt to **interfere with U.S. affairs.**
- Select foreign talent recruitment programs **disregard intellectual property** and threaten to **compromise the transparency, openness and integrity** of scientific research

# The Importance of Research Security

*Why is research security necessary?*

- To **balance the open environment** with the needs of security
- To **maintain** the vibrant science and engineering community which **relies on collaborations both globally and domestically**
- To **promote** the norms, principles, and values of **openness, transparency, and reciprocal collaboration**



NSF's  
Commitment  
to Integrity in  
Research

# Risks to U.S. Science and Security in a Global Research Ecosystem

## Research Integrity:

- Conflicts of interest /  
commitment
- Confidentiality of merit  
review process
- Protection of pre-  
publication data

# Transparency and Full Disclosure Are Needed to Properly Assess Risk

**A conflict of interest** is a situation in which an individual, or the individual's spouse or dependent children, has a financial interest or financial relationship that could directly and significantly affect the design, conduct, reporting, or funding of research.

**A conflict of commitment** is a situation in which an individual accepts or incurs conflicting obligations between or among multiple employers or other entities. Many institutional policies define conflicts of commitment as conflicting commitments of time and effort, including obligations to dedicate time in excess of institutional or funding agency policies or commitments. Other types of conflicting obligations, including obligations to improperly share information with, or withhold information from, an employer or funding agency, can also threaten research security and integrity, and are an element of a broader concept of conflicts of commitment.

## Examples of NSF Action

- PI failed to disclose awards received through an affiliation with a foreign institution during the period when NSF awards were funded and there was significant overlap between awards. NSF terminated the NSF award.
- PI failed to disclose two long-term absences and to provide NSF information about active employment in another country. Institution agreed to terminate award and return funds.
- PI demonstrated a pattern of lack of disclosure of some foreign affiliations and funding for the last several years while receiving NSF funding, was promoted to a high-level position at the university, and still did not disclose to the university or to NSF. He did disclose other foreign funding such as Max Planck Institute. PI was debarred.

# Foreign Talent Recruitment Programs

## Definition

- Foreign talent recruitment programs are state-sponsored attempts to acquire U.S. funded scientific research through recruitment programs that target scientists in the US

# Foreign Talent Recruitment Programs

## The Issue

- Open scientific exchange faces challenges from programs sponsored by some foreign governments and affiliates
- Select programs disregard intellectual and other proprietary rights
- Such recruitment programs threaten to compromise the transparency, openness and integrity of scientific research by holding researchers to contractual commitments unbeknownst to the U.S. government

# Example Talent Plan Contract Terms:

## Publication, Outside Funding, Patent, and Recruitment Requirements

- “The first author and primary affiliation of these papers will be [xxx Chinese university].”
- “Party B (researcher) should lead the team to obtain overall research funding that equals or exceeds 10 million RMB (\$1.4M US) from outside of [xx Chinese university]”
- “Party B (researcher) will develop at least one lead compound that shows promise as a pre-clinical candidate and achieve a number of patents.”
- “Party B [researcher] will...hire at least one professor who has won recognition in the ‘National Outstanding Young Scientist Fund’ program or two professors that have or will receive ‘One Thousand Talent Program for Youth’ funding.”
- “Total number and the quality of papers in these two research areas shall rank in the top 5 among the same disciplines in the country [China].”

# NSF Actions

## Ensuring the Integrity of Federally-Funded Research

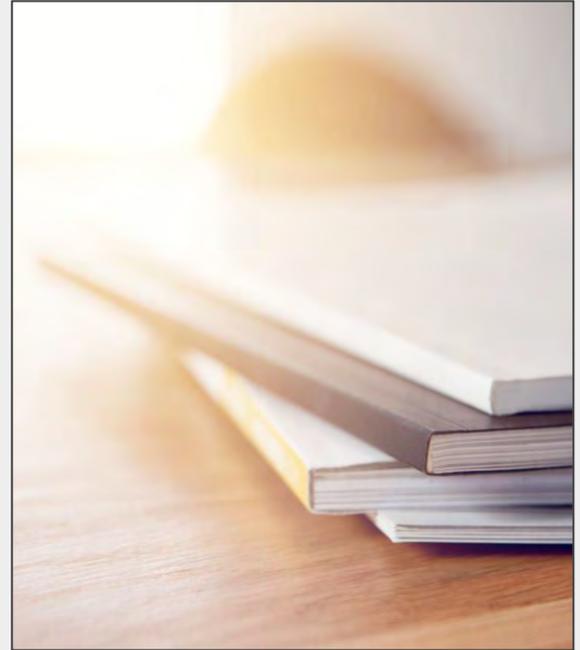
- Coordination with U.S. Government interagency partners
- Creation of new NSF position, Chief of Research Security Strategy and Policy (CRSSP)
- Improved transparency/clarification for disclosure
- Partner with the Office of the Inspector General on incidents
- Risk assessment and analysis
- Communication and awareness with the scientific community



Key **P**roposal  
and **A**ward  
**P**olicies and  
**P**rocedures

# Post-Award Information Disclosure

1. Awardees have an obligation to inform NSF within **30 days** of becoming aware of the failure to disclose
2. If an organization discovers that a PI or co-PI on an active NSF award **failed to disclose** current support or in-kind contribution information as part of the proposal submission process, **the AOR must submit this information**
3. NSF may consult with the AOR, or designee, if necessary, and determine the **impact of the new information on the NSF-funded grant**, and, where necessary, take appropriate action



# International Collaboration on Large Facilities

## Term and Condition

### 1. **Consideration of New Collaborations with Non-US**

**Organizations:** Awardee must provide advanced written notification of any potential collaboration with non-US organizations or governments in connection with its NSF-funded award scope. The awardee must then await further guidance from NSF.

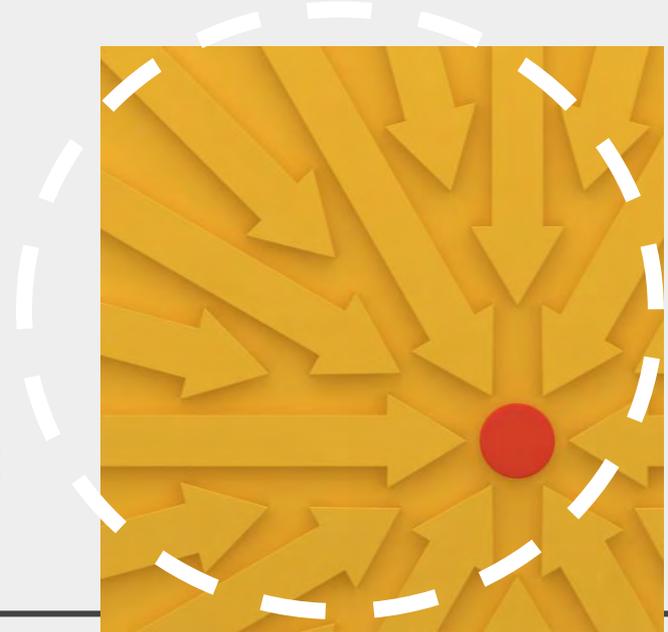
### 2. **Existing Collaborations with Non-US Organizations:**

Awardee must provide a list of existing foreign collaborations in connection with its NSF-funded award scope.

## NSF Actions Following Referrals by OIG

NSF has recouped millions of taxpayer dollars through actions on awards given to institutions and small businesses through:

- NSF award suspension
- Government-wide suspension
- NSF award termination
- NSF debarment from serving as reviewer, panelist, or consultant
- Removal of PI from NSF award



## NSF Administrative Action

**Grant Funds Recovered by NSF:**

**\$6M**

**Number of Cases:**

**15**

**Number of Institutions of Higher  
Education/Small Businesses**

**Involved:**

**21**

**Number of Researchers Involved:**

**23**



**The White House  
and  
Intergovernmental  
Activities**

# National Science and Technology Council Subcommittee on Research Security

1. Forum for substantive interface and coordination among White House, Departments, and Agencies with different roles in research security
2. Subcommittee Actions:
  - a. Developed guidance for Federal departments and agencies
  - b. Developed recommended practices for universities and other research institutions
  - c. Developing education and outreach materials that highlight examples of risks to research



## Harmonizing Efforts Among Agencies

- **Standardizing processes** – e.g., Current and Pending Support fillable form template – developed by NSF and shared among other agencies
- **Analytical tools** – Information exchanges on use of analytics and most effective tools for better understanding what datasets and analytics methods can help in addressing emerging security challenges
- **Synthesizing information** – e.g., Defining “research integrity” as related to science and security in the academic community to clarify misconceptions of term between different segments of the research and security space

# Conclusion

- Universities and federal agencies should **actively encourage international collaboration**
- Proposers and awardees should **disclose** the full extent of their activities
- Research integrity is **essential**

