New NSF Proposal Review Process: Trusted Research Using Safeguards and Transparency (TRUST)

Presentation for the Federal Demonstration Partnership - May Meeting
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Our Guiding Principles

Respect the science

Get to “YES”

Focus on mitigation measures

Practicing Thoughtful Vigilance…

TRUST

Avoid curtailing beneficial activities due to risk aversion or overly broad interpretation of policy.

Avoid the targeting of individuals based on nationality or country of origin. Protect core values of fairness and due process throughout.

Maintain open lines of communication with the community. We want to hear from you before situations become a major concern.

NSF Responding to Legislative Requirements

Section 10339 of the CHIPS and Science Act

Identify ***research areas*** ... that may involve access to "***controlled unclassified or classified information***" and "exercise due diligence in granting access to individuals working on such research who are employees of the Foundation or covered individuals on research and development awards funded by the Foundation."

FY23 Appropriations Report

Open-source research capabilities at NSF could be used by adversaries against U.S. allies or U.S. interests…therefore directs the NSF to collaborate with the Secretary of Defense and the Director of National Intelligence to compile and maintain a list of all NSF-funded open-source research capabilities that are known or suspected to have an impact on foreign military operations.

NSF Asked JASON in 2023:

- What are the general ***principles that NSF might use in developing lists of research/technology areas of concern***?
- What existing structure and guidance for federal ***Controlled Unclassified Information (CUI)*** might be applicable to identifying NSF-funded research/technology areas of concern?
- What are some of the ***potential impacts on the research community*** should some NSF-funded research areas be designated as areas of concern?
- What ***processes and restrictions might be implemented*** to carry out research that falls within the NSF-designated CUI category?

JSR-23-12: Safeguarding the Research Enterprise

Endorsed 2019 themes plus:

- Fundamental research is a critical component of U.S. scientific and technical leadership, ***promoting national security*** in both defense and economic domains.
- Recipients of federal funding have a responsibility to protect U.S. interests, and the ***U.S. research community should be actively engaged in protecting those interests***.
- Transfers of sensitive technologies to foreign countries can create national security risks.
- Research controls, such as CUI, are only one component of a broader strategy of risk mitigation and management to ensure that U.S. research contributes significantly and positively to the national interest.

JASON Key Findings

1. ***Openness and transparency*** in fundamental research promote scientific discovery, which ***improves national security.***
2. International collaborations with those who share the ideals of openness and transparency benefit all participants. However, recent efforts of the PRC to preferentially direct fundamental research toward military needs, and its decision to restrict the flow of information out of the country, ***may severely limit the benefits of collaborations with research organizations in the PRC***.
3. Differentiation between sensitive and non-sensitive research is most natural at the ***project level***, not at the sub-field level. ***Projects in the same sub-field can have very different levels of risk.***

JASON Key Findings (2)

4. Risk mitigation must consider the spectrum of risk and be adaptable to changing trends in research. ***Resources should be concentrated on areas of maximum risk*** to ensure that benefits outweigh the costs.
5. Formal controls on research, such as a CUI designation, will have ***unintended consequences***.
6. The NSF proposal and reporting cycle provides the most natural means for identifying sensitive projects.
7. ***Research institutions and NSF have key roles*** to play in the process of risk identification and management.
8. Awareness of research security issues among university researchers is lower than warranted at present, but approaches are available to raise the awareness level.

JASON Key Recommendations

1. NSF should adopt a ***dynamic approach for identifying potentially sensitive research topics*** as they arise, instead of attempting to maintain a comprehensive list of sensitive research areas.
2. NSF should ***proceed with caution before adding access or dissemination controls*** to grants or contracts.
3. The identification of sensitive projects proposed to NSF occurs most naturally ***before peer or panel review***.
4. Specific ***mitigation strategies for sensitive research projects should be negotiated and agreed upon by the PI, NSF, and the institution***.

JASON Key Recommendations (2)

5. NSF should foster a culture of research security awareness by providing ***substantive information to researchers about real risks, making resources available for researchers to voluntarily seek guidance, and continuously engaging with researchers and their institutions***.

6. NSF should engage in dialogue with international partners who have like-minded approaches to research security and integrity, and who are facing similar research security problems.

How did we develop our process?

February 2024	**JASON Sensitive Research Study** • Assess national security application of the research at the project level
March 2024	**JASON Rubric Road Test** • NSF proposals lack information for certain evaluation criteria • Suggestion to use a decision tree rather than a rubric
March 2024	**NSF Internal Consultations – RSLG, QSSC Road Test** • Development of QIST keywords to use during pilot phase • Understanding of resources required for Research Security Review Team
April 2024	**Interagency Consultations – DARPA, NIST, R&E** • Identify mitigation strategy with the research institution • Benchmarked process and mitigation strategies

TRUST: "Trusted Research Using Safeguards and Transparency

Evaluate Three Criteria, with transparent step by step process:

1) Appointments and positions w/ U.S. proscribed parties and currently party to a malign foreign government talent recruitment program (MFTRP)
   - U.S. Bureau of Industry and Security Entity List, the Annex of Executive Order (EO) 14032 or superseding EOs
   - Sec. 1260H of the National Defense Authorization Act (NDAA) for FY2021
   - Sec. 1286 of the NDAA for FY2019, as amended

2) Nondisclosures of appointments, activities and sources of financial support (current research security policy)

3) Potential foreseeable national security applications of the research

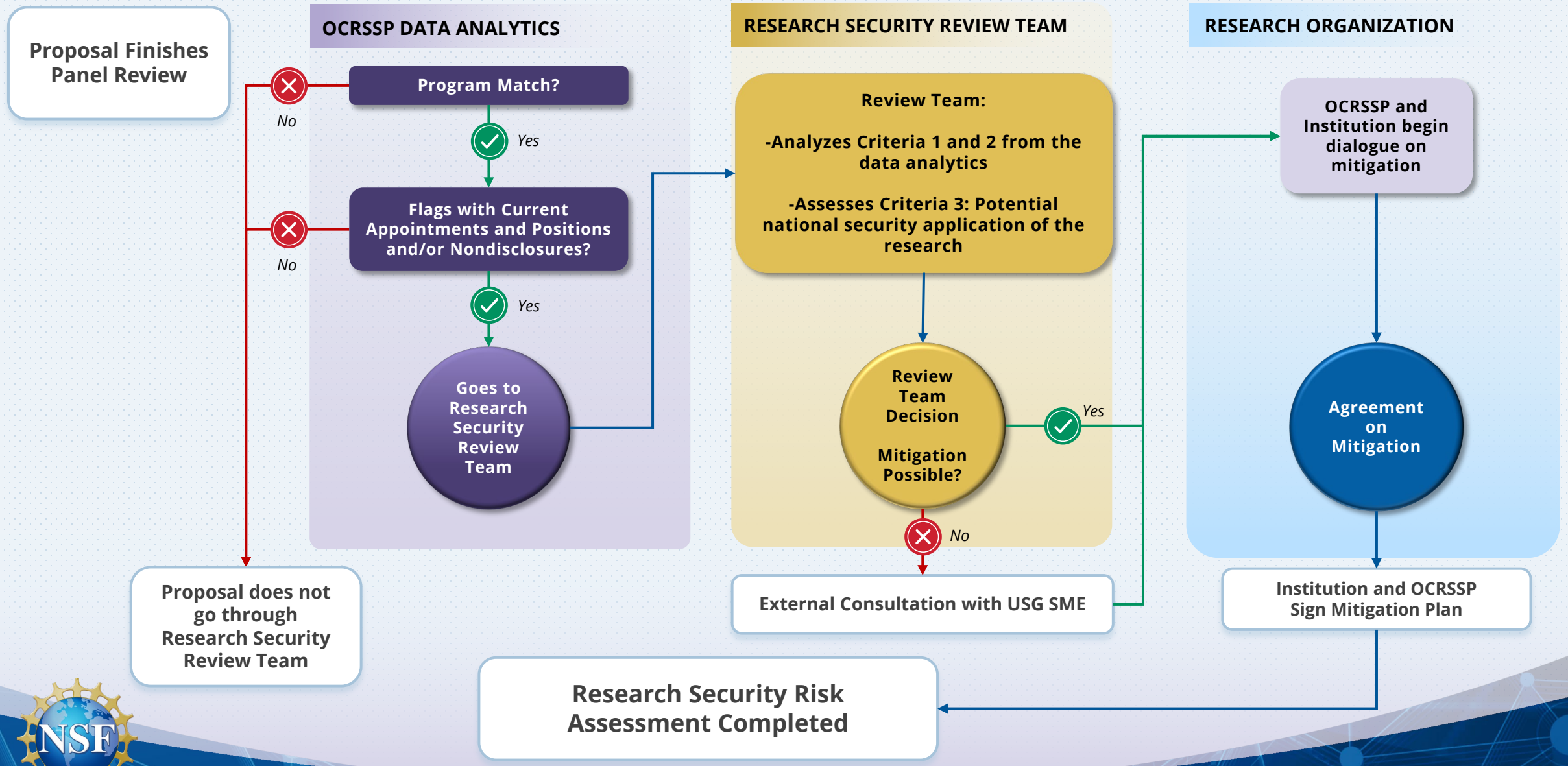
OCRSSP will confirm that senior personnel have no ***current appointments and positions with U.S. proscribed parties,*** and that they are not **currently a party to a malign foreign talent recruitment program**

Undisclosed information will be examined from the time NSPM-33 Implementation Plan was released (Jan 2022)

TRUST Process

Appointments and positions w/ U.S. Proscribed Parties and MFTRPs	Nondisclosures (Current Research Security Policy)	National Security Application of the Research
OCRSSP conduct analytics	OCRSSP conduct analytics	OCRSSP Keyword Automated Review
Research Security Review Team to identify mitigation	Research Security Review Team to identify mitigation	Research Security Review Team
OCRSSP and the institution will work together to mitigate risk	OCRSSP and the institution will work together to mitigate risk	External USG consultation coordinated through ODNI (if needed)

TRUST Process



Understanding the Research Security Review Team

5 – 6 members, including:

- The relevant PO / PD
- QIST Subject Matter Experts (~3)
- OCRSSP Staff (1–2)
- External USG QIST and National Security expert (for pilot phase only)
- ***Decision will be a consensus between members***

Research Security Review Team Questions

Are the national security aspects important enough to override the societal benefits of non-national security applications?

Is the technology sufficient and unique enough for the national security use case in mind?

What are the goals of the project?

Guiding Questions

Do certain mitigation measures on the project confer a meaningful advantage to the United States?

Research Security Review Questions continued…
What happens if we say no?

- If the United States has a **definitive advantage,** mitigation makes the most sense when and so can endure the burden of additional protections without negatively impacting the country's relative position.

- If "**neck and neck**," consider whether imposing the burden of security restrictions on U.S. researchers might slow the pace of U.S. innovation relative to foreign competitors.

- If the United States is **not the leader** in this domain, consider whether the United States seeks to benefit from this international cooperation by elevating U.S. capabilities, despite the potential level of risk.

Mitigation Strategies - DARPA

- Examples of potential Countering Foreign Influence Policy (CFIP) risk mitigation strategies that have proven effective when preparing risk mitigation strategies for CFIP issues.

    1) Periodic Security Communication
    2) Expanded Reporting Requirements
    3) Certification of Status
    4) Tailored COI/COC Management Plan
    5) Information Sequestration
    6) Confirmation of Disassociation
    7) Proactive Security Measures at Institutions

Example mitigation plan excerpt from DARPA:

- A researcher was rated as a VERY HIGH risk due to multiple active affiliations with PRC government-connected entities (Factor 4 of the DARPA risk rubric) and several instances of active funding from the same entities.
- The Program Manager wanted to mitigate those risks and requested that the institution implement expanded reporting requirements as one part of a multi-faceted mitigation plan.

"The researcher will meet with the institution's Office of Scientific Integrity on a quarterly basis to review a list of his active collaborations to determine whether there are any changes that should be reported to funding agencies or any additional management/oversight to put in place (e.g., a new COI management plan or modifications to existing plans)."

"On a quarterly basis the institutions will send either an updated list of the researcher's collaborations or a certified notification that there is no change from the previous submission. These reports will be sent quarterly based on the initial award date of the project."

"The institution will require the researcher to request permission before engaging in any new foreign collaborations. These collaborations will be vetted by the institution's Office of Scientific Integrity to determine whether the researcher can begin a collaboration or whether additional mitigation measures need to be implemented."

"During the six-month reporting period, the researcher will be required to submit an updated SF-424. The SF-424 does have an overall page limitation, which prevented the researcher from including all of his information previously. Going forward, additional pages will be included for any required information that does not fit within the page limit."

TRUST Implementation

- **Phase 1 – Quantum Proposals – beginning FY25**
  - Pilot program will be an *iterative process* and NSF will assess:
    - Implementation of new Tiger Team process
    - Timeline of process, bandwidth and resources required from NSF staff
    - NSF's ability to assess potential national security application of the research
    - How often NSF needs external consultation
    - ***Continued External Engagement – Listening Sessions with FDP Members, among others***

- **Phase 2 – PAPPG Changes & Expand to <u>some</u> CHIPS+ Key Tech Areas**
  - Information to assess certain criteria are not currently in solicitations
  - Consider expansion to Microelectronics, AI, and Biotechnology.

- **Phase 3 – Scale up Review for all CHIPS+ Key Tech Areas**
  - NSF Staff will have more familiarity with the process
  - Mitigations will be more streamlined, expediting the review process

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