

The NOAA Technology Partnerships Office Strategic Plan

2022-2025



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Improve Awareness and Application of NOAA's Technology Transfer

SBIR Goal: Enhance Job Creation within the U.S. Economy

Increase the number of NOAA SBIR proposals from underserved economies

Increase the number of Phase III commercialization projects through NOAA SBIR

Increase public private partnerships in the Blue Economy

Encourage engagement between federal and private research and development to increase the potential for commercialization

Office Goal: Improve TPO Integration, Function and Profile

Increase Stakeholder Engagement

Improve awareness of NOAA's Partnership Activities

Improve internal controls, coordination, and management

Increase TPO/NOAA integration with NOAA and interagency groups

Improve Program Data Management and Reporting Capabilities

Introduction

The NOAA Technology Partnerships Office (TPO) consists of two unique and varied programs, the **Small Business Innovation Research Program** and **Technology Transfer Program**, both of which are required by law for NOAA to execute. The common thread between the two programs is the *successful commercialization of innovative technologies in support of a strong and resilient U.S. economy*.

As the NOAA commercialization office, the TPO is the NOAA focal point for research to commercial (R2C) transition activities and is an important component of NOAA's public/private partnership activities. The TPO is a member of the NOAA Line Office Transition Managers Committee and coordinates its planning and reporting through NOAA's Science Council.

For administrative and budget purposes, the TPO is located in the NOAA Office of Oceanic and Atmospheric Research (OAR) under the Office of Research Transitions and Application (RTA). However, TPO's two programs support and serve all NOAA Labs, Centers, and Programs. Funding for the Office is provided by each Line Office through the NOAA Direct Bill process, in addition to a small annual appropriation. As the focal point for NOAA's research and development activities, OAR provides the majority of the funding for the TPO.

The following document is a guide for the strategic execution of both programs and for the office as a whole. The document was developed by TPO staff in order to ensure the programs meet their legislative mandates, are responsive to the mission of the Agency, and are meeting the strategic goals of the elected Administration.

TPO Operations and Management

The operations and management for TPO are governed by the set of documents and processes outlined below. These core documents are reviewed and updated annually to ensure progress to plan and consistency with current priorities. This annual review constitutes the TPO Strategic Planning process and the documents taken as a whole constitute the TPO Operations and Management Plan.

Strategic Plan

The Strategic Plan that follows is designed to provide guidance and structure to TPO activities over the medium term by describing the activities the office will undertake to meet its legislative mandates, contribute to the NOAA mission, and address the strategic priorities that have been identified by the current Administration.

Annual Priorities Document

The Annual Priorities will define TPO Leaderships' top priorities from the Strategic Plan for each Program for the coming year. This document will include more specific tasks and will inform the employee annual performance plans.

Staffing Plan

The TPO staffing plan is developed in conjunction with the Office of Oceanic and Atmospheric Research on a regular basis. The minimum functional requirements identified in the Strategic Plan will inform the Staffing Plan for the office.

Functional Org Chart

The Functional Organization Chart shows the mission focus areas covered by each staff member on the TPO team.

Roles and Responsibilities

This document defines the key roles and responsibilities for each TPO employee, as well as their functional backups. This document will complement the employee performance plans, but will provide more detailed information.

Direct Bill Budget Request

Each Spring, the TPO creates its annual budget request for the Chief Financial Officers (CFO) Council. The budget request is based on the previous years' request with any budget increases highlighted for the coming fiscal year. Budget increases for rent and employee compensation are anticipated. Other budget increases must be justified through linkages to the strategic plan.

Annual Spend Plan

In the Fall, the TPO prepares its Spend Plan for the year, which is provided to OAR Budget Execution. The spend plan guides the allocation of financial resources for the year.

Vision, Mission and Positioning Statement

Technology Partnerships Office

Fostering innovation, partnerships, and economic growth

Vision:

A world in which vibrant and resilient ecosystems, communities, and economies are enriched through NOAA's strategic public-private research partnerships, scientific and technological advancements, and investments in innovation-based small businesses.

Mission:

To serve NOAA and the U.S. economy by transferring NOAA's scientific and technological innovations to commercial applications, facilitating strategic public-private partnerships, and investing in small business research and development related to NOAA's mission areas.

Technology Transfer Program

Increasing the impact of public investments in NOAA science

Mission:

To promote increased use and commercialization of NOAA's innovative technologies and knowledge by facilitating strategic partnerships and ensuring the rapid and cost-effective transfer of intellectual property from NOAA labs and programs to other federal agencies, academia, and the U.S. private sector.

Small Business Innovation Research Program

Seeding innovation through American small businesses

Mission:

To stimulate U.S. economic and business growth through the commercialization of innovative mission-relevant technologies by investing NOAA research funds in small businesses and providing education and support to entrepreneurs throughout the process of researching, developing, and commercializing products or services.

TPO Positioning Statement

TPO is a research support office that drives innovation across NOAA. The office oversees two programs: the Small Business Innovation Research (SBIR) Program and the Technology Transfer Program. Through its programs, TPO awards grants to small businesses to support technological innovation, manages NOAA's intellectual property portfolio, helps transfer NOAA

technology to the commercial market, and facilitates NOAA's public-private research partnerships. As NOAA's primary interface with private-sector innovation, TPO supports the NOAA mission, stimulates innovation, and strengthens the U.S. economy.

Authorization and Legislative Requirements

Technology Transfer Program

Key Authorizing Legislation

Stevenson-Wydler Act of 1980 (P.L. 96-480)

- Establishes the ORTA (TPO)

Bayh-Dole Act of 1980 (P.L. 96-517)

- Allows grantees to retain title to inventions made with federal funds
- Allows the federal government labs to grant exclusive patent licenses to technologies

Federal Technology Transfer Act of 1986 (P.L. 99-502)

- Scientists are required to consider technology transfer as a responsibility and those activities should be included in their performance
- Allows federal labs to enter into Cooperative Research and Development Agreements
- Allows labs to waive their rights in intellectual property

Technology Transfer Required Minimum Functions of the NOAA TPO

The TPO is the office responsible for executing the functions of the **Office of Research and Technology Applications** or ORTA required under Stevenson-Wydler, including technology assessments, external communication of NOAA technology opportunities, technical assistance for external partners, and coordination with the Federal Laboratory Consortium and NIST on technology transfer.

Through its Technology Transfer Program, and in coordination with NOAA General Counsel, the TPO is the one office in NOAA responsible for:

- Receiving new invention disclosures,
- Requesting intellectual property ownership rights determinations,
- Facilitating patent filings, and
- Negotiating license agreements for NOAA's patented technology.

The TPO/T2 Program is responsible for the education and engagement of lab staff on technology transfer and the processing of Cooperative Research and Development Agreements on behalf of NOAA laboratories as required under the Federal Technology Transfer Act.

The processes and procedures for executing Technology Transfer in NOAA are codified in [NOAA Administrative Order 201-103](#). The procedures for the execution of the Technology Transfer Program are detailed in the Technology Transfer Program Handbook.

Legislative Requirements for the Execution of Federal Technology Transfer

- 1. Manage the Office of Research and Technology Applications (ORTA)**
 - 1.1. Invention disclosure and technology assessment
 - 1.2. Promote NOAA Technologies
 - 1.3. Engage with the FLC, NIST, and other organizations
 - 1.4. Customer service and technical assistance
 - 1.5. Facilitate or stimulate the transfer of technology for the benefit of the region, state, or local jurisdictions where NOAA Labs are located.
 - 1.6. Develop and promulgate internal policies
- 2. Manage NOAA's Intellectual Property, Licensing, and External Marketing of Technologies**
 - 2.1. Make potential partners aware of technology and technical capabilities
 - 2.2. Identify to prospective partners the value of utilizing federal technologies
 - 2.3. Recognize and promulgate internally the understanding that technology transfer, consistent with mission responsibilities, is a responsibility of each laboratory science and engineering professional
 - 2.4. Work closely with technical staff and laboratory management
 - 2.5. Understand and appreciate issues related to commercial markets and commercialization, such as production and distribution
- 3. Manage NOAA's Cooperative Research and Development Agreements**
 - 3.1. Develop NOAA CRADAs
 - 3.2. Negotiate CRADAs
 - 3.3. Negotiate licensing agreements under CRADAs
 - 3.4. Ensure minimum rights for federal labs
 - 3.5. Promulgate NOAA policies to execute the function and ensure compliance
 - 3.6. Records maintenance
- 4. Conduct Education and Training of Employees for Technology Transfer**
 - 4.1. Legislative mandate for technology transfer
 - 4.2. Technology transfer mechanisms and procedures
 - 4.3. Technology transfer success stories and lessons learned
 - 4.4. Intellectual property and property rights
 - 4.5. Invention disclosure

Small Business Innovation Research Program

Key Authorizing Legislation

Small Business Act of 1953

Title II of Pub.L. 83–163 ch. 282, 67 Stat. 232

The Small Business Act is the Act of Congress which created the Small Business Administration. It was enacted July 30, 1953, and it was codified at 15 U.S.C. ch. 14A.

Small Business Research and Development Enhancement Act (P.L. 102-564) Originally passed in December of 2000, the program was reauthorized until September 30, 2008 by the Small Business Reauthorization Act of 2000 (P.L. 106-554).

Public Law 114-328 ([SBIR/STTR Reauthorization Act of 2017](#)) provides the most recent reauthorization of the SBIR Program.

The Small Business Act (the Act) requires that the SBA issue a policy directive setting forth guidance to the Federal Agencies participating in the SBIR and STTR programs (Participating Agencies). The 2020 [SBIR/STTR Policy Directive](#) outlines how agencies must generally conduct their programs. When incorporating SBIR/STTR policy into agency-specific regulations and procedures, Participating Agencies may develop and apply processes needed to implement the policy effectively; however, no Participating Agency may develop and apply policies, directives, or clauses, that contradict, weaken, or conflict with the policy as stated in the directive.

TPO Management of SBIR

The Technology Partnerships Office manages the SBIR Program and Commercialization Assistance Program for NOAA. The TPO works through the NOAA Science Council to determine SBIR Topics for Phase I grant competitions and with the NOAA Acquisition and Grants Office (AGO) to issue solicitations and select awardees. The TPO works with NOAA Finance to receive SBIR award funds each year. SBIR awards are funded through a 3.6% set aside of NOAA's extramural research and development budget.

NOAA's SBIR Program funds its Phase I grants at \$150,000 per award. The awardees are selected through a panel review process and the award period for Phase I is six months. Phase II awards are competitively selected from the Phase I awardees based on their innovation and commercial potential. NOAA's Phase II awards are \$500,000 for a two-year period.

Responsibilities for Small Business Innovation Research Agencies and Departments

1. Unilaterally **determine the categories of projects** to be included in its SBIR program, giving consideration to maintaining a portfolio balance between exploratory projects of high technological risk and those with greater likelihood of success.
2. **Release SBIR solicitations** in accordance with the SBA master schedule

3. Unilaterally **receive and evaluate proposals** resulting from Program Solicitations, **select Awardees, issue Funding Agreements**, and inform each Awardee under such agreement, to the extent possible, of the expenses of the Awardee that will be allowable under the Funding Agreement.
4. Require a succinct Commercialization plan with each proposal submitted for a Phase II award.
5. **Collect and maintain information** from Applicants and Awardees and provide it to SBA to develop and maintain the database, as identified in § 11(c) of this Policy Directive.
6. Administer its own SBIR Funding Agreements or delegate such administration to another agency. Such administrative services include the use of assisted acquisition service providers under the terms and conditions of a properly executed Interagency Agreement.
7. Include provisions in each SBIR Funding Agreement setting forth the respective rights of the United States and the Awardee with respect to Intellectual Property rights and with respect to any right to carry out follow-on research.
8. Ensure that the rights in Data developed under each Federally-funded SBIR Phase I, Phase II, and Phase III award are protected properly.
9. **Make payments to Awardees** of SBIR Funding Agreements on the basis of progress toward or completion of the Funding Agreement requirements and in all cases make payment to Awardees under such agreements in full, subject to audit, on 63 or before the last day of the 12-month period beginning on the date of completion of such requirements.
10. **Provide an annual report** on the SBIR program to SBA, as well as other information concerning the SBIR program.
11. Include in its **annual performance plan** required by 31 U.S.C. 1115(a) and (b) a section on its SBIR program, and submit such section to the Senate Committee on Small Business and Entrepreneurship and to the House Committees on Science, Space and Technology and Small Business.
12. **Establish the agency's commercialization benchmarks** and include the information necessary to implement the benchmarks in each solicitation.
13. Agencies shall **evaluate risks of fraud, waste, and abuse** in each application, monitor and administer SBIR/STTR awards, and create and implement policies and procedures to prevent fraud, waste and abuse in the SBIR/STTR program.

Discretionary Activities Under the SBIR Program

Technical and Business Assistance - Agencies may enter into agreements with 1 or more vendors to provide technical and business assistance to SBIR Awardees, which may include access to a network of scientists and engineers engaged in a wide range of technologies, assistance with product sales, intellectual property protections, market research, market validation, and development of regulatory plans and manufacturing plans, or access to technical and business literature available through on-line databases. For a term not to exceed 5 years, each agency may select 1 or more vendors from which small business concerns may obtain assistance. Such selection must be based on competitive and merit-based criteria.

Connections to OAR Strategy and Implementation

The two programs managed by the NOAA Technology Partnerships Office, the **Small Business Innovation Research (SBIR)** Program and the **Technology Transfer Program** were specifically authorized by Congress to increase innovation in the U.S. economy, specifically with small and medium-sized businesses. While NOAA labs and our academic partners deliver vast amounts of innovative research, the private sector is uniquely positioned to develop innovative technologies that are outside of the domain of a federal research program. These technologies range from high-risk, high-reward to developing commercial instruments for enhanced research. Either way, these innovations are often beyond the scope of federal research. The NOAA TPO ensures that these activities are executed and their innovative results are successfully brought into the NOAA mission space.

Following are TPO's connections and contributions to the OAR Strategy for 2020-2026.

Strategies to Enable Continued Delivery of World-Class Science

Reference: <https://research.noaa.gov/Portals/0/Files/OAR%20Strategy%202020-2026.pdf>, Pages 10-11.

1. Deliver world-class science together

“OAR will collaborate with other NOAA Line Offices, government, academia, non-profit, industry, and international partners.”

TPO is an integral component of this OAR strategy. *The successful timely execution of SBIR grants, Cooperative Research and Development Agreements, and Licensing Agreements for NOAA technologies are critical to this strategy.* The TPO will seek out new and different ways to communicate across these diverse groups to ensure the delivery of world-class science together.

2. Develop the next-generation workforce

“With a focus on diversity and inclusion, OAR will broaden its talent pool to reflect multidisciplinary skill sets. OAR will develop leadership and management skill sets across the workforce to prepare for succession planning and the demands of the future.”

TPO supports this strategy through training, staff dedicated to improving diversity and inclusion, and workforce planning. As well, the *SBIR Program is Congressionally mandated to foster and encourage participation in innovation and entrepreneurship by women and socially or economically disadvantaged persons.* Moving forward, TPO will seek to reach as broad and diverse an audience as possible with its stakeholder engagement and communication activities.

3. Prioritize mission-relevant research

“To strengthen and scale the relationship between OAR and the other Line Offices, OAR will leverage communication and process improvement experts, social scientists, and other relevant subject matter experts.”

TPO’s role is to enable the successful implementation of mission relevant research, including through the private sector. TPO houses the subject matter experts in the management of the NOAA intellectual property portfolio, the systematic and legal transfer of NOAA technology, and the execution of Cooperative Research and Development Agreements. The TPO also retains extensive experience in grants management and small business R&D commercialization related to NOAA’s mission. Across both of its programs, the TPO is an invaluable resource for all NOAA. Moving forward, TPO will increase its stakeholder engagement to better communicate its role and expertise, as well as to ensure ongoing mission-relevance of our activities.

4. Strengthen internal and external collaboration

“OAR will identify and improve processes and structures that facilitate stronger and more consistent collaboration across the organization, expanding the use of existing tools and forums. OAR will establish a standard approach for partnerships to maximize the value of each relationship, promote a unified message, and accelerate shared objectives.”

As a focal point for a large segment of NOAA’s cooperative engagements with the private sector, the TPO should be a key player in this strategy. Our relationships with NOAA General Counsel and U.S. industry, as well as our history of working across NOAA Line Offices, provides us with a unique and valuable perspective. In the future, TPO will seek to build better relationships with the private sector to improve the two-way transfer of technology and to increase opportunities for collaboration.

5. Leverage new technology and advance computing capability

“OAR will engage the external community to maintain awareness of new technology and explore innovative ways to acquire and use it. OAR will work across NOAA to develop a requirements-based approach to computing, accelerating its adoption and investing in its infrastructure to advance environmental modeling and achieve next-generation research.”

The TPO focus on commercialization of NOAA technologies and NOAA-funded innovative R&D is a critical element to the success of OAR and NOAA’s mission. *TPO has a unique focus on private sector contributions to NOAA’s mission, especially with small, women-owned, and disadvantaged businesses. The TPO is the only NOAA office with the goals of increasing commercialization while supporting small, and otherwise disadvantaged businesses. Increased participation by a diversity of groups will help NOAA to better accomplish its mission.* The successful completion of our mission goals and priorities contribute not only to the success of OAR and NOAA, but to the success of

the Department of Commerce and the U.S. economy as a whole. In the future, TPO will work with the Labs and Programs to continue to expand the use of CRADAs and to expand the use of Open Source technologies, which will allow new and diverse businesses to participate in and contribute to NOAA's mission.

OAR Goal 4: Drive Innovative Science

Cultivate and deliver mission-relevant research to lead the environmental science community.

- 4.1 Reinforce a culture of innovation and adaptability
- 4.2 Invest in high-risk, high-reward science
- 4.3 Accelerate the delivery of mission-ready, next-generation science

TPO Strategic Plan 2022-2025

1. T2 Goal: Enhance Innovation within NOAA and the Nation
 - 1.1. **Increase identification and disclosure of NOAA-developed Technologies for Transition to Commercial Applications**
 - 1.1.1. Develop and release NOAA updated policies and procedures for technology transfer
 - 1.1.2. Implement online forms and documents to speed disclosure and transition process
 - 1.1.3. Identify new methods to identify NOAA opportunities for Commercial Transition
 - 1.2. **Increase the number of Cooperative Research and Development Agreements (CRADAs) between NOAA Labs/Centers and the U.S. private sector**
 - 1.2.1. Increase T2 engagement with NOAA Working Groups
 - 1.2.2. Implement improved procedures and documents to facilitate and speed CRADA development
 - 1.2.3. Increase direct engagement with state and local development, private industry to encourage partnerships.
 - 1.3. **Increase the transition rate for NOAA technologies into commercial applications**
 - 1.3.1. Work with GC and CI Program to define scope of Government Use license in CI agreements.
 - 1.3.2. Develop full and complete public summaries for all available NOAA technology.
 - 1.3.3. Create T2 success story template and a complete set of T2 written successes.
 - 1.3.4. Promote existing NOAA 'Omics technologies that are available for commercial adoption (via open source or license agreement).
 - 1.4. **Increase the use of NOAA data to develop new commercial products and services**
 - 1.4.1. Assist with development of NOAA Data Licensing Guidance to ensure NOAA's data are by default "open" with no restrictions on their use or reuse, unless specifically otherwise restricted by law, regulation, or policy.
 - 1.4.2. Promote availability of NOAA data products through TPO website and Federal Laboratory Consortium.
 - 1.5. **Improve Awareness and Application of NOAA's Technology Transfer**
 - 1.5.1. Conduct systematic and ongoing training for NOAA staff
 - 1.5.2. Improve stakeholder engagement and communication.

- 1.5.3. Increase integration of Technology Transfer into day-to-day NOAA operations

2. SBIR Goal: Enhance Job Creation within the U.S. Economy

- 2.1. **Increase the number of NOAA SBIR proposals from underserved economies**
 - 2.1.1. Conduct targeted marketing and outreach to underserved locations
 - 2.1.2. Increase stakeholder engagement with underrepresented populations
 - 2.1.3. Conduct targeted outreach to the private sector to solicit gap filling capabilities and partnership opportunities, including socially disadvantaged small businesses and small businesses located in underserved communities.
- 2.2. **Increase the number of Phase III commercialization projects through NOAA SBIR**
 - 2.2.1. Identify and publicize all available NOAA SBIR Ph II completions
 - 2.2.2. Develop NOAA SBIR Tech Marketplace on TPO website
 - 2.2.3. Develop promotion strategy for Tech Marketplace throughout NOAA and other federal agencies
- 2.3. **Increase public private partnerships in the Blue Economy**
 - 2.3.1. Identify Aquaculture sub-topic(s) to include in Ph I SBIR solicitations
 - 2.3.2. Promote and encourage collaboration across the NOAA Blue Economy sectors
 - 2.3.3. Work with private industry to innovate new cost-effective and portable (e.g. miniature) technology for oceanographic and marine meteorological observations to improve marine forecasts and warnings
 - 2.3.4. Expand Blue Tech Small Business Innovation Research Program (SBIR) opportunities.
- 2.4. **Encourage engagement between federal and private research and development to increase the potential for commercialization**
 - 2.4.1. Identify Omics sub-topic(s) to include in Ph I SBIR solicitations
 - 2.4.2. Identify Citizen Science and Education sub-topic(s) to include in Ph I SBIR solicitations
 - 2.4.3. Identify UxS sub-topic(s) to include in Ph I SBIR solicitations
 - 2.4.4. Highlight importance of AI across all mission areas in Ph I sub-topics

3. Office Goal: Improve TPO Integration, Function and Profile

- 3.1. **Increase Stakeholder Engagement**
 - 3.1.1. Create communications and engagement plan.
 - 3.1.2. Complete TPO website redesign.

- 3.1.3. Prioritize Blue Economy and Blue Tech in projects conducted by NOAA scholars, fellows, and interns.
- 3.1.4. Increase involvement in NOAA R&D by private sector and philanthropic organizations.
- 3.2. **Improve awareness of NOAA's Partnership Activities**
 - 3.2.1. Develop and track monthly a NOAA partnership inventory.
- 3.3. **Improve internal controls, coordination, and management**
 - 3.3.1. Complete and annually update SBIR and T2 Handbooks
 - 3.3.2. Identify and engage SBIR grant review community
 - 3.3.3. Review financial controls and create SOPs
 - 3.3.4. Develop SOPs for SBIR Grants Process
- 3.4. **Increase TPO/NOAA integration with NOAA and interagency groups**
 - 3.4.1. Participate in NOAA and interagency Blue Economy meetings
 - 3.4.2. Continue membership on the Line Office Transition Managers Committee
 - 3.4.3. Participate in NOAA Science Council meetings
- 3.5. **Improve Program Data Management and Reporting Capabilities**
 - 3.5.1. Migrate SBIR Program data to accessible solution
 - 3.5.2. Identify key metrics for SBIR commercialization success and annual reporting
 - 3.5.3. Develop SBIR reporting dashboard