National Science, Technology, and Security Roundtable

Capstone Workshop July 16-17, 2024

Brief Summary and Synthesis

July 17, 2024

Day 1

Day 1

The Work of the NSTSR

The US Research System's Role in National and Economic Security

Evolution of University and National Lab Responses

Evolution of Funding Agency Responses

Evolution of Law Enforcement Agency Responses

The Work of the NSTSR

- Read the co-chairs paper

The Work of the NSTSR

Dick Meserve

1. Establish a risk-informed approach
2. Tighten the CUI Standards
3. Reassure foreign-born researchers and our students
4. Cooperate between agencies
5. Provide the necessary resources

The Work of the NSTSR

John Gannon

- Progress in collaboration with the law enforcement and academic community – with some caveats
- Even without concerns about particular countries, we would still worry, because of the lack of the US leadership position that we once held.

The Work of the NSTSR

Maria Zuber

- Federal agencies have shared data that indicated literally hundreds of cases of non-compliance from federally funded PIs
- Chilling effect is a problem
- Invest in what we are protecting

“the strength of our S&T system is dependent on adequate support…we have [not] responded to the international challenge … unless we devote the necessary resources to strengthen US capability.”

-Dick Meserve

The US Research System's Role in National and Economic Security

Michael McQuade

- Remember WHY we are here
- Tremendous progress with law enforcement understanding open science
- Explain to the broader public why science matters

The US Research System's Role in National and Economic Security

Susan Gordon

- Protect what matters, protecting advantage, includes protecting *who we are*
- We don't own superiority in every technology
- Supply chain of talent rather than chips

The US Research System's Role in National and Economic Security

Patrick Gallagher

Three major things that have changed

1. Technology itself – increasingly originated in companies and then adopted by government.
2. Platform technologies, eg cloud computation, software libraries.
3. US no longer enjoys hegemony in technology. Changes the risk calculus

The US Research System's Role in National and Economic Security

Susan Gordon: Government: big problems, long time horizons, and deep pockets.

Susan Gordon: Focus on national security advisors of both candidacies, and then when someone is elected, spend time with them. Triumvirate of commerce, defense, and intelligence

Michael McQuade: The RT and this study really argue for a risk-based strategy. Not just what goes out the door. Lack of performance, innovation, progress. Our risk calculus has to say how do we out-compete.

Evolution of University and National Lab Responses

Chaouki Abdallah

- Open research is critical and we need to protect it
- We have a talent program. It’s called graduate schools.

Evolution of University and National Lab Responses

Peter Fisher

- Concrete approaches for stakeholders and decision makers
- See assessment tools and recommendations in the JASON reports

Evolution of University and National Lab Responses

John Sarrao

- We cannot be successful without international engagement, but there are real risks when other players do not share our values.
- Emphasize the value of education, awareness, and training in addition to compliance. View researchers as “targets” rather than “threats”.
- Protect the future, don’t re-litigate the past. Useful analogy to our safety culture: robust reporting, proactive organizational learning, without fear of reprisal but fostering just accountability.
- Tell our story; celebrate the good work we are doing, while recognizing more to do.
- Vectors: who, what and where. Customized guidance.

Evolution of University and National Lab Responses

Joe Elabd

- Texas A&M as a case study: reviewed all agreements between any Texas A&M institution and anybody in any of the countries of concern. 95 agreements. Terminated 67 agreements. Ongoing comprehensive review process.

Discussion

- Appropriate for different schools, agencies, topics of research to result in two different answers.

Evolution of Funding Agency Responses

Rebecca Keiser, NSF

- Research security at all stages & Research security by all actors
- Detailed Standards – Cyber, Travel, Training, Export
- Detailed Training – Security, Disclosure, Risk, Collaboration
- SECURE (Safeguarding the Entire Community in the U.S. Research Ecosystem) center
- Research on Research Security (RoRS) program
- Piloting TRUST (Trusted Research Using Safeguards and Transparency) process

Evolution of Funding Agency Responses

Harriet Kung, DOE

- Detailed timeline since 2016
- Research, Technology, and Economic Security (RTES)
  - RTES Policy Working Group: Coordinates RTES policy development across DOE
  - RTES Office: Provides consistency and support for due diligence reviews and risk mitigation in DOE financial assistance and loan activities.
- Office of Science (SC)
  - Monitors transparency, burden, and subject matter expertise
  - NSF-stewarded common forms and updated policies, eg COI/COC,
  - Supports annual update of the S&T Risk Matrix
- Lessons learned
  - Engagement with interagency, researchers is key
  - Strong, trusted relationships between the research security experts and the technical experts, with transparency and flexibility

Evolution of Funding Agency Responses

Patricia Valdez, NIH

- Documented and shared stats on cases
  - Undisclosed research support, commitments, significant financial interests
  - Diversion of IP, shared confidential information, transfer of materials, influence on selection processes in agencies and universities
- SOPs, statistics, and cases on the foreign influence website
- Cases are falling and the 11 cases YTD include many self-disclosures

Evolution of Funding Agency Responses

Bindu Nair, DOD

Why do basic research in the department?

1. Disruptive ideas. Fundamental research can blow up our own road maps.

2. Awareness. We don’t ever want to be surprised. WE want to know what ideas are percolating and where are they percolating. Basic research is about collaboration. Including with places that are not our ally partners.

3. People. We use basic research to train folks in those things that we believe are necessary for the scientific enterprise of the future.

“Same as NSF and DOE, we [DOD] need to have technically competent people making these highly complex, highly nuanced decisions about how to take risk. [And] we need people to be aware.”

– Bindu Nair

Evolution of Law Enforcement Agency Responses

Tom Fingar

1. How has the landscape changed?
2. How has the decision-making process in universities been informed by national security information?
3. What is the current assessment of the threat?
4. What is the current law enforcement assessment of university awareness?

Evolution of Law Enforcement Agency Responses

Chuck Durant

- Cleared researchers would recognize the dual use - uncleared researchers would be working without that knowledge.
- Risk management program: The answer is not to ban everybody but better CI system, relationship between CI and researchers, manage the risk, identify the key technologies that we believe are essential to US national and economic security and draw a counterintelligence fence around them.
- Counterintelligence needs to grow.

    Not to create a security state but more awareness.

Evolution of Law Enforcement Agency Responses

Bill Evanina

- Don’t lose the attributes that make America be America.

- We used to have a National Security Higher Education Advisory Board. 25 chancellors cleared. Unlimited access to the intelligence we were getting. It went away in 2013. Bad timing.

- And to answer your question it is 10x worse today.

“The grand challenge is striking the appropriate and dynamic balance between engagement and research security.”

– John Sarrao

Day 2

Day 2

The Nature of the Geopolitical Challenge

Legislative, Regulatory, and Other Types of Responses

Potential Near- and Long-Term Responses

Possible Future Directions, Including Ideas for Further Research

Brief Summary and Synthesis of the Capstone Workshop

The Nature of the Geopolitical Challenge

Anna Puglisi

- Challenge is fundamentally different
  - Peer power in STEM R&D
  - Blurring public and private, civilian and military
  - Ethical asymmetries
- Emerging technologies are increasingly at the center of global competition – and China sees that and acts accordingly.
- Regardless of administration, no room for xenophobic profiling
- The reality that China is presenting is uncomfortable and inconvenient to companies, academics, former govt officials who cash in as lobbyists, but we must face it.
- We do need to take the Chinese threat **more** seriously than we are.

Legislative, Regulatory, and Other Types of Responses

- Maria:
  - Strong Bipartisan Support for addressing the issue
  - Repeatedly see major bills on research security that would not be helpful
- Maria and Toby: Much has already been done

Legislative, Regulatory, and Other Types of Responses

Specific Recommendations	WHO
Need to maintain a forum (or forums) where stakeholders and government intel, security, and research officials can engage in an ongoing dialogue (e.g., the NASEM Science, Technology and Security Roundtable)	Congress and agencies PCAST and NASEM trough FDP, GUIRR, or a new Research Security Roundtable could also play roles here.
Continued interagency collaboration is critical (e.g., NSTC interagency working group)	Congress, OSTP/NSTC and agencies
Need an FBI Liaison Office for universities at the national level	FBI
Intelligence agencies need to better coordinate their efforts relating to research security	IC
Need training for agency program officers on CUI and on controls, including when and how specific restrictions should be imposed	Agencies
Need clear processes in place for ensuring due process, especially in instances of agency administrative action	Agencies and Universities
Need increased sharing of information regarding clear security risks (e.g., mechanisms to share classified information with specific trusted university officials should be developed)	Universities and IC
Additional mechanisms should be developed to help improve research security and assess potential risks (e.g., REN-ISAC Cyber Peer Assessment program; Possible FDP demonstration project relating to research security and integrity)	NSF Secure Center, FDP, University/CI collaboration, Agencies

Legislative, Regulatory, and Other Types of Responses

Need to develop, support and fund new strategic international partnerships	Congress and State working with Commerce, Intelligence, and Science Funding Agencies
Need to retain foreign students who graduate from American universities with advanced STEM degrees (e.g., enact the "Staple Act").	Congress
National security requires the development of a national talent recruitment, retention and development strategy (e.g., treat talent as a 'supply chain' issue)	Congress (NDEA 2.0?); NASEM Study
Recognize that: • Scientific progress requires science to be open and able to be replicated, tested and reproduced • Costs vs. benefits of closed versus open science must be assessed; they should not be viewed as mutually exclusive • No longer have a monopoly on the top science • National security requires investments in fundamental scientific research, not merely walling it off • Ensuring research security, integrity and continued scientific openness is a shared responsibility	All

Potential Near- and Long-Term Responses

Paul Doucette - Principles

- Transparency
- Consistency
- Balance
- Encourage Innovation
- Resource Appropriately

Potential Near- and Long-Term Responses

Michael McQuade

1. double down on not misusing CUI.
2. Law enforcement and intelligence; let's not overemphasize dialog but let's get to information sharing. Presidents and VPRs with clearances
3. Gravitate towards a zero-trust environment. Previous life I only sponsored research that we were willing to have be open research.

China playing the long game. Putting investment and tech in place.

Cross- university assessment of programs

Potential Near- and Long-Term Responses

Kelvin Droegemeier

- What: Strengthen and actively promote messaging and continuous conversation on values to deepen cultural norms
- Untie our hands: drowning in regulations
- Educate within 8 years an additional 2 million people across a spectrum of areas and degrees/certificates,
- Strategic planning (led by Academies)
  - multi-sector, whole-of-nation, 25-year S&T vision for the U.S.
  - 5-year S&T strategic research and talent development roadmap

Potential Near- and Long-Term Responses

Diana Gehlhaus

- High-skilled, AI-forward immigration reform
- Moving from NDEA 1.0 to NDEA 2.0

Potential Near- and Long-Term Responses

Norbert Holtkamp

Blueprint for international collaboration

- A streamlined risk-management processes for collaborations among member countries, their institutions, and principal investigators provides kind of a Pre-Check lane for approval.
- It restores an open and fast research ecosystem, which is an incentive to join as well as comply.
- It provides for an attractive work environment for the best and brightest from anywhere in the world.

Discussion: detailed implemention could be hard; could pieces be accomplished?

A final personal note on Science

The shared desire of humans to understand the world is part of what it means to be human.