

- **Artificial Intelligence (AI):** AI and Digital Twins: Possible focus areas: integration of digital twins with artificial intelligence (AI); leverage generative AI for digital twin modeling & simulation with the consideration of the potential impact on a digital twins' physical counterpart
- **Business: Business Case Analysis:** Possible focus areas: foundational research cost; evaluate value/return on investment; cost and time to implement
- **Data:** Encourage Adoption of Data Management Best Practices: Possible focus areas: governance methods for data collection, curation, sharing and usage; shared public datasets and repositories; real-time data integration
- **Ecosystem:** Establish a National Digital Twin R&D Ecosystem: Possible focus areas: collaborations across agencies to identify and address foundational research gaps and opportunities that spans areas such as biomedical sciences, environmental ecosystem, sustainability & climate change, smart and connected communities, scientific discovery, agriculture, military & mission planning, as well as common mathematical, statistical, and computational foundations
- **International:** International Collaborations on Digital Twins: Possible focus areas: global scale digital twins across foreign markets; global issues and digital twin development consensus standards; opportunities for international collaboration (e.g., European Union's Horizon 2020 program funding digital twin projects)
- **Long Term:** Identify Long Term Research Investments: Possible focus areas: novel approaches for interactive data-driven modeling and simulation, both crosscutting and fit for purpose; research enabling the bidirectional flow between the virtual and the physical assets; creating test environments for digital twins ensuring sufficient resources and sustainable high-performance computing
- **Regulatory:** Regulatory Science Challenges associated with the use of Digital Twins
- **Responsible:** Promote Responsible Development & Use of Digital Twins: Possible focus areas: ethical use of digital twins; identifying ethical issues, mitigating and biases with respect to data ownership, intellectual property and privacy
- **Standards:** Promote Development of Evaluation Tools, Methodologies and Consensus Standards for Digital Twin Development and Testing and Interoperability: Possible focus areas: community of practice, ontology and data exchange protocols; encryption

standards; taxonomy; address challenges related to evaluation of data-driven Digital Twin components; continuous and multi-modal data sources; personalized applications derived from Digital Twins; transferability, generalizability and robustness of Digital Twins

- **Sustainability:** Design and Develop Systems and Architectures for Digital Twin Sustainability: Possible focus areas: sustainment as the operating systems and computational models on which they are based evolve and the data which they ingest are updated; intentional organizational effort and purpose-built modeling ecosystems energy-awareness; early consideration of computational requirements and effective workflows; develop approaches for the design, development, and deployment of Digital Twins; the ability to create interoperable Digital Twins with evolving technology and standards

- **Trustworthy:** Realize Secure and Trustworthy Digital Twins: Possible focus areas: develop solutions to assure the security, cyber resilience, and trustworthiness of digital twins (taking into account all components of DTs such as their code base, data and data processing, operational environments, networking and connectivity with the physical counterpart); develop capabilities to utilize DTs to improve the security and cyber resilience of the physical counterpart, such as through threat analysis, attack modeling, risk analysis, security testing and similar analyses conducted on the Digital Twins
- **VVUQ:** Develop Rigorous Methods for Verification, Validation, and Uncertainty Quantification for Digital Twins: Possible focus areas: foundational and cross-cutting methods as well as domain specific; integration of VVUQ into all elements of the full digital twin ecosystem

- **Workforce:** Cultivate Workforce and Training to Advance Digital Twin Research and Development: Possible focus areas: diverse talent recruitment; incentivize cross-disciplinary STEM research programs across educational institutions

We encourage responses to be organized according to the preceding outline, although we also welcome responses that address only a subset of the items. Submitters are encouraged to address the topics of this RFI clearly and concisely.

References

- National Academies of Sciences, Engineering, and Medicine. 2024. Foundational Research Gaps and Future Directions for Digital Twins.

Washington, DC: The National Academies Press. <https://doi.org/10.17226/26894>.

- *A National Academies of Sciences, Engineering, and Medicine-appointed ad hoc committee, Committee Members and Sponsors, Events, Publications.*
- *Digital Twins—The Networking and Information Technology Research and Development (NITRD) Program.* Submitted by the National Science Foundation in support of the Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO) on June 13, 2024.

(Authority: 42 U.S.C. 1861, *et seq.*)

Suzanne H. Plimpton,
Reports Clearance Officer, National Science Foundation.

[FR Doc. 2024–13379 Filed 6–17–24; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Agency Information Collection Activities: Comment Request; NSF Small Business Innovation Research (SBIR) Program Phase I, NSF Small Business Technology Transfer (STTR) Program Phase I, and NSF SBIR/STTR Fast-Track Pilot Pre-submission Project Pitch Form

AGENCY: National Science Foundation.

ACTION: Notice.

SUMMARY: The National Science Foundation (NSF) is announcing plans to establish this collection. In accordance with the requirements of the Paperwork Reduction Act of 1995, we are providing opportunity for public comment on this action. After obtaining and considering public comment, NSF will prepare the submission requesting Office of Management and Budget (OMB) clearance of this collection for no longer than 3 years.

DATES: Written comments on this notice must be received by August 19, 2024 to be assured consideration. Comments received after that date will be considered to the extent practicable. Send comments to address below.

FOR FURTHER INFORMATION CONTACT: Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Room E6347, Alexandria, Virginia 22314; telephone (703) 292–7556; or send email to splimpto@nsf.gov. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339, which is accessible 24

hours a day, 7 days a week, 365 days a year (including Federal holidays).

SUPPLEMENTARY INFORMATION:

Title of Collection: NSF Small Business Innovation Research (SBIR) Program Phase I, NSF Small Business Technology Transfer (STTR) Program Phase I, and NSF Fast-Track Pilot Pre-submission Project Pitch Form.

OMB Control No.: 3145–NEW.

Expiration Date of Approval: Not applicable.

Abstract: The NSF Small Business Innovation Research Program (SBIR) Phase I, Small Business Technology Transfer Program (STTR) Phase I, and SBIR/STTR Fast-Track Pilot Project Pitch is an NSF SBIR/STTR pre-submission process that conveys information needed to direct the proposed SBIR/STTR project to the appropriate NSF Program Director (PD) for review and possible proposal submission invitation. The Project Pitch is to be submitted by the applying small business concern (as “proposer”) to the relevant NSF SBIR/STTR Phase I or Fast-Track Pilot technology topic. The Project Pitch outlines solicitation-specific aspects of the project (such as the proposed technology innovation)) and captures the same requested information, as outlined in the NSF SBIR/STTR Phase I and Fast-Track Program solicitations, but all within one secure, web-based form. Specifically, the form collects the submitting proposer company and team information, the proposed technology innovation; the technical objectives and challenges, and the market opportunity. The form also allows the proposer to choose (from a drop-down menu) the most relevant NSF SBIR/STTR Phase I and Fast-Track Pilot technical topic area, ensuring that the submitted Project Pitch goes to the most appropriate Program Director. For the SBIR/STTR Fast-Track Pilot submission, the Project Pitch encompasses the same questions as outlined in the Phase I Project Pitch but also seeks responses to three key eligibility requirements: NSF lineage, customer-discovery experience, and confirmation that the team members are currently employed by the company. These requirements expand on the details of the previously required information on the proposed technology innovation, the market opportunity, and the company and team, respectively.

Respondents: Small business concerns who submit proposals to NSF’s SBIR/STTR Phase I and Fast-Track Pilot Programs.

Estimated Number of Annual Respondents: 2500.

Burden on the Public: 3 hours (per response) for an annual total of 7500 hours.

Dated: June 13, 2024.

Suzanne H. Plimpton,
Reports Clearance Officer, National Science Foundation.

[FR Doc. 2024–13380 Filed 6–17–24; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION**Notice of Permit Applications Received Under the Antarctic Conservation Act of 1978**

AGENCY: National Science Foundation.

ACTION: Notice of permit applications received.

SUMMARY: The National Science Foundation (NSF) is required to publish a notice of permit applications received to conduct activities regulated under the Antarctic Conservation Act of 1978. NSF has published regulations under the Antarctic Conservation Act in the Code of Federal Regulations. This is the required notice of permit applications received.

DATES: Interested parties are invited to submit written data, comments, or views with respect to this permit application by July 18, 2024. This application may be inspected by interested parties at the Permit Office, address below.

ADDRESSES: Comments should be addressed to Permit Office, Office of Polar Programs, National Science Foundation, 2415 Eisenhower Avenue, Alexandria, Virginia 22314 or ACApermits@nsf.gov.

FOR FURTHER INFORMATION CONTACT: Andrew Titmus, ACA Permit Officer, at the above address, 703–292–4479.

SUPPLEMENTARY INFORMATION: The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Pub. L. 95–541, 45 CFR 671), as amended by the Antarctic Science, Tourism and Conservation Act of 1996, has developed regulations for the establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas as requiring special protection. The regulations establish such a permit system to designate Antarctic Specially Protected Areas.

Application Details

Permit Application: 2025–002

1. *Applicant:* Jesse Naiman, Pathfinder Aviation, 1936 Merrill Field Drive, Anchorage, AK 99501.

Activity for Which Permit is Requested: Enter Antarctic Specially Protected Area. The applicant requests an ACA permit to enter ASPA 124—Cape Crozier using a helicopter, below 2,000 feet, should weather require. The flights are required to support U.S. Antarctic Program science and management activities in the Cape Crozier area. Helicopter flights would not occur in the vicinity of wildlife at Cape Crozier, and all activities would be consistent with the management plan for the ASPA. Up to a total of 20 flights under 2,000 ft are requested per year.

Location: ASPA 124—Cape Crozier.

Dates of Permitted Activities: October 1, 2024–March 1, 2026.

Permit Application: 2025–001

2. *Applicant:* Link Olson, University of Alaska Museum Mammal Collection, 1962 Yukon Drive, Fairbanks, AK 99775.

Activity for Which Permit is Requested: Export From USA. The applicant requests a permit to export 6 crabeater seal (*Lobodon carcinophaga*) blood samples. The samples are part of the archived specimens in the University of Alaska Museum Mammal collection and would be exported to a science collaborator at the Bielefeld University, Germany for genetic analysis. The permit applicant currently holds a Marine Mammal Protection Act permit to receive, possess, import and export the samples in their possession.

Location: None.

Dates of Permitted Activities: July 1, 2024–December 31, 2024.

Kimiko S. Bowens-Knox,

Program Analyst, Office of Polar Programs.

[FR Doc. 2024–13332 Filed 6–17–24; 8:45 am]

BILLING CODE 7555–01–P

NUCLEAR REGULATORY COMMISSION

[NRC–2023–0194]

Information Collection: Financial Protection Requirements and Indemnity Agreements

AGENCY: Nuclear Regulatory Commission.

ACTION: Renewal of existing information collection; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) invites public comment on the renewal of Office of Management and Budget (OMB) approval for an existing collection of information. The information collection is entitled, “Financial Protection