**U.S. Department of Commerce, NIST**
**FY 2025 NIST Small Business Innovation Research Program Phase I**
**Notice of Funding Opportunity Number: 2025-NIST-SBIR-01**

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| **Funding Opportunity Description:** | The NIST Small Business Innovation Research (SBIR) Program Phase I is seeking applications from eligible applicants to explore the technical merit or feasibility of an innovative idea or technology with the aim of developing a viable product or service, and/or a standard, that will be introduced to the commercial marketplace. |
| **Announcement Type:** | Initial |
| **Funding Instrument:** | Cooperative Agreement. |
| **Assistance Listing (CFDA Number):** | 11.620: Science, Technology, Business and/or Education Outreach |
| **Award Project Period:** | Project performance period of six (6) months. |
| **Goals & Objectives:** | The SBIR Program's main goals and objectives are to strengthen the role of innovative small business concerns (SBCs) in Federally-funded research or research and development (R/R&D) including research in support of a standard (prestandardization research). Specific program goals are to: (1) stimulate technological innovation; (2) use small business to meet Federal R/R&D needs; (3) foster and encourage participation by socially and economically disadvantaged small businesses and by women-owned small businesses in technological innovation; and (4) increase private sector commercialization of innovations derived from Federal R/R&D, thereby increasing competition, productivity, and economic growth. |
| **Funding Amount:** | In Fiscal Year 2025 (FY25), NIST anticipates funding up to ten (10) awards for up to $100,000 per award with up to an additional $6,500 for Technical and Business Assistance (TABA), see section 5.12 for TABA information. |
| **Cost Share/Matching Requirements:** | Non-federal cost share is not required. |

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| **Eligible Applicants:** | Applicants must qualify as a Small Business Concern for Research/Research and Development (R/R&D) purposes, as defined in Section 1.05 of this NOFO, at the time of award. In addition, the primary employment of the principal investigator must be with the small business at the time of the award and during the conduct of the proposed research. Primary employment means that more than one-half of the principal investigator's time is spent working with the small business. Primary employment with a small business precludes full-time employment with another organization. |
| **Estimated Number (can give a range) and Type of Award(s):** | Up to ten (10) Cooperative Agreement award(s). |
| **Submission Dates and Times:** | Full Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, on December 27, 2024. Applications received after this deadline will not be reviewed or considered. |
| **How to Apply:** | Applications must be submitted using Grants.gov. Paper applications will not be accepted. |
| **Review and Selection Process:** | All applications will be evaluated and judged on a competitive basis. Applications will be initially screened to determine eligibility, completeness, and responsiveness to this NOFO (see Sections 4.02 and 7.03). Applications passing the initial screening will be evaluated in accordance with the evaluation criteria (see Section 4.03). Each application will be judged on its own merit. Final selection decisions will be made by the Selecting Official, the Director of the NIST Technology Partnerships Office, or designee. |
| **Agency Contacts:** | **Programmatic and Technical Questions:**<br>Jacqueline Gray<br>Jacqueline.gray@nist.gov<br><br>**Grants Rules and Regulations**<br>Dean Iwasaki<br>NOFO@nist.gov |
| **Additional Information:** | On April 22, 2024, the Office of Management and Budget (OMB) published updates to the OMB Guidance for Grants and Agreements located in Title 2 of the Code of Federal Regulations (2 CFR), now called the OMB Guidance for Federal Financial Assistance. This |

updated OMB Guidance for Federal Financial Assistance (2 CFR) is effective for all awards issued by DOC/NIST on October 1st, 2024, or later. Applicants can find these recent revisions to 2 CFR here: **https://www.federalregister.gov/documents/2024/04/22/2024-07496/guidance-for-federal-financial-assistance.**

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## PROGRAM DESCRIPTION AND FEDERAL AWARD INFORMATION

### 1.01 Introduction

The National Institute of Standards and Technology (NIST) invites small businesses to submit Phase I research applications under this Notice of Funding Opportunity (NOFO). Science and technology-based firms with strong research capabilities in any of the areas listed in Section 8.0 of this NOFO are encouraged to participate. Applications must sufficiently identify and clearly address one of the following options upon which to submit its technical proposal;

(a) a specific NIST technical program area that falls within one of the research areas described in Section 8.0 (see Section 3.02.02(1)(a) and (b)); or
(b) a NIST-patented technology available for licensing (see Section 3.02.02(1)(c)).

**Only FY 2025 Phase I applications may be submitted in response to this NOFO. Phase II applications are not being accepted at this time.** NIST publishes a Phase II NOFO approximately 30 days prior to the end of the previous year's Phase I period of performance to request Phase II applications. That NOFO provides instructions for Phase I awardees to prepare a Phase II application and the closing date for submission of applications; only the previous year's Phase I awardees are eligible to submit a Phase II application.

The Small Business Innovation Research (SBIR) program was originally established in 1982 by the Small Business Innovation Development Act (P.L. 97-219), codified at 15 U.S.C. § 638. It was then expanded and extended by the Small Business Research and Development (R&D) Enhancement Act of 1992 (P.L. 102-564), and received subsequent reauthorization and extensions, the most recent of which extends the SBIR program through 2025 (P.L. 117-183).

Eleven Federal agencies implement SBIR by setting aside a portion of their external research and development budget each year to fund research applications from small science and technology-based firms. The statutory purpose of the SBIR Program is to strengthen the role of innovative small business concerns (SBCs) in Federally-funded research or research and development (R/R&D). Specific program goals are to: (1) stimulate technological innovation; (2) use small business to meet Federal R/R&D needs; (3) foster and encourage participation by socially and economically disadvantaged small businesses and by women-owned small businesses in technological innovation; and (4) increase private sector commercialization of innovations derived from Federal R/R&D, thereby increasing competition, productivity, and economic growth.

The United States' approach of leveraging the contributions of private sector innovators and government-supported research and development has fueled competitiveness and technological progress to the benefit of the U.S. and global economy. A critical component of the innovation ecosystem of the U.S. is the standardization system. The decentralized, bottom up, sector-based approach to standardization led by the private sector develops market-driven, voluntary, consensus-based standards. The U.S. Government (USG) supports this system by participating in the standards development process, alongside other sectoral representatives from industry, academia, and civil society. A critical component of the standards system is prestandardization research and development, including the directing of research to meet or anticipate specific standardization goals.

The NIST FY 2025 SBIR Program Phase I identifies and solicits applications in topics that fall within NIST's mission, as described in Section 8.0 of this NOFO, and allow collaboration between NIST scientists and the SBIR awardees whenever possible. Collaboration on prestandardization research and development aligned with NIST technical programs may include measurement and test methods, performance metrics, validated datasets and tools, frameworks, or other research deliverables to align with the needs of a standard or conformity assessment scheme.

When reviewing applications, NIST gives high priority to SBC's that participate in or conduct energy efficiency or renewable energy system R&D prospects, consistent with Executive Order (EO) 13329, "Encouraging Innovation in Manufacturing," § 1203(e) of the Energy Independence and Security Act of 2007 (P.L. 110-140), codified at 15 U.S.C. § 638(z), and the Small Business Administration (SBA) Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Program Policy Directive, § 9.

For any SBIR award that requires a license to use a NIST-owned invention covered by a patent or patent application, the SBIR awardee must contact NIST's Technology Partnerships Office for a license to use the NIST-owned invention. Such awardees will be granted a non-exclusive research license and will be given the opportunity to negotiate a non-exclusive or an exclusive commercialization license to the NIST-owned invention, in accordance with the Federal patent licensing regulations, set forth in 37 C.F.R. Part 404, and to the extent that such NIST-owned invention is available for licensing and has not otherwise been exclusively licensed to another party. It is the goal of this program to position the SBIR awardee to use and build upon such licensed NIST-owned invention with the awardee's own innovation to develop a commercially viable product based on the NIST-owned invention.

## 1.02 Three-Phase Program

The SBIR statute (15 U.S.C. § 638) requires the Department of Commerce to establish a three-phase SBIR program by reserving a percentage of its extramural R&D budget to be awarded to SBCs for innovation research. SBIR policy is provided by the SBA through the SBIR/STTR Policy Directive. The funding vehicles for NIST's SBIR program in both Phase I and Phase II are cooperative agreements. NIST's authority to implement its SBIR programs through cooperative agreements is 15 U.S.C. § 272(b)(4). NIST's programmatic authorities for the research areas listed in this NOFO are found at 15 U.S.C. §§ 272(b) and (c). The nature of NIST's "substantial involvement" will generally be collaboration with the awardees in carrying out the project's approved scope of work. Administrative requirements for grants and cooperative agreements, set forth at 2 C.F.R. Part 200, will apply to NIST SBIR awards.

### 1.02.01 Phase I – Feasibility Research

The purpose of Phase I is for NIST to determine the technical feasibility of the research, including prestandardization research and development described in Section 1.01, preliminary commercialization merit of the proposed effort, and the quality of the awardee's performance. The application should concentrate on describing research that will significantly contribute to proving the feasibility of the proposed Phase II research and commercialization potential, prerequisites to receiving further support in Phase II. Each Phase I award is for up to $100,000 and up to a six (6) month period of performance. Up to an additional $6,500 may be requested for Technical and Business Assistance (TABA); see section 5.12 for more information about TABA. NIST's inclusion of TABA funds in the award will be subject to the availability of NIST funding.

### 1.02.02 Phase II – Research and Development

All Phase I awardees under this NOFO will be given the opportunity to submit a Phase II application following completion of Phase I. Instructions for Phase II application preparation and submission requirements will be published in a NOFO approximately 30 days prior to the end of the FY2025 Phase I performance period.

In Phase II, work from Phase I that exhibits potential for commercial application is further developed. Phase II is the R&D or prototype development phase. To apply for a Phase II award, each Phase I awardee will be required to submit a comprehensive application outlining the proposed research and a detailed plan to commercialize the final product. Each NIST Phase II award is for up to $400,000 and

up to a 24-month period of performance. One year after completing the Phase II R&D activity, the awardee shall be required to report on its commercialization activities.

### 1.02.03 Phase III – Commercialization

Phase III refers to work that derives from, extends, or completes an effort made under prior SBIR funding agreements, but is funded by sources other than the SBIR Program. Phase III may be for products, production, services, R/R&D, or a combination thereof.

### 1.02.04 Commercialization Readiness Pilot Program

15 U.S.C. § 638(gg) authorizes agencies to establish a Commercial Readiness Pilot Program (CRPP). Under a CRPP, follow-on funding (up to an additional $100,000) may be provided to selected awardees after competition of Phase II. The funding would be used to support advancement toward Phase III and to increase the likelihood of commercialization. NIST is under no obligation to make any CRPP awards.

## 1.03 SBIR Applicant Eligibility and Limitation

### 1.03.01 Applicant Qualifications

Each applicant must qualify as an SBC for R/R&D purposes, as defined in Section 1.05 of this NOFO, at the time of the award. In addition, the primary employment of the principal investigator must be with the small business at the time of the award and during the conduct of the proposed research. Primary employment means that more than one-half of the principal's investigator's time is spent working with small business. Primary employment with a small business precludes full-time employment with another organization. Occasionally, deviations from this requirement may occur, which must be approved in writing by the NIST Grants Officer after consultation with the SBIR Program Manager. Further, a small business may only replace the principal investigator on an SBIR Phase I award if the NIST Grants Officer provides prior written approval. Personnel obtained through a Professional Employer Organization or other similar personnel leasing company may be considered employees of the awardee.

The R/R&D work must be performed in the United States. Requests for an exemption must be submitted in writing at the time of application submission. Only rare and unique circumstances will be considered for an exemption. The NIST Grants Officer must approve each exemption and its terms in writing.

NIST has elected to not use the authority that would allow venture capital operating companies (VCOCs), hedge funds or private equity firms to participate in the SBIR Program. Therefore, applications in which work is performed by VCOCs will not be considered for award. For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the awardee. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/subaward or purchase agreements may not exceed one-third of the total award. For Phase II, a minimum of one-half of the research and/or analytical effort and usage fees, and other subcontract/subaward or purchase agreements may not exceed one-half of the total award.

Each applicant will be required to provide certain information via www.sbir.gov, as well as information required by the SBIR/STTR Policy Directive (see Appendices I-III). Each SBC applying for an award is required to update the appropriate information in the SBA database on SBIR.gov for any of its existing and prior Phase II awards.

Applicants may not participate in the review of applications.

The statement of work of an SBIR award made under this NOFO cannot overlap with the statement of work of an existing NIST Cooperative Research and Development Agreement (CRADA) with the awardee. NIST will consider the issue of any potential overlap on a case-by-case basis.

### 1.03.02 Company Registry Requirements

SBA maintains a Company Registry to track ownership and affiliation requirements for all companies applying to the SBIR Program. **Each Phase I applicant must register in the Company Registry prior to submitting an application. The applicant must save its information from the registration in a .pdf document and append this document to the SF-424 (R&R) form as described in Section 7.03.9 of this NOFO.** All applicants are required to report and/or update their registration information in the SBA Company Registry prior to each SBIR application submission or if any information changes prior to an award.

### 1.03.03 Performance Benchmark Ratings Requirements

#### Performance Benchmark Requirements

Companies with multiple SBIR/STTR awards must meet minimum performance benchmark requirements to be eligible to apply for a new Phase I or Direct-to-Phase II award. The performance benchmark requirements address the extent to which an awardee progresses a project from Phase I to Phase II (i.e., Phase I to Phase II

Transition Rate Benchmark) and the extent to which an awardee progresses a project from Phase II towards commercialization (i.e., Commercialization Rate Benchmark). The purpose of these benchmarks is to ensure that Phase I applicants that have won multiple prior SBIR/STTR awards are progressing towards commercialization. The benchmarks were published in the *Federal Register* for public comment and agreed upon by all 11 SBIR agencies. The Phase I to Phase II Transition Rate Benchmark was published at 78 FR 30951 in May 2013, and the Commercialization Rate Benchmark was published at 78 FR1 59410 in September 2013. The SBIR and STTR Extension Act of 2022 (Public Law 117-183) amended the application of these benchmarks for more experienced firms. This NOFO reflects those statutory changes.

### Phase I to Phase II Transition Rate Benchmark

The Phase I to Phase II Transition Rate Benchmark only applies when a company has received 21 or more Phase I awards during the past five fiscal years, excluding the most recently completed fiscal year. It requires the company to average a ratio of Phase II to Phase I awards of at least 0.25, meaning the company must average one Phase II for every four Phase I awards received during the measurement period.

To calculate the Phase I to Phase II Transition Rate, SBA divides the total number of SBIR and STTR Phase II awards a company received from all agencies during the past five fiscal years by the total number of SBIR and STTR Phase I awards the company received from all agencies during the past five fiscal years, excluding the most recently completed year. The Phase II period begins one year later because Phase II awards rarely occur during the same year as the Phase I.

Below is an example of the Phase I to Phase II Transition Rate Benchmark assessment for three hypothetical companies conducted in Fiscal Year 2023.

| Company | Phase I Awards (2017-2021) | Phase II Awards (2018-2022) | Transition Rate Calculation (Phase II Awards / Phase I Awards) | Assessment Outcome |
|---|---|---|---|---|
| Company A | 21 | 7 | 0.33 | Pass, ratio is equal or greater than 0.25 |
| Company B | 21 | 3 | 0.14 | Fail, ratio is less than 0.25. |
| Company C | 20 | 3 | N/A | N/A –benchmark does not apply, firm has less than 21 Phase I Awards. |

## Commercialization Rate Benchmark

The Commercialization Rate Benchmark only applies when a company has received 16 or more Phase II awards during the past ten fiscal years, excluding the two most recently completed fiscal years. It requires the company to average at least $100,000 of sales and/or investments per Phase II award received during the period; or have received a number of patents equal to or greater than 15% of the number of Phase II awards received during the period. The Commercialization Rate Benchmark calculation is based on data submitted through the SBIR.gov Company Commercialization Report. SBA utilizes reported total sales or revenues—including government designated Phase III awards, total dollars invested, or the number of patents, that resulted at least in part, from work performed under Phase II awards received during the 10-year period to calculate the Commercialization Rate Benchmark. A complete guide with additional details on what should and should not be reported is available here: Guide_for_completing_commercialization_Report_SBIR_Gov_09_15_20.pdf.

To calculate the Commercialization Rate Benchmark, SBA sums the countable commercialization resulting from the specific Phase II awards received during the 10-year period and divides that number by the total number of Phase II awards received during the 10-year period. For determining the Commercialization Rate Benchmark based on patents, SBA divides the number of patents reported from the specific Phase II awards received during the 10-year period by the total number of Phase II awards received during the period.

Below is an example of a Commercialization Rate Benchmark assessment for four hypothetical companies conducted in Fiscal Year 2023.

| Company | Phase II Awards (2011-2020) | Commercialization ($) Resulting from Phase II Awards received between 2011-2020 | Patents Resulting from Phase II Awards received between 2011-2020 | Commercialization Rate (Commercialization $ / # of Phase II Awards) | Patent Rate (# of Patents / # of Phase II Awards) | Assessment Outcome |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| Company A | 16 | $3,200,000 | 1 | $200,000 | .06 | Pass. Commercialization rate meets or exceeds a $100,000 average. It does not matter that the patent rate is below the threshold. |
| Company B | 20 | $1,900,000 | 3 | $95,000 | .15 | Pass. Patent rate is at least 15%. It does not matter that the commercialization rate is below the threshold. |
| Company C | 30 | $2,500,000 | 3 | $83,333 | .10 | Fail. Both the commercialization and patent rates are below the minimums. |
| Company D | 15 | $3,000,000 | 0 | $200,000 | .0 | N/A –benchmark does not apply, firm has less than 16 Phase II Awards. |

## Commercialization Reporting

SBIR and STTR awardees are required to update and maintain their organization's Company Commercialization Report via SBIR.gov. The reporting is accessible when an authorized user (user is SAM.gov verified) accesses its SBIR.gov profile under the "My Dashboard" section. SBIR and STTR Phase II awardees are required to update its commercialization record when applying for new Phase II awards, at the conclusion of a Phase II award, and then voluntarily update the information in the database annually thereafter for a minimum period of 5 years (15 U.S.C. § 638 (k)).

## Increased Performance Standards for More Experienced Firms

The SBIR and STTR Extension Act of 2022 (Pub. Law 117-183) established increased performance standards for more experienced firms. Effective as of April 1, 2023, the statute modifies the Phase I to Phase II Transition Rate Benchmark

and the Commercialization Rate Benchmark based on a higher threshold of received awards.

### Increased Performance Standard for the Phase I to Phase II Transition Rate Benchmark

The Increased Performance Standard for the Phase I to Phase II Transition Rate Benchmark only applies when a company has received or receives 51 or more Phase I awards during the past five fiscal years, excluding the most recently completed fiscal year. It requires the company to average a ratio of Phase II to Phase I awards of at least 0.50, meaning they must average one Phase II for every two Phase I awards received during the measurement period.

### Increased Performance Standard for the Commercialization Rate Benchmark

The Increased Performance Standard for the Commercialization Rate Benchmark establishes two additional tiers, with each tier requiring an elevated performance requirement.

Tier 1 applies when a company has received or receives 51 or more Phase II awards during the past ten fiscal years, excluding the two most recently completed fiscal years. It requires the company to average at least $250,000 in aggregate sales and investments per Phase II award received during the period.

Tier 2 applies when a company has received or receives 101 or more Phase II awards during the past ten fiscal years, excluding the two most recently completed fiscal years. It requires the company to average at least $450,000 in aggregate sales and investments per Phase II award received during the period.

**Please note, patents cannot be used to pass the Increased Performance Standards for the Commercialization Rate Benchmark.**

### Increased Performance Standards Documentation Requirement

The SBIR and STTR Extension Act of 2022 requires companies subject to the increased performance standard for the Commercialization Rate Benchmark to submit to SBA supporting documentation to support reported ***covered sales***. The act defines covered sales as follows (15 U.S.C. § 638 (qq)(3)(B)(iii)(II)):

> In this clause, the term "covered sale" means a sale by a small business concern-

- that the small business concern claims to be attributable to an SBIR or STTR award;
- for which no amount of the payment was or is made using Federal funds;

- which the small business concern uses to meet an applicable increased minimum performance standard under clause (i) [i.e., Increased Performance Standard for the Commercialization Rate Benchmark]; and
- that was or is received during the 5 fiscal years immediately preceding the fiscal year in which the small business concern uses the sale to meet the increased minimum performance standard.

**Please note that government awards received as a prime or subcontractor that satisfy the definition of Phase III and result, at least in-part, from Phase II award(s) received during the measurement period are not considered covered sales because the payment was or is made using Federal funds.**

**Note: For the Fiscal Year 2024 assessment, SBA will provide guidance directly to firms triggering the increased performance standards with instructions for providing the covered sales documentation. SBA anticipates company commercialization reporting system modifications to allow for uploading required documentation will be complete prior to the Fiscal Year 2025 assessment.**

### Consequences of Failure to Meet the Benchmarks

SBA will identify, on June 1 of each year, the companies that fail to meet the Phase I to Phase II Transition Benchmark, the Commercialization Rate Benchmark, or the Increased Performance Benchmarks for More Experienced Firms.

Companies that fail to meet either the Phase I to Phase II Transition Benchmark or the Commercialization Rate Benchmark will not be eligible to submit a proposal for a Phase I (or Direct-to-Phase II) award for a period of one year, beginning from the determination date (June 1).

Companies that fail to meet either of the benchmarks under the Increased Performance Standards for more Experienced Firms may not receive more than 20 total Phase I awards and Direct-to-Phase II awards from each Federal agency during the 1-year period beginning on the date of determination (June 1).

Section 3 of the SBIR/STTR Policy Directive defines a Federal Agency as follows:

> (o) **Federal Agency.** An executive agency as defined in 5 U.S.C. 105, and a military department as defined in 5 U.S.C. 102 (Department of the Army, Department of the Navy, Department of the Air Force), except that it does not include any agency within the Intelligence Community as defined in Executive Order 12333, § 3.4(f), or its successor orders.

### Notification

SBA will notify companies failing either of the benchmarks and the relevant officials at the participating agencies. The information on the companies will not be available to the public, but a confidential list of companies failing the benchmarks are required to be submitted to Congress.

To provide companies with advance warning, SBA notifies companies on April 1 if they are failing any of the benchmark(s). This notification also instructs companies to review the information available on SBIR.gov and to create or update its company commercialization report to ensure SBA utilizes the most complete and accurate data prior to the official assessment date. Companies identifying inaccuracies may provide feedback through the SBIR.gov helpdesk https://www.sbir.gov/feedback. Companies should review and provide any feedback early, to ensure modifications are able to be addressed well in advance of the May 31 deadline.

Because the performance benchmark requirements only affect a company's eligibility for new Phase I (or Direct-to-Phase II) awards, a company that fails to meet any of the required benchmarks may continue working on its current or ongoing SBIR/STTR awards and may apply for and receive new Phase II and Phase III awards.

Performance Benchmarks: General information on the Performance Benchmark requirements is available at https://www.sbir.gov/performance-benchmarks.

## 1.04 Contact with NIST

For general programmatic, electronic submission or grants questions, please contact the appropriate individual:

| Subject Area | Point of Contact |
|---|---|
| Programmatic Questions | Jacqueline Gray<br>Phone: (240) 306-5564<br>E-mail: jacqueline.gray@nist.gov<br>or<br>Nicole Berry<br>Phone: (202) 235-3675<br>E-mail: nicole.berry@nist.gov |
| Electronic Application Submission through Grants.gov | Grants.gov<br>(800) 518-4726<br>E-mail: support@grants.gov |

| | |
|---|---|
| Grant Rules and Regulations | Dean Iwasaki<br>E-mail: nofo@nist.gov with "2025-NIST-SBIR-01" in the subject line |

Applicants may also contact the NIST Hollings Manufacturing Extension Partnership (MEP) for technical assistance with application preparation. More information on obtaining technical assistance from MEP Centers for application preparation can be found in Section 5.13 of this NOFO.

## 1.05 Definitions

(a) General Definitions

Except as specifically noted by citation or reference, all definitions below are excerpted from the SBA SBIR/STTR Policy Directive.

Applicant – The organizational entity that qualifies as an SBC at all pertinent times and that submits a contract proposal or a grant application for a funding agreement under the SBIR/STTR Programs.

Awardee – The organizational entity that receives an SBIR or STTR Phase I, Phase II, or Phase III award. An "SBIR/STTR Awardee."

Commercialization – The process of developing products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes, technologies, or services for sale to or use by the Federal government or commercial markets.

Contract, see 2 C.F.R. § 200.1 – For the purpose of Federal financial assistance, a legal instrument by which a recipient or subrecipient purchases property or services needed to carry out the project or program under a Federal award. For additional information on subrecipient and contractor determinations, see 2 C.F.R. § 200.331.

Cooperative Agreement, see 31 CFR §§ 6302 and 6305 – A legal instrument of financial assistance between a Federal awarding agency and a recipient or a pass-through entity and a subrecipient that is consistent with 31 U.S.C. §§ 6302, 6305:

(1) Is used to enter into a relationship the principal purpose of which is to transfer anything of value to carry out a public purpose of support or stimulation authorized by a law of the United States (see 31 U.S.C. § 6101(3)); and not to

acquire property or services for the Federal Government or pass- through entity's direct benefit or use;

(2) Is distinguished from a grant in that it provides for substantial involvement of the Federal awarding agency in carrying out the activity contemplated by the Federal award.

Covered Individual, see 15 U.S.C. § 638(e)(15) – An individual who—

(1) contributes in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award from a Federal research agency; and

(2) is designated as a covered individual by the Federal research agency concerned.

Essentially Equivalent Work – Work that is substantially the same research, which is proposed for funding in more than one contract proposal or grant application submitted to the same Federal agency, or submitted to two or more different Federal agencies for review and funding consideration; or work where a specific research objective and the research design for accomplishing the objective are the same or closely related to another proposal or award, regardless of the funding source.

Federally Funded Award – A Phase I, Phase II (including a Phase II award under subsection (cc)), or Phase III SBIR or STTR award made using a funding agreement.

Foreign Affiliation, see 15 U.S.C. § 638(e)(16) – A funded or unfunded academic, professional, or institutional appointment or position with a foreign government or government-owned entity, whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary).

Foreign Country of Concern, see 15 U.S.C. § 638(e)(17) – The People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, the Islamic Republic of Iran, or any other country determined to be a country of concern by the Secretary of State.

Funding Agreement – Any contract, grant, or cooperative agreement entered into between any Federal agency and any SBC for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the Federal Government.

Joint Venture – See 13 C.F.R. § 121.103(h).

Malign Foreign Talent Recruitment Program, see 15 U.S.C. § 638(e)(18), citing 42 U.S.C. § 19237 – Is –

(1) Any program, position, or activity that includes compensation in the form of cash, in-kind compensation, including research funding, promised future compensation, complimentary foreign travel, things of non de minimis value, honorific titles, career advancement opportunities, or other types of remuneration or consideration directly provided by a foreign country at any level (national, provincial, or local) or their designee, or an entity based in, funded by, or affiliated with a foreign country, whether or not directly sponsored by the foreign country, to the targeted individual, whether directly or indirectly stated in the arrangement, contract, or other documentation at issue, in exchange for the individual—

(i) engaging in the unauthorized transfer of intellectual property, materials, data products, or other nonpublic information owned by a United States entity or developed with a Federal research and development award to the government of a foreign country, or an entity based in, funded by, or affiliated with a foreign country regardless of whether that government or entity provided support for the development of the intellectual property, materials, or data products;
(ii) being required to recruit trainees or researchers to enroll in such program, position, or activity;
(iii) establishing a laboratory or company, accepting a faculty position, or undertaking any other employment or appointment in a foreign country or with an entity based in, funded by, or affiliated with a foreign country if such activities are in violation of the terms and conditions of the Federal research and development award;
(iv) being unable to terminate the foreign talent recruitment program contract or agreement except in extraordinary circumstances;
(v) through funding or effort related to the foreign talent recruitment program, being limited in the capacity to carry out a research and development award or required to engage in work that would result in substantial overlap or duplication with a Federal research and development award;
(vi) being required to apply for and successfully receive funding from the sponsoring foreign government's funding agencies with the sponsoring foreign organization as the recipient;
(vii) being required to omit acknowledgment of the recipient institution with which the individual is affiliated, or the Federal research agency sponsoring the research and development award, contrary to the

institutional policies or terms and conditions of the Federal research and development award;

(viii) being required to not disclose to the Federal research agency or employing institution the participation of such individual in such program, position, or activity; or

(ix) having a conflict of interest or conflict of commitment contrary to the terms and conditions of the Federal research and development award; and

(2) a program that is sponsored by—

(i) a foreign country of concern or an entity based in a foreign country of concern, whether or not directly sponsored by the foreign country of concern;

(ii) an academic institution on the list developed under section 1286(c)(8) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. 2358 note; Public Law 115-232); or

(iii) a foreign talent recruitment program on the list developed under section 1286(c)(9) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (10 U.S.C. § 2358 note; Public Law 115-232).

Research or Research and Development (R/R&D) – Any activity that is:

(1) a systematic study directed toward greater knowledge or understanding of the subject studied;

(2) a systematic study directed specifically toward applying knowledge and innovation to meet a recognized but unmet need; or

(3) a systematic application of knowledge and innovation toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

Small Business Concern (SBC) – A concern that meets the SBIR/STTR program eligibility requirements set forth in 13 C.F.R. § 121.702, "What size and eligibility standards are applicable to the SBIR and STTR programs?" (available at https://www.ecfr.gov/cgi-bin/text-idx?SID=3ccaf429aac93292cdf7afdc1689514e&mc=true&node=se13.1.121_1702&rgn=d iv8.

Socially and Economically Disadvantaged SBC (SDB) – See 13 C.F.R. Part 124, Subpart B.

Socially and Economically Disadvantaged Individual – See 13 C.F.R. §§ 124.103

and 124.104.

Standard - A document, established by consensus and approved by a recognized body, that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context. Note: Standards should be based on the consolidated results of science, technology, and experience, and aimed at the promotion of optimum community benefits. (Sources: NISTIR 8074 Vol. 2 from ISO/IEC Guide 2:2004).

Subaward, 2 CFR § 200.1 – An award provided by a pass-through entity to a subrecipient for the subrecipient to carry out part of a Federal award received by the pass-through entity. It does not include payments to a contractor or payments to an individual that is a beneficiary of a Federal program. A subaward may be provided through any form of legal agreement, including an agreement that the pass-through entity considers a contract.

Women-Owned Small Business (WOSB) – An SBC that is at least 51% owned by one or more women, or in the case of any publicly owned business, at least 51% of the stock is owned by women, and women control the management and daily business operations.

(b) Definitions related to rights in data developed under the SBIR program. These definitions are also included in Section 5.04.02 of this NOFO.

All definitions below are excerpted from the SBA SBIR/STTR Policy Directive.

Computer Database – A collection of data recorded in a form capable of being processed by a computer. The term does not include Computer Software.

Computer Programs – A set of instructions, rules, or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

Computer Software -- Computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the software to be reproduced, recreated, or recompiled. Computer Software does not include Computer Databases or Computer Software Documentation.

Computer Software Documentation - Owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the Computer Software or provide instructions

for using the software.

Data - All recorded information, regardless of the form or method of recording or the media on which it may be recorded. The term does not include information incidental to contract or grant administration, such as financial, administrative, cost or pricing or management information.

Form, Fit, and Function Data – Data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, and data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements. For Computer Software it means data identifying source, functional characteristics, and performance requirements, but specifically excludes the source code, algorithms, processes, formulas, and flow charts of the software.

Government Purpose – Any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations or sales or transfers by the United States Government to foreign governments or international organizations. Government Purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose Technical Data or Computer Software for commercial purposes or authorize others to do so.

Operations, Maintenance, Installation, or Training Purposes (OMIT) Data – Data that is necessary for operation, maintenance, installation, or training purposes (but not including detailed manufacturing or process data).

SBIR/STTR Computer Software Rights – The Federal Government's rights during the SBIR/STTR Protection Period in specific types of SBIR/STTR Data that are Computer Software.

(1) The Federal Government may use, modify, reproduce, release, perform, display, or disclose SBIR/STTR Data that are Computer Software within the Government. The Federal Government may exercise SBIR/STTR Computer Software Rights within the Government for:

(i) Use in Federal Government computers;

(ii) Modification, adaptation, or combination with other Computer Software, provided that the Data incorporated into any derivative software are subject to the rights in § 3(ee) of the SBIR/STTR Policy Directive and that the derivative software is marked as containing SBIR/STTR Data;

(iii) Archive or backup; or

(iv) Distribution of a computer program to another Federal agency, without further permission of the Awardee, if the Awardee is notified of the distribution and the identity of the recipient prior to the distribution, and a copy of the SBIR/STTR Computer Software Rights included in the Funding Agreement is provided to the recipient.

(2) The Federal Government shall not release, disclose, or permit access to SBIR/STTR Data that is Computer Software for commercial, manufacturing, or procurement purposes without the written permission of the Awardee. The Federal Government shall not release, disclose, or permit access to SBIR/STTR Data outside the Government without the written permission of the Awardee unless:

(i) The non-Governmental entity has entered into a non-disclosure agreement with the Government that complies with the terms for such agreements outlined in § 8 of the SBIR/STTR Policy Directive; and

(ii) The release or disclosure is—

(A) To a Federal Government support service contractor or their subcontractor for purposes of supporting Government internal use or activities, including evaluation, diagnosis and correction of deficiencies, and adaptation, combination, or integration with other Computer Software provided that SBIR/STTR Data incorporated into any derivative software are subject to the rights in § 3(ee) of the SBIR/STTR Policy Directive; or

(B) Necessary to support certain narrowly-tailored essential Government activities for which law or regulation permits access of a non-Government entity to a contractors' data developed exclusively at private expense, non-SBIR/STTR Data, such as for emergency repair and overhaul.

<u>SBIR/STTR Data</u> - All Data developed or generated in the performance of an SBIR or STTR award, including Technical Data and Computer Software developed or generated in the performance of an SBIR or STTR award. The term does not include information incidental to contract or grant administration, such as financial, administrative, cost or pricing or management information.

SBIR/STTR Data Rights - The Federal Government's license rights in properly marked SBIR/STTR Data during the SBIR/STTR Protection Period are as follows: SBIR/STTR Technical Data Rights in SBIR/STTR Data that are Technical Data or any other type of Data other than Computer Software; and SBIR/STTR Computer Software Rights in SBIR/STTR Data that is Computer Software. Upon expiration of the protection period for SBIR/STTR Data, the Federal Government has a royalty free license to use, and to authorize others to use on its behalf, these data for Government Purposes, and is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties. The Federal Government receives Unlimited Rights in Form Fit, and Function Data, OMIT Data, and all unmarked SBIR/STTR Data.

SBIR/STTR Protection Period - The period of time during which the Federal Government is obligated to protect SBIR/STTR Data against unauthorized use and disclosure in accordance with SBIR/STTR Data Rights. The SBIR/STTR Protection Period begins at award of an SBIR/STTR Funding Agreement and ends not less than twenty years from that date (See § 8(b)(4) of the SBIR/STTR Policy Directive).

SBIR/STTR Technical Data Rights - The Federal Government's rights during the SBIR/STTR Protection Period in SBIR/STTR Data that are Technical Data or any other type of Data other than Computer Software.

(1) The Federal Government may, use, modify, reproduce, perform, display, release, or disclose SBIR/STTR Data that are Technical Data within the Government; however, the Government shall not use, release, or disclose the data for procurement, manufacturing, or commercial purposes; or release or disclose the SBIR/STTR Data outside the Government except as permitted by paragraph (2) below or by written permission of the Awardee.

(2) SBIR/STTR Data that are Technical Data may be released outside the Federal Government without any additional written permission of the Awardee only if the non-Governmental entity or foreign government has entered into a non-disclosure agreement with the Federal Government that complies with the terms for such agreements outlined in § 8 of the SBIR/STTR Policy Directive and the release is:

(i) Necessary to support certain narrowly tailored essential Government activities for which law or regulation permits access of a non-Government entity to a contractors' data developed exclusively at private expense, non- SBIR/STTR Data, such as for emergency repair and overhaul;

(ii) To a Government support services contractor in the performance of a Government support services contract for internal Government use or activities, including evaluation, diagnosis, or modification, provided that SBIR/STTR Technical Data incorporated into any derivative Data are subject to the rights in § 3(ii) of the SBIR/STTR Policy Directive, and the release is not for commercial purposes or manufacture;

(iii) To a foreign government for purposes of information and evaluation if required to serve the interests of the U.S. Government; or

(iv) To non-Government entities or individuals for purposes of evaluation.

Technical Data - Recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including Computer Software Documentation and Computer Databases). The term does not include Computer Software or financial, administrative, cost or pricing, or management information, or other data incidental to contract or grant administration. The term includes recorded Data of a scientific or technical nature that is included in Computer Databases.

Unlimited Rights - The Government's rights to access, use, modify, prepare derivative works, reproduce, release, perform, display, disclose, or distribute Data in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize others to do so.

## 1.06 Fraud, Waste and Abuse

As defined in section 9(f) of the SBIR/STTR Policy Directive, fraud includes any false representation about a material fact or any intentional deception designed to deprive the United States unlawfully of something of value or to secure from the United States a benefit, privilege, allowance, or consideration to which an individual or business is not entitled. Waste includes extravagant, careless, or needless expenditure of Government funds, or the consumption of Government property, that results from deficient practices, systems, controls, or decisions. Abuse includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources.

Examples of fraud, waste, and abuse relating to the SBIR/STTR Program include, but are not limited to:

(i) misrepresentations or material, factual omissions to obtain, or otherwise receive funding under, an SBIR/STTR award;

(ii) misrepresentations of the use of funds expended, work done, results achieved, or compliance with program requirements under an SBIR/STTR award;

(iii) misuse or conversion of SBIR/STTR award funds, including any use of award funds while not in full compliance with SBIR/STTR Program requirements, or failure to pay taxes due on misused or converted SBIR/STTR award funds;

(iv) fabrication, falsification, or plagiarism in applying for, carrying out, or reporting results from an SBIR/STTR award;

(v) failure to comply with applicable federal costs principles governing an award;

(vi) extravagant, careless, or needless spending;

(vii) self-dealing, such as making a sub-award to an entity in which the Principal Investigator (PI) has a financial interest;

(viii) acceptance by agency personnel of bribes or gifts in exchange for grant or contract awards or other conflicts of interest that prevents the Government from getting the best value; and

(ix) lack of monitoring, or follow-up if questions arise, by agency personnel to ensure that awardee meets all required eligibility requirements, provides all required certifications, performs in accordance with the terms and conditions of the award, and performs all work proposed in the application.

Report any allegations of fraud, waste and abuse using the online Department of Commerce Office of the Inspector General Online Complaint Form. Contact information for the Office of Inspector General is available at: https://www.oig.doc.gov/Pages/Contact-Us.aspx. Please do not include Personally Identifiable Information (PII) through the website. PII is considered to be items containing Social Security numbers, dates of birth, credit card and passport numbers, or other personally identifying information that could adversely affect an individual. Should you desire to provide this information, it is strongly recommended that you contact the Hotline by telephone at the number listed below.

**Phone:**
Toll Free 800-424-5197

**Mail:**
Office of Inspector General Hotline
HCHB 7709

1401 Constitution Avenue, N.W.
Washington, DC 20230

## 1.07 Other Information

### 1.07.01 Personal and Business Information

The applicant acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance, and other reports submitted by applicants, may be used by the Department of Commerce in conducting reviews and evaluations of its financial assistance programs. For this purpose, applicant information and data may be accessed, reviewed, and evaluated by Department of Commerce employees, other Federal employees, and also by Federal agents and contractors, and/or by non-Federal personnel, all of whom enter into appropriate conflict of interest and confidentiality agreements covering the use of such information. As may be provided in the terms and conditions of a specific financial assistance ward, applicants are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner and by cooperating with Department of Commerce and external program evaluators. In accordance with 2 C.F.R. 200.303(e), applicants are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information crated or obtained in connection with a Department of Commerce financial assistance award.

In addition, Department of Commerce regulations implementing the Freedom of Information Act (FOIA), 5 U.S.C. § 552, are found at 15 C.F.R. Part 4, Public Information. These regulations set forth rules for the Department regarding making requested materials, information, and records publicly available under the FOIA. Applications submitted in response to this Notice of Funding Opportunity may be subject to requests for release under the Act. In the event that an application contains information or data that the applicant deems to be confidential commercial information that should be exempt from disclosure under FOIA, that information should be identified, bracketed, and marked as Privileged, Confidential, Commercial or Financial Information. In accordance with 15 CFR § 4.9, the Department of Commerce will protect from disclosure confidential business information contained in financial assistance applications and other documentation provided by applicants to the extent permitted by law.

# 2.0 CERTIFICATIONS AND RESEARCH INVOLVING HUMANS OR ANIMALS

## 2.01 Due Diligence Certification

The SBIR and STTR Extension Act of 2022 (the Act), Pub. L. 117-183, requires that all agencies funding SBIR awards, including NIST, establish a due diligence program to assess security risks presented by small business concerns seeking a federally funded SBIR award. Specifically, NIST must assess the "cybersecurity practices, patent analysis, employee analysis, and foreign ownership of a small business concern seeking an award, including any financial ties and obligations (which shall include surety, equity, and debt obligations) of the small business concern and [its] employees to a foreign country, foreign person, or foreign entity. . . ". 15 U.S.C. § 638(vv)(2). NIST is prohibited from funding awards to businesses with specified relationships and commitments described in 15 U.S.C. § 638(g)(15)(A) to foreign countries of concern that are determined to fall into one of the categories listed in 15 U.S.C. § 638(g)(15)(B).

As a result of these statutory requirements, all applicants must complete a certification that discloses the ownership, financial ties, technology licensing or intellectual sales, and other affiliations, as specified in 15 U.S.C. § 638(g)(13), to the People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, the Islamic Republic of Iran, and/or any other country determined to be a country of concern by the Secretary of State of concern prior to award, and as required during the life of the funding agreement. The Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries is available in Appendix C of this NOFO.

### 2.02 Cyber Security Education and Training Requirements for Phase I and Phase II Awardees.

As is stated above in Section 2.01 of this NOFO, the Act requires that each due diligence program assess security risks presented by small business concerns seeking a federally funded award, as follows:

> (A) assess, using a risk-based approach as appropriate, the cybersecurity practices, patent analysis, employee analysis, and foreign ownership of a small business concern seeking an award, including the financial ties and obligations (which shall include surety, equity, and debt obligations) of the small business concern and employees of the small business concern to a foreign country, foreign person, or foreign entity; and
>
> (B) assess awards and proposals or applications, as applicable, using a risk-based approach as appropriate, including through the use of open-source analysis and analytical tools, for the nondisclosures of information required under (g)(13).

To meet the requirements of Sections (A) and (B) of the Act, Phase I and Phase II awardees receiving SBIR awards from NIST will be required to complete the following due diligence education and training activities.

### 2.02.01 Phase I Cybersecurity Activities

a. Training Courses on Cybersecurity Mitigation Techniques. The NIST SBIR Program Office will require Phase I awardees to provide a written attestation to the NIST SBIR Program Manager no later than 30 days after receipt of award, indicating that all covered individuals assigned to the award have watched all videos within the Department of Defense Insider Threat Awareness Course. Completion of the final exam and certificate at the end of the course is not required.

b. Cybersecurity Awareness Course
All covered individuals assigned to the award must successfully complete the Department of Defense Cybersecurity Awareness Course, and forward the certificate of completion generated at the end of the course to the NIST SBIR Program Manager no later than 30 days after receipt of award.

### 2.02.02 Phase II Cybersecurity Activities

a. NIST Phase II awards are focused on the implementation of the proof-of-concept and development of a prototype. Phase II work must be completed within twenty-four months and is typically funded up to $400,000. Due to the increased complexity of this work, Phase II awards are considered higher risk than Phase I, and, therefore, Phase II awardees will be required to complete the cybersecurity training listed below.

b. Phase II awardees shall complete the three part Cyber Training Series within 90 days of receiving the notification of recommendation of award for Phase II. This series is part of the Safeguarding Science initiative, which also is sponsored by the ODNI and recommended by the Federal Bureau of Investigation (FBI). The series has three interactive modules presenting cyber information, with each module followed by a brief quiz pertaining to the content presented. Following completion of all three modules and passing of each quiz, the participant attending the training shall download the pdf certificate of completion, provide their signature and date on the certificate, and forward to the NIST SBIR Program Office for confirmation of completion.

## 2.03 Funding Agreement Certification

Awardees will be required to certify size, ownership and other SBIR Program requirements at the time of award and during the funding agreement life cycle, using

the SBIR Funding Agreement Certification and SBIR Funding Agreement Certification – Life-Cycle Certification, which are provided in Appendix B of this NOFO.

## 2.04 Research Activities Involving Human Subjects or Vertebrate Animals.

This section summarizes the requirements for applications that potentially involve research involving human subjects or vertebrate animals. Research potentially involving human subjects may include human subjects, human tissue, data, or recordings involving human subjects including software testing. Research potentially involving vertebrate animals may include live vertebrate animals or pre-existing cell lines or tissues from vertebrate animals. Additional information that describes the NIST review process for such applications and provides details regarding the documentation required is available here: https://w3auth.nist.gov/oaam/grants-management-division/nist-nofo-information/nist-notice-funding-opportunity-requirements. Both this summary and the additional information provided at the link will be incorporated into any award made under this NOFO.

**(1) Summary**

**Research involving human subjects**. Any application that includes research activities involving human subjects must satisfy the requirements of the Common Rule for the Protection of Human Subjects ("Common Rule"), codified for the Department of Commerce at 15 C.F.R. Part 27.[1] Research activities involving human subjects that fall within one or more of the classes of vulnerable subjects found in 45 C.F.R. Part 46, Subparts B, C and D must satisfy the requirements of the applicable subpart(s). In addition, any such application that includes research activities on these subjects must comply with all applicable statutory requirements imposed upon the Department of Health and Human Services (DHHS) and other Federal agencies, all regulations, policies and guidance adopted by DHHS, the Food and Drug Administration (FDA), and other Federal agencies on these topics, and all Executive Orders and Presidential statements of policy on applicable topics. The website of the Office of Human Research Protection (OHRP) in the DHHS contains the applicable regulatory, policy and guidance and (includes links to FDA, but may not include all applicable FDA regulations and policies.

**Research with Vertebrate Animals**. Any application that proposes research activities involving live vertebrate animals that are to be cared for, euthanized, or used by award recipients to accomplish research goals, teaching, or testing must meet the requirements of the Animal Welfare Act (AWA) (7 U.S.C. § 2131 et seq.), and the AWA final rules (9 C.F.R. Parts1, 2, and 3), and if appropriate, the Good Laboratory Practice for Nonclinical

[1] NIST uses the Common Rule definitions for research and human subjects research contained in 15 C.F.R. § 27.102.

Laboratory Studies (21 C.F.R. Part 58). In addition, such research activities should be in compliance with the *"U.S. Government Principles for Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training"* (Principles).

**(2) Administrative Review**.
The NIST Research Protections Office (RPO) reserves the right to conduct an administrative review of all applications that potentially include research involving human subjects under 15 C.F.R. § 27.112 (Review by Institution). Conducting an "administrative review" means that the NIST RPO will review and verify the performing institution's determinations made under the Common Rule and all documentation that support such determinations.

NIST reserves the right to conduct an administrative review of all applications that potentially include research activities that involve vertebrate animals. Conducting an "administrative review" means that the NIST RPO will review and verify the performing institution's determinations made under the applicable legal and policy requirements and all documentation that support such determinations.

**(3) Requirements for Application.**
All applications involving human subjects or vertebrate animal research must clearly indicate, by separable task, all research activities believed to be human subjects or vertebrate animal research, the expected institution(s) where the research activities may be conducted, and the institution(s) expected to be engaged in the research activities. Some documents may be requested for a pre-review during the proposal review process; however, the Grants Officer may allow final versions of certain required documents to be produced at an appropriate designated time post-award. If an award is issued, no research activities involving human subjects or vertebrate animals shall be initiated or costs incurred for those activities under the award until the NIST Grants Officer issues written approval. In addition, all re-approvals, amendments, modifications, changes, annual reports, and closure will be reviewed by NIST.

This section and the information provided here: NIST Notice of Funding Opportunity Requirements Human Subjects and Live Vertebrate Animal | NIST reflect the existing NIST policy and requirements for Research Involving Human Subjects and vertebrate animals. Should the applicable policy be revised prior to award, a clause reflecting the applicable policy current at time of award may be incorporated into the award. If the applicable policy is revised after award, a clause reflecting the updated applicable policy may be incorporated into the award.

For more information regarding research projects involving human subjects, contact Anne Andrews, Director, NIST Research Protections Office (e-mail: anne.andrews@nist.gov; phone: (301) 975-5445).

### 2.05 Certifications Regarding Federal Felony and Federal Criminal Tax Convictions, Unpaid Federal Tax Assessments and Delinquent Federal Tax Returns

In accordance with Federal appropriations law, an authorized representative of the selected applicant(s) may be required to provide certain pre-award certifications regarding federal felony and federal criminal tax convictions, unpaid federal tax assessments, and delinquent federal tax returns.

## 3.0 APPLICATION PREPARATION INSTRUCTIONS AND REQUIREMENTS

### 3.01 Phase I Application Requirements

**Only FY 2025 Phase I applications may be submitted in response to this NOFO. Phase II applications are not being accepted at this time.** NIST publishes a Phase II NOFO approximately 30 days prior to the end of the previous year's Phase I period of performance to request Phase II applications. That NOFO provides instructions for Phase I awardees to prepare a Phase II application and the closing date for submission of applications. To reiterate, only the previous year's Phase I awardees are eligible to submit a Phase II application.

The application must provide sufficient information to demonstrate that the proposed work represents a sound approach to the investigation of an important scientific or engineering innovation worthy of support. The application must sufficiently identify and address a specific NIST technical program area that falls within one of the research areas described in Section 8.0, including prestandardization research and development as described in Section 1.01; or a NIST-patented technology available for licensing (a search for NIST-patented technologies may be conducted at the NIST Patent Website). . Research Areas of this NOFO. The research must be directed towards development of a commercial product or service in the NIST program area. The application must be self-contained and written with all the care and thoroughness of a scientific paper submitted for publication. It should indicate a thorough knowledge of the current status of research area addressed by the application. Each application should be checked carefully by the applicant to ensure inclusion of all essential material needed for a complete evaluation (see Sections 4.02 and 8.01).

The application must serve as the basis for technological innovation and lead to a new commercial product, process, or service that benefits the public.

NIST reserves the right to not submit an application for merit review if NIST determines that the application fails to comply with the administrative procedures as outlined in the applicable Screening Criteria in Section 4.02 or is missing any of the

required forms and documents listed in Section 7.03.

### 3.01.01 SBA Data Collection Requirement

All applicants are required to provide certain information for inclusion into SBA's SBIR.gov database by completing the Company Commercialization Report (CCR). The CCR allows applicants to report funding outcomes resulting from prior SBIR and STTR awards. SBIR and STTR awardees are required by the SBIR Policy Directive to update and maintain their organization's CCR at www.SBIR.gov.

Each Phase II awardee is required to update appropriate information on the award in the database upon completion of the last program objective under the funding agreement and is requested to voluntarily update the information in the database annually thereafter for a minimum period of 5 years.

Applicants shall complete the CCR by logging into their company's existing account or register for a new account at www.SBIR.gov. Instructions for applicants to complete and include the CCR with its application are listed below.

1. Log into www.SBIR.gov.
2. Use the Login/Register prompt at the top of the home page to login to your existing account or to register and create a new account.
3. Navigate to My Dashboard > My Documents to view or print the information currently contained in the Company Registry Commercialization Report.
4. Create or update the commercialization record from the company dashboard by scrolling to the "My Commercialization" section and clicking the create/update Commercialization tab under "Current Report Version." Please refer to the "Instructions" and "Guide" documents contained in this section of the Dashboard for details on completing and updating the CCR. Ensure the report is certified and submitted.
5. Click the "Company Commercialization Report" PDF under the My Documents section of the dashboard to download a PDF of the CCR.
6. Submit your CCR along with the proposal documents listed in Section 8.01 Required Fast- Track Forms and Documents, of this NOFO.

## 3.02 Phase I Application

A complete application must include a Technical Proposal (described below) and all other forms and documents listed in Section 7.03. An applicant may not submit multiple applications – **applications are limited to one proposal per SBC**.

The Technical Proposal, both the Cover Sheet and Technical Content, is **limited to**

**15 pages**. The only exception to the 15-page limit is for applicants covered by the provision for Prior SBIR Phase II Awards (Section 3.02.02 (15)). Additional pages beyond the 15- page limit will not be considered in the evaluation process. Pages should be of standard size (8 1/2" x 11"; 21.6 cm x 27.9 cm) with margins of 2.5 cm and type at least 10-point font. All units of measurement should be presented in metric units.

**The Technical Proposal portion of the application requires the following:**
**(a) Cover Sheet (Section 3.02.01) pages 1 and 2, and**
**(b) Technical Content (Section 3.02.02) pages 3 through 15.**

**The listing of all forms and documents needed to complete the application is given in Section 7.03 of this NOFO.** The additional required forms and documents in Section 7.03 are not included in the 15-page count.

See Section 7.0 for information on the submission of applications in response to this NOFO.

### 3.02.01 Cover Sheet

A completed Cover Sheet (*see* Appendix A of this NOFO) is a required part of the Technical Proposal. The Cover Sheet is counted as pages 1 and 2 of the Technical Proposal.

If an applicant checks 'Yes' on #11, the applicant's contact information may be provided to the NIST Hollings Manufacturing Extension Partnership (MEP). Such applicants may be contacted by your local MEP Center to explore a wide range of services and initiatives to help identify potential opportunities to accelerate and strengthen growth and competitiveness in the global marketplace for small and medium-sized manufacturers, including business-related support services that could potentially benefit the applicant's proposed project.

The applicant must provide in the space available on the Cover Sheet an abstract (limited to 200 words) and summary of potential commercial application of the research results (limited to 100 words). Each applicant's abstract and summary of potential commercial applications will be provided to the SBA and should not contain proprietary information. Each awardee's abstract and summary of potential commercial applications will be published on the NIST SBIR website and www.sbir.gov.

### 3.02.02 Technical Content

Beginning on page 3 of the Technical Proposal, include the following items with headings as shown:

(1) **NIST Program Area or NIST-Patented Technology Available for Licensing**. The first paragraph of the proposal must describe a research project, including prestandardization research and development as described in Section 1.01, that addresses a current NIST technical program area falling within one of the nine research areas identified in Section 8.0; or a research project that utilizes a NIST-patented technology available for licensing.

(a) Proposals addressing a commercialization opportunity related to a current NIST technical program area must identify the NIST program area and the specific NIST Laboratory performing the research. Simply providing a research area from Section 8.0 Research Areas, is not sufficient. Applicants may not cite programs describing NIST extramural activities such as those from the Manufacturing Extension Program; the Baldridge Performance Excellence Program; the Office of Advanced Manufacturing, AMTech, Manufacturing USA, or Creating Helpful Incentives to Produce Semiconductors (CHIPS).

(b) Steps for selecting a research area that addresses a commercialization opportunity related to a current NIST technical program area are as follows:

1. Go to the NOFO Research Area Selection Page.
2. Click on the research area of interest being performed at NIST.
3. Select the specific project or program you wish to address in your technical proposal along with the name of the specific laboratory performing the research.

NIST is interested in receiving proposals that will lead to commercial products. While the proposals must align with a NIST program area, the end product does not need to mimic closely any particular NIST project found within a NIST program area. For example, NIST has an active technical program area in advancing standards and measurements in energy technologies. One of the specific project areas involves enabling reliable calculations of solar photovoltaic system energy output and efficiency. A proposal that aligns with the larger energy technologies program area is sufficient; it does not need to apply directly to one of the specific projects listed within that program area.

(c) Proposals addressing a commercialization opportunity related to a NIST- patented technology that is available for licensing must cite the appropriate invention page from the NIST Patent Website, or cite a

U.S. patent number, patent application number, or patent serial number for a NIST-owned patent. If information is needed regarding the availability of a particular NIST-owned patent for licensing, please contact Jacqueline Gray (jacqueline.gray@nist.gov) and include the patent identifying number in the communication, before submitting an application.

(2) **Identification and Significance of the Problem or Opportunity**. Make a clear statement of the specific research problem or opportunity addressed, its innovativeness, commercial potential, and why the research is important.

(3) **Phase I Technical Objectives**. State the specific objectives of the Phase I effort, including the technical question it will try to answer, including plans for commercialization, to determine the feasibility of the proposed approach.

(4) **Phase I Work Plan**. Include a detailed description of the Phase I feasibility research plan. The plan should include what will be done, where it will be done, and how the research will be carried out. The method(s) planned to achieve each objective or task should be discussed in detail.

(5) **Related R/R&D**. Describe significant R/R&D that is directly related to the application, including any conducted by the principal investigator or by the proposing SBC. Describe how it relates to the proposed effort and describe any planned coordination with outside sources. The applicant must persuade evaluators of his or her awareness of key, recent R/R&D conducted by others in the specific topic area.

(6) **Key Individuals and Bibliography of Related Work**. Identify key individuals involved in Phase I, including their related education, experience, and publications. Where vitae are extensive, summaries that focus on the most relevant experience and publications are desired and may be necessary to meet application size limitations.

(7) **Relationship with Future R/R&D**. Discuss the significance of the Phase I effort in providing a foundation for the Phase II R/R&D effort. Also state the anticipated commercial results of the proposed approach.

(8) **Facilities and Equipment**. A description, availability, and location of instrumentation and physical facilities proposed for Phase I should be provided.

(9) **Consultants, Contracts, and Subawards**. The purpose of this section is to show that any third-party research assistance would materially benefit the proposed effort and that arrangements for such assistance are in place at the time of the application submission.

For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the awardee. Outside involvement in the project is encouraged where it strengthens the conduct of the research. Outside involvement is not a requirement of this program and is limited to no more than one-third of the research and/or analytical effort in Phase I. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/subaward or purchase agreements may not exceed one-third of the total award.

No individual or entity may serve as consultant, contractor, or subrecipient if they have been the recipient of any NIST information related to the research area that is not generally available to the public.

The applicant must also include Letters of Commitment from any participating consultants, subrecipients, or subcontractors. The Letters of Commitment are separate from the Technical Proposal and do not count against the page limit. See Section 7.03.15.

(10) **Potential Commercial Application**. A primary program goal is to provide opportunities for small businesses to convert research into technological innovation in the private sector. All proposed research should have a commercial outcome. Describe in detail the commercial potential of the proposed research, how commercialization would be pursued and potentially used by the private sector and/or the Federal Government. Include any optional letters of support and relevant supporting material such as references to journal articles, literature, or government publications. Provide any indicators of commercial potential and address the following:

(a) Market opportunity – Describe the current and anticipated target market, the size of the market and include a brief profile of the potential customer(s).

(b) Technology and competition – Describe the competitive landscape, the value proposition and competitive advantage of the product or service enabled by the proposed innovation. Also include the critical milestones and pathway for commercial deployment of the proposed product or service.

(c) Finances – Describe your strategy for financing the innovation beyond the SBIR award. Describe the existence of any outside, non-SBIR funding or partnering commitments including any Phase II funding commitments from private sector or non-SBIR funding sources and/or the existence of Phase III follow-on commitments for the subject

research.

(d) Benefits - Describe the anticipated commercial benefits of the resulting product or service.

(e) Experience - Describe your record of commercializing SBIR or another research. Include any additional indicators of the commercial potential of the idea.

(11) **Cooperative Research and Development Agreements (CRADAs).** State if the applicant is a former or current CRADA partner with NIST, or with any other Federal agency, naming the agency, title of the CRADA, and any relationship with the proposed work. The statement of work of an SBIR award awarded under this NOFO cannot overlap with the statement of work of an existing CRADA with any federal agency, including NIST, with the awardee. NIST will consider whether there is any overlap on a case-by-case basis.

(12) **Guest Researcher.** State if the applicant, any of the applicant's employees, or any of its consultants, contractors, or subrecipients or their employees is a domestic or foreign guest researcher at NIST (see http://www.nist.gov/tpo/collaborations/guestresearchers.cfm), naming the sponsoring NIST laboratory.

(13) **Cost Sharing.** Cost sharing is not required and is not considered during the evaluation process for Phase I applications.

(14) **Similar Applications or Awards. WARNING --** While it is permissible to submit identical applications or applications containing a significant amount of essentially equivalent work for consideration under numerous Federal program funding announcements, **it is unlawful to enter into a funding agreement requiring essentially equivalent work to an SBIR award (*see* 15 U.S.C. § 638(bb)(3)).** If there is any question concerning this issue, all pending funding applications must be disclosed to the soliciting agency or agencies before award.

If an application submitted in response to this NOFO is substantially the same as another application that has been funded, is now being funded, or is pending with another Federal Agency, the applicant must provide the following information:

(a) Name and addresses of agencies to which and application was submitted or from which an award was received.

(b) Date of application submission or date of award.

(c) Title, number, and date of NOFO(s) under which an application was submitted or award received.

(d) Specific applicable research topic(s) for each application submitted or award received.

(e) Title of research projects for each application submitted or award received.

(f) Name and title of principal investigator or project manager for each application submitted or award received.

If no equivalent application is under consideration or award for equivalent work received, a statement to that effect **must** be included in this section of the technical content area of the application.

(15) **Prior SBIR Phase II Awards**. If the SBC has received more than 15 Phase II awards in the prior 5 fiscal years, the SBC must submit the following information in its Phase I application: name of the awarding agency; date of award; funding agreement number; amount of award; topic, subtopic, or research area title; follow-on agreement amount; source and date of commitment; and current commercialization status for each Phase II award. This required information will not be counted toward the 15-page Technical Proposal limitation.

## 4.0 METHOD OF SELECTION AND EVALUATION CRITERIA

### 4.01 Introduction

All applications will be evaluated and judged on a competitive basis. Applications will be initially screened to determine eligibility, completeness, and responsiveness to this NOFO (see Sections 4.02 and 7.03). Applications passing the initial screening will be evaluated in accordance with the evaluation criteria (see Section 4.03). Each application will be judged on its own merit.

NIST is under no obligation to fund any application or any specific number of applications in a given topic. NIST may elect to fund several or none of the applications for the same research area. If an application is submitted that requires a license to use a NIST-owned invention covered by a patent or patent application and such NIST- owned invention has become unavailable for licensing prior to the close of this NOFO in the field of use relevant to the application, NIST has the sole

discretion to deem the application ineligible.

## 4.02 Phase I Screening Criteria

Please carefully read the entire NOFO and review the following Phase I Screening Criteria to assure that your application meets NIST requirements. Phase I applications that do not clearly satisfy all eight (8) of the screening criteria will be eliminated from the review and selection process and not receive further consideration. However, NIST, in its sole discretion, may continue the review process for an application that is missing minor non- substantive information, the absence of which may easily be rectified.

The screening criteria are:

(1) The application must be received by NIST before the deadline specified in Section 7.0.

(2) The proposing firm must qualify as eligible according to the criteria provided in Section 1.03.

(3) The Phase I application must include all required forms and documents listed in Section 7.03:

i) SF-424 (R&R), Application for Federal Assistance – See Section 7.03.1
ii) Research and Related Budget (Total Fed + Non-Fed) – See Section 7.03.2
iii) CD-511, Certification Regarding Lobbying – See Section 7.03.3
iv) Research and Related Other Project Information – See Section 7.03.4
v) SF-LLL – Disclosure of Lobbying Activities (if applicable) – See Section 7.03.5
vi) Technical Content – see Section 3.02.02
   a. Cover Sheet – see Section 3.02.01
   b. Technical Proposal – see Section 3.02.02
vii) Budget Narrative and Justification – see Section 7.03.7.
viii) Indirect Cost Rate Agreement – see Section 7.03.8.
ix) SBA Company Registry Form – see Section 7.03.9.
x) Data Management Plan -see Section 7.03.10.
xi) Subaward Budget Form - see Section 7.03.11.
xii) Research and Related Personal Data – see Section 7.03.12.
xiii) Current and Pending Support Form – see Section 7.03.13.
xiv) Compliance with SBIR Program Requirements, Applicant Fraud

Awareness Training – Certificate of Training Completion – see Section 7.03.14.

xv) Letters of Commitment – see Section 7.03.15.

xvi) Company Commercialization Report (CCR) – see Section 7.03.16.

xvii) Appendix C. Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries – see Section 7.03.17.

(4) The Technical Content must not exceed 15 pages including optional letters of support.

(5) The Phase I application must be submitted under one of the nine (9) research areas listed in Section 8 of this NOFO; or submitted under a NIST-patented technology that is available for licensing (see NIST Patent Website);. Applicants' proposals must clearly address either option selected.

(6) The Phase I total proposed project budget must not exceed $100,000. Up to an additional $6,500 may be requested for TABA. NIST's inclusion of TABA funds in the award will be subject to the availability of NIST funding. For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the awardee. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/subaward or purchase agreements may not exceed one-third of the total award (Section 1.03).

(7) The feasibility research duration for the Phase I project must not exceed 6 months. If an application is submitted that requires a license to use a NIST-owned invention covered by a patent or patent application, the relevant NIST-owned invention must be available for licensing prior to the close of this NOFO in the field of use relevant to the application.

(8) The Phase I application must include the applicant's discussion regarding commercialization within the 15-page technical proposal (Sections 3.02.02(3) and 3.02.02(10)); a separate commercialization plan is not required.

### 4.03 Phase I Evaluation Criteria

Phase I applications that satisfy the screening criteria in Section 4.02 will proceed to a scored merit review process.

**Merit Review.** The applications will be evaluated by at least three (3) reviewers

composed of NIST staff or non-federal personnel in accordance with the following weighted criteria for a maximum of 100 points. Reviewers may discuss the applications with each other, but scores will be determined on an individual basis, not as a consensus. The reviewers will evaluate:

(1) The degree to which the proposed technical approach is comprehensive, feasible, and demonstrates a clear understanding of the research area. (20 points)

(2) The appropriateness of the qualifications and extent of the experience of the proposed principal/key investigators, supporting staff, and consultants as they relate to accomplishing the proposed research effort. In addition, reviewers will evaluate, as applicable, the extent to which the applicant has access to the facilities and equipment necessary to complete the proposed research. (5 points)

(3) The likelihood that the proposed research program will lead to a successful product or service with a viable pathway for commercial deployment as described in the applicant's commercialization discussion. (30 points)

(4) The magnitude of the anticipated commercial benefits of the resulting product, service or standard.(25 points)

(5) The extent to which the proposed commercial product or service relates to the goals of a NIST technical program and the NIST mission available at www.nist.gov/about-nist. (20 points)

## 4.04 Phase I Award Selections

Final selection decisions will be made by the Selecting Official, the Director of the NIST Technology Partnerships Office, or designee.

The Selecting Official shall select awards in rank order unless a selection out of rank order is justified based upon any of the following factors:

(1) Diversity across NIST program areas;
(2) Proposed projects that include SBIR high priority areas of manufacturing and energy efficiency research;
(3) Proposed projects that include participation by women and socially

and economically disadvantaged SBCs, and SBCs from HUBZones or underserved-states;

(4) Applicants that have received fewer than 20 SBIR awards in the past;
(5) Duplication of other federally-funded research; and
(6) Availability of funding.

NIST may select some, all, or none of the applications, or part(s) of any particular application. Prior to issuing an award, NIST may ask for supplemental information and may negotiate the scope and amount of the award. The final approval of selected applications and issuance of awards will be by the NIST Grants Officer. The award decisions of the NIST Grants Officer are final.

### 4.04.01 Federal Awarding Agency Review of Risk Posed by Applicants

After applications are proposed for funding by the Selecting Official, the NIST Financial Assistance Agreements Management Office (FAAMO) performs pre-award risk assessments in accordance with 2 C.F.R. § 200.206, which may include a review of the financial stability of an applicant, the quality of the applicant's management systems, the history of performance, and/or the applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

Review of applications, selection of successful applicants, and award processing is expected to be completed by June. The earliest start date for awards under this NOFO is expected to be June.

In addition, prior to making an award where the total Federal share is expected to exceed the simplified acquisition threshold (currently $250,000), NIST FAAMO will review and consider the publicly available information about that applicant in the System for Award Management (SAM.gov). An applicant may, at its discretion, review, and comment on information about itself previously entered into SAM.gov by a Federal awarding agency. As part of its review of risk posed by applicants, NIST FAAMO will consider any comments made by the applicant in SAM.gov in making its determination about the applicant's integrity, business ethics, and record of performance under Federal awards. Upon completion of the pre-award risk assessment, the Grants Officer will make a responsibility determination concerning whether the applicant is qualified to receive the subject award and, if so, whether appropriate specific conditions that correspond to the degree of risk posed by the applicant should be applied to an award.

### 4.04.02 Release of Proposal Review Information

After final award decisions have been announced, a summary of the merit evaluations of applications that passed the screening criteria will be provided to the applicant with written notification of award/non-award. The identity of the reviewers will not be disclosed.

## 5.0 CONSIDERATIONS

### 5.01 Awards

Through 2 C.F.R. § 1327.101, the Department of Commerce adopted **Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards** at 2 C.F.R. Part 200, which apply to awards in this program.

The Department of Commerce will apply to all awards made under this NOFO the Financial Assistance General Terms and Conditions in effect on the date of award. The current version is dated October 1, 2024.

The **Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements**, 79 FR 78390 (December 30, 2014), are applicable to this NOFO.

Contingent upon availability of funds, NIST anticipates making a total number of approximately ten (10) Phase I awards with a project budget of no more than$100,000 each. Up to an additional $6,500 may be included in each award for TABA. NIST's inclusion of TABA funds in the award will be subject to the availability of NIST funding. The total performance period shall be no more than seven (7) months beginning on the agreement start date. A period of one (1) month is allotted after the six (6) month R&D duration for the awardee to prepare and submit a final report. The funding vehicles for NIST's SBIR program in both Phase I and Phase II are cooperative agreements.

Phase II awards shall be for no more than $400,000. The R&D activity period of performance in Phase II will depend upon the scope of the research but should not exceed 24 months. One year after completing the R&D activity, the awardee shall be required to report on its commercialization activities. The total period of performance for Phase II is 36 months.

It is anticipated that approximately half of the Phase I awardees will receive Phase II awards, depending upon the availability of funds. To provide for an in-depth review of the Phase I final report and the Phase II application, Phase II awards will be made approximately 4 months after the completion of Phase I, contingent upon availability of funds.

In no event will NIST or the Department of Commerce be responsible for application preparation costs. This NOFO does not obligate NIST or the Department of Commerce to make any awards under either Phase I or Phase II. Furthermore, NIST will not fund any costs incurred by the applicants before awards are made. Publication of this NOFO does not oblige NIST or the Department of Commerce to award any specific project or to obligate any available funds.

## 5.02 Reporting Requirements

Phase I awardees will be required to submit a Research Performance Progress Report (RPPR), covering the award's first three months, prior to the end of the fourth month of the period of performance, and a final report seven months after the start of the award. Publication citation information as well as links to publicly available data or revised Data Management Plans (DMP) shall be submitted as soon as they become available.

The RPPR should include a response to each of the metric questions that address the technical details regarding the research conducted up to that point in the project, detailed plans for the next stages of the project, results obtained, estimates of technical feasibility, a description of TABA services provided, and the benefits and results of TABA services provided for those awardees who requested and were approved for TABA services.

Consideration will be given to changes from the solicited and proposed milestones if results from experimentation warrant a deviation from the plan. Inclusion of proprietary information within the RPPRs may be necessary in order to effectively communicate progress and gain appropriate consultation from NIST experts regarding next steps. All such proprietary information must be marked by the awardee according to instructions provided in Section 5.04.01.

To help assess the effectiveness of our program in meeting programmatic and SBIR objectives, NIST may periodically request information from small businesses about

progress taken towards commercialization of the technology after the completion of Phase I and II awards.

## 5.03 Payment Schedule

Cooperative agreements will include an award term with electronic payment system information. Pursuant to 2 C.F.R. § 200.305 awardees are to be paid in advance, provided they maintain or demonstrate the willingness to maintain: written procedures that minimize the time elapsing between the transfer of funds and disbursement by the recipient, and financial management systems that meet the standards for fund control and accountability as established in 2 C.F.R. § 200.302. Advances of funds to a recipient organization shall be limited to the minimum amounts needed and be timed to be in accordance with the actual, immediate cash requirements of the recipient organization in carrying out the purpose of the approved program or project.

The Department of Commerce policy requires that in the usual case, non-Federal entities time advance payment requests so that Federal funds are on hand for a maximum of 30 calendar days before being disbursed by the non-Federal entity for eligible award costs.

## 5.04 Innovations, Inventions and Patents

### 5.04.01 Proprietary Information Contained in Proposals

Information contained in unsuccessful applications will remain the property of the applicant. Unsuccessful applications will be retained in accordance with the General Record Schedule 1.2/021. The Federal Government may, however, retain copies of all applications. Public release of information in any application submitted will be subject to existing statutory and regulatory requirements. Applicants are discouraged from submitting proprietary information unless the information is deemed essential for proper evaluation of the application. If proprietary information is provided by an applicant in a proposal, which constitutes a trade secret, proprietary commercial or financial information, confidential personal information, or data affecting national security, it will be treated in confidence to the extent permitted by law, provided that the proposal is clearly marked by the applicant as follows:

(A) The following legend must appear on the title page of the proposal:

"This proposal contains information that shall not be disclosed outside the Federal Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal, unless authorized by law. The Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting award if award is made as a result of the submission of this proposal. The information subject to these restrictions are contained on all pages of the proposal except for pages [insert page number or other identification of pages that contain no restricted information.]"

(End of Legend); and

(B) The following legend must appear on each page of the proposal that contains information the applicant wishes to protect:

"Use or disclosure of information contained on this sheet is subject to the restriction on the title page of this proposal."

(End of Legend)

The use of any other legend is unacceptable to the Government and may constitute grounds for removing the application from further consideration without assuming any liability for inadvertent disclosure.

### 5.04.02 Rights in Data Developed Under SBIR Funding Agreements

In lieu of the Department of Commerce Financial Assistance General Terms and Conditions, Section C.03, Intellectual Property Rights, the following terms and conditions will apply to and be included in all SBIR awards issued under this NOFO:

(a) Definitions. All definitions below are excerpted from the SBA SBIR/STTR Policy Directive.

(1) Computer Database. A collection of data recorded in a form capable of being processed by a computer. The term does not include Computer Software.

(2) Computer Programs. A set of instructions, rules, or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

(3) Computer Software. Computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the software to be reproduced, recreated, or recompiled. Computer Software does not include Computer Databases or Computer Software Documentation.

(4) Computer Software Documentation. Owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the Computer Software or provide instructions for using the software.

(5) Data. All recorded information, regardless of the form or method of recording or the media on which it may be recorded. The term does not include information incidental to contract or grant administration, such as financial, administrative, cost or pricing or management information.

(6) Form, Fit, and Function Data. Data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability, and data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements. For Computer Software it means data identifying source, functional characteristics, and performance requirements, but specifically excludes the source code, algorithms, processes, formulas, and flow charts of the software.

(7) Government Purpose. Any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations or sales or transfers by the United States Government to foreign governments or international organizations. Government Purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose Technical Data or Computer Software for commercial purposes or authorize others to do so.

(8) Operations, Maintenance, Installation, or Training Purposes (OMIT) Data. Data that is necessary for operation, maintenance, installation, or training purposes (but not including detailed manufacturing or process data).

(9) SBIR/STTR Computer Software Rights. The Federal Government’s rights during the SBIR/STTR Protection Period in specific types of SBIR/STTR Data that are Computer Software.

(A) The Federal Government may use, modify, reproduce, release, perform,

display, or disclose SBIR/STTR Data that are Computer Software within the Government. The Federal Government may exercise SBIR/STTR Computer Software Rights within the Government for:

(i) Use in Federal Government computers;

(ii) Modification, adaptation, or combination with other Computer Software, provided that the Data incorporated into any derivative software are subject to the rights in § 3(ee) of the SBIR/STTR Policy Directive and that the derivative software is marked as containing SBIR/STTR Data;

(iii) Archive or backup; or

(iv) Distribution of a computer program to another Federal agency, without further permission of the Awardee, if the Awardee is notified of the distribution and the identity of the recipient prior to the distribution, and a copy of the SBIR/STTR Computer Software Rights included in the Funding Agreement is provided to the recipient.

(B) The Federal Government shall not release, disclose, or permit access to SBIR/STTR Data that is Computer Software for commercial, manufacturing, or procurement purposes without the written permission of the Awardee. The Federal Government shall not release, disclose, or permit access to SBIR/STTR Data outside the Government without the written permission of the Awardee unless:

(i) The non-Governmental entity has entered into a non-disclosure agreement with the Government that complies with the terms for such agreements outlined in § 8 of the SBIR/STTR Policy Directive; and

(ii) The release or disclosure is—

(I) To a Federal Government support service contractor or their subcontractor for purposes of supporting Government internal use or activities, including evaluation, diagnosis and correction of deficiencies, and adaptation, combination, or integration with other Computer Software provided that SBIR/STTR Data incorporated into any derivative software are subject to the rights in § 3(ee) of the SBIR/STTR Policy Directive; or

(II) Necessary to support certain narrowly tailored essential Government activities for which law or regulation permits access of

a non-Government entity to a contractors' data developed exclusively at private expense, non-SBIR/STTR Data, such as for emergency repair and overhaul.

(10) SBIR/STTR Data. All Data developed or generated in the performance of an SBIR or STTR award, including Technical Data and Computer Software developed or generated in the performance of an SBIR or STTR award. The term does not include information incidental to contract or grant administration, such as financial, administrative, cost or pricing or management information.

(11) SBIR/STTR Data Rights. The Federal Government's license rights in properly marked SBIR/STTR Data during the SBIR/STTR Protection Period are as follows: SBIR/STTR Technical Data Rights in SBIR/STTR Data that are Technical Data or any other type of Data other than Computer Software; and SBIR/STTR Computer Software Rights in SBIR/STTR Data that is Computer Software. Upon expiration of the protection period for SBIR/STTR Data, the Federal Government has a royalty free license to use, and to authorize others to use on its behalf, these data for Government Purposes, and is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties. The Federal Government receives Unlimited Rights in Form Fit, and Function Data, OMIT Data, and all unmarked SBIR/STTR Data.

(12) SBIR/STTR Protection Period. The period of time during which the Federal Government is obligated to protect SBIR/STTR Data against unauthorized use and disclosure in accordance with SBIR/STTR Data Rights. The SBIR/STTR Protection Period begins at award of an SBIR/STTR Funding Agreement and ends not less than twenty years from that date (See § 8(b)(4) of the SBIR/STTR Policy Directive).

(13) SBIR/STTR Technical Data Rights. The Federal Government's rights during the SBIR/STTR Protection Period in SBIR/STTR Data that are Technical Data or any other type of Data other than Computer Software.

(A) The Federal Government may, use, modify, reproduce, perform, display, release, or disclose SBIR/STTR Data that are Technical Data within the Government; however, the Government shall not use, release, or disclose the data for procurement, manufacturing, or commercial purposes; or release or disclose the SBIR/STTR Data outside the Government except as permitted by paragraph (B) below or by written permission of the Awardee.

(B) SBIR/STTR Data that are Technical Data may be released outside the Federal Government without any additional written permission of the Awardee only if the non- Governmental entity or foreign government has entered into a non-disclosure agreement with the Federal Government that complies with the terms for such agreements outlined in § 8 of the SBIR/STTR Policy Directive and the release is:

(i) Necessary to support certain narrowly tailored essential Government activities for which law or regulation permits access of a non-Government entity to a contractors' data developed exclusively at private expense, non- SBIR/STTR Data, such as for emergency repair and overhaul;

(ii) To a government support services contractor in the performance of a government support services contract for internal Government use or activities, including evaluation, diagnosis, or modification, provided that SBIR/STTR Technical Data incorporated into any derivative Data are subject to the rights in § 3(ii) of the SBIR/STTR Policy Directive, and the release is not for commercial purposes or manufacture;

(iii) To a foreign government for purposes of information and evaluation if required to serve the interests of the U.S. Government; or

(iv) To non-Government entities or individuals for purposes of evaluation.

(14) Technical Data. Recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including Computer Software Documentation and Computer Databases). The term does not include Computer Software or financial, administrative, cost or pricing, or management information, or other data incidental to contract or grant administration. The term includes recorded Data of a scientific or technical nature that is included in Computer Databases.

(15) Unlimited Rights. The Government's rights to access, use, modify, prepare derivative works, reproduce, release, perform, display, disclose, or distribute Data in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize others to do so.

(b) Allocation of SBIR/STTR rights.

(1) An SBC retains ownership of all SBIR/STTR Data it develops or generates in the performance of an SBIR/STTR award. The SBC retains all rights in SBIR/STTR Data that are not granted to the Federal Government in

accordance with the SBIR/STTR Policy Directive. These rights of the SBC do not expire.

(2) During the SBIR/STTR Protection Period, the Federal Government receives SBIR/STTR Technical Data Rights in appropriately marked SBIR/STTR Data that is Technical Data or any other type of Data other than Computer Software; and SBIR/STTR Computer Software Rights in appropriately marked SBIR/STTR Data that is Computer Software.

(3) After the protection period, the Federal Government may use, and authorize others to use on its behalf, for Government Purposes, SBIR/STTR Data that was protected during the SBIR/STTR Protection Period. Awards issued by the U.S. Department of Energy are subject to Unlimited Rights after the expiration of the SBIR/STTR Protection Period.

(4) The Federal Government receives Unlimited Rights in Form Fit, and Function Data, OMIT Data, and all unmarked SBIR/STTR Data.

(c) Identification and Delivery of SBIR/STTR Data. Any SBIR/STTR Data delivered by the Awardee, and in which the Awardee intends to limit the Federal Government's rights to SBIR/STTR Data Rights, must be delivered with restrictive markings. The Federal Government assumes no liability for the access, use, modification, reproduction, release, performance, display, disclosure, or distribution of SBIR/STTR Data without markings. The Awardee or its subcontractors or suppliers shall conspicuously and legibly mark all such SBIR/STTR Data with the appropriate legend.

(1) The authorized legend shall be placed on each page of the SBIR/STTR Data. If only portions of a page are subject to the asserted restrictions, the SBIR/STTR Awardee shall identify the restricted portions (e.g., by circling or underscoring with a note or other appropriate identifier). With respect to SBIR/STTR Data embodied in Computer Software, the legend shall be placed on: (1) the printed material or media containing the Computer Software; or (2) the transmittal document or storage container. The legend shall read as follows:

"SBIR/STTR DATA RIGHTS

| | |
|---|---|
| Funding Agreement No. | |
| Award Date | |

| | |
|---|---|
| SBIR/STTR Protection Period | |
| SBIR/STTR Awardee | |
| SBIR/STTR Awardee Address | |

This is SBIR/STTR Data (or is Computer Software or a Prototype that embodies or includes SBIR/STTR Data) to which the SBIR/STTR Awardee has SBIR/STTR Data Rights and to which the Federal Government has received SBIR/STTR Technical Data Rights (or SBIR/STTR Computer Software Rights) during the SBIR/STTR Protection Period and rights of use for Government Purposes after the SBIR/STTR Protection Period, as those terms are defined in the SBIR/STTR Funding Agreement. Awards issued by the U.S. Department of Energy are subject to Unlimited Rights after the SBIR/STTR Protection Period, as that term is defined in the SBIR/STTR Funding Agreement. Any reproduction of SBIR/STTR Data or portions of such data marked with this legend must also reproduce the markings."

(End of Legend)

(2) Data submitted without the correct or appropriate markings may be corrected within 6 months from the date that the data is delivered.

(d) Relation to patents. Nothing regarding SBIR/STTR Data Rights in this clause shall imply a license to or imply a requirement to license to the Federal Government any patent to a Subject Invention (as defined under the Bayh-Dole Act implemented at 37 CFR 401) made under an SBIR/STTR award.

(End of Clause)

(e) Copyright.

(1) Data first produced in the performance of this award.

(i) Except as otherwise specifically provided in this award, the Awardee may assert copyright subsisting in any data first produced in the performance of this award.

(ii) When asserting copyright, the Awardee shall affix the applicable copyright notice of 17 U.S.C. § 401 or § 402 and an acknowledgment of Government sponsorship (including award number).
For data other than computer software, the Awardee grants to the

Government, and others acting on its behalf, a paid-up nonexclusive, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government. For computer software, the Awardee grants to the Government, and others acting on its behalf, a paid-up, nonexclusive, irrevocable, worldwide license in such copyrighted computer software to reproduce, prepare derivative works, and perform publicly and display publicly, by or on behalf of the Government.

(2) Data not first produced in the performance of this award. The Awardee shall not, without prior written permission of the Grants Officer, incorporate in data delivered under this award any data that are not first produced in the performance of this award unless the Awardee: (i) identifies such data; and (ii) grants to the Government, or acquires on its behalf, a license of the same scope as set forth in subparagraph (c)(1) of this clause.

(3) Removal of copyright notices. The Government will not remove any copyright notices placed on data pursuant to this paragraph (c) and will include such notices on all reproductions of the data.

(End of Clause)

### 5.04.03 NIST-Owned Inventions

Awardees will not have any automatic rights to make, use or sell products or services incorporating NIST-owned inventions. For any SBIR award that requires a license to use a NIST- owned invention covered by a patent or patent application, the SBIR awardee will be required to contact NIST's Technology Partnerships Office for a patent license for research or for commercial use.

To the extent that such NIST-owned invention is available for licensing and has not otherwise been exclusively licensed to another party, the SBIR awardee will be granted a non-exclusive research license and will be given the opportunity to negotiate a non-exclusive or an exclusive commercialization license to the NIST-owned invention, in accordance with the Federal patent licensing regulations, set forth in 37 C.F.R. Part 404.

### 5.04.04 Patent Rights

Normally, SBCs may retain worldwide patent rights to any invention developed with Federal support. The specific requirements governing the development, reporting, and disposition of rights to inventions and patents resulting from Federal awards are

described in more detail in 37 C.F.R. Part 401, which implements 35 U.S.C. § 202 through 204 and includes standard patent rights clauses in 37 C.F.R. § 401.14, which are incorporated by reference into all awards.

### 5.04.05 Invention Reporting

SBIR awardees must report inventions to the NIST SBIR Program Office within 2 months of the inventor's report to the awardee. Inventions must also be reported through the iEdison Invention Reporting System at www.iedison.gov.

## 5.05 Cost Sharing

Cost sharing is permitted for applications under this program NOFO; however, cost sharing is not required and will not be considered in evaluation of applications.

## 5.06 Profit or Fee

A reasonable profit or fee not to exceed 7% of the sum of the direct and indirect costs is allowed.

## 5.07 Joint Ventures or Limited Partnerships

Joint ventures and limited partnerships are eligible provided the entity created qualifies as an SBC as defined in this NOFO.

## 5.08 Research and Analytical Work

For Phase I, a minimum of two-thirds of the research and/or analytical effort, per Section 1.03, must be performed by the proposing SBC. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/subaward or purchase agreements may not exceed one-third of the total award. For Phase II, a minimum of one-half of the research and/or analytical effort, per Section 1.03, must be performed by the applicant. The total cost for all consultant fees, facility leases, usage fees, and other subcontract/subaward or purchase agreements may not exceed one- half of the total award.

## 5.09 Awardee Commitments

Upon award of a funding agreement, the awardee will be required to make certain legal commitments through acceptance of numerous Specific Award Conditions (SAC) in the funding agreement. Awards also will be governed by the Department of Commerce Financial Assistance General Terms and Conditions (October 1, 2024 or successor version); the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, adopted by the Commerce

Department through 2 C.F.R. § 1327.101; when applicable, 48 C.F.R. Subpart 31.2, Contracts with Commercial Organizations; and the Department of Commerce Pre-Award Notification Requirements for Grants and Cooperative Agreements, 79 FR 78390 (December 30, 2014).

Section 5.10 describes the types of terms and conditions to which the awardee would commit. This list is not a complete list of terms and conditions to be included in Phase I and Phase II funding agreements and is not the specific wording of such terms and conditions.

### 5.10 Summary Statements

The following statements apply to Phase I and Phase II awards and are examples of some of the topic areas that will be addressed in the award terms and conditions.

(1) Access to Records. Government officials have the right of timely and unrestricted access to records of awardees, including access to personnel for discussion related to the records. *See* 2 C.F.R. 200.337.

(2) Termination. Awards may be terminated (a) by the NIST Grants Officer, if an awardee materially fails to comply with the terms and conditions of an award; (b) by the Federal awarding agency or pass-through entity, to the greatest extent authorized by law, if an award no longer effectuates the program goals or agency priorities; (c) by the NIST Grants Officer with the consent of the awardee, in which case the two parties shall agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated; (d) by the awardee upon sending to the NIST Grants Officer written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. *See* 2 C.F.R. §§ 200.339-343.

(3) Non-Discrimination. The awardee will be required to comply with statutory and other non- discrimination requirements. No person in the United States shall, on the ground of race, color, national origin, handicap, age, religion, or sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance. *See* Section G.02 of the Department of Commerce Financial Assistance General Terms and Conditions (October 1, 2024).

(4) Audit Requirements. Government officials may conduct an audit of an award at any time. Unless otherwise specified in the award, for-profit organizations that expend $1,000,000 or more in Department of Commerce funds during their

fiscal year must have an audit conducted for that year in accordance with Section
D.01.c of the Department of Commerce Financial Assistance General Terms and Conditions (October 1, 2024).

(5) Codes of Conduct. The awardee must maintain written standards of conduct to establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain in the administration of the award. *See* Section F.01 of the Department of Commerce Financial Assistance General Terms and Conditions (October 1, 2024).

(6) Officials Not to Benefit. No Federal Government official may benefit personally, to include financial and/or profession gain, from the SBIR/STTR Funding Agreement.

(7) Duplication of Effort. The funding agreement shall not support the duplication of other federally-funded research.

(8) Scheduling and Use of Federal Agency Facilities and Equipment. The Awardee must schedule, reserve, and complete usage within the period of performance of the Funding Agreement.

### 5.11 Additional Information

This NOFO reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR funding agreement, the terms of the funding agreement are controlling.

Before award of a SBIR funding agreement, the Government may request the applicant to submit certain organizational, management, personnel, and financial information to assure responsibility of the applicant.

The Government is not responsible for any funds expended by the applicant before award of any funding agreement.

This program NOFO is not an offer by the Government and does not obligate the Government to make any specific number of awards. Also, awards under the SBIR Program are contingent upon the availability of funds.

The SBIR Program is not a substitute for existing unsolicited application mechanisms. Unsolicited applications will not be accepted under the SBIR Program in either Phase I or Phase II.

If an award is made pursuant to an application submitted under this SBIR Program

NOFO, a representative of the awardee will be required to certify that the concern has not previously been, nor is currently being, paid for essentially equivalent work by any Federal agency.

The responsibility for the performance of the principal investigator, and other employees or consultants who carry out the proposed work, including those of subrecipients or contractors, lies with the management of the organization receiving an award.

Safety is a top priority at NIST. Employees and affiliates of award recipients who conduct project work at NIST will be expected to be safety-conscious, to attend NIST safety training, and to comply with all NIST safety policies and procedures, and with all applicable terms of their guest research agreement.

**Notification to Unsuccessful Applicants.** Unsuccessful applicants will be notified by e-mail and will have the opportunity to receive a debriefing after the opportunity is officially closed. Applicants must request within 10 business days of the email notification to receive a debrief from the program office. The program office will then work with the unsuccessful applicant in arranging a date and time of the debrief.

**Retention of Unsuccessful Applications.** Unsuccessful applications will be retained in accordance with the General Record Schedule 1.2/021.

## 5.12 Technical and Business Assistance

NIST is committed to the goal of commercialization of the results of SBIR projects and will provide funding for Technical and Business Assistance (TABA) to Phase I and Phase II awardees as authorized by 15 U.S.C. § 638(q). The NIST TABA program assists in providing additional funding for the successful commercialization of products, services, or technologies developed in association with the NIST SBIR Program. The NIST TABA program provides funding for guidance and mentoring in topics such as assessing small business commercialization needs; planning, developing, and assisting in the preparation of a commercialization plan; and identifying markets and developing entry strategies. Allowable services include 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.

If requested, NIST may provide up to an additional $6,500 for TABA services during Phase I. NIST's inclusion of TABA funds in the award will be subject to the availability of NIST funding. To request TABA funding, include up to an additional $6,500 in the budget, provide vendor information in the budget justification that demonstrates the

provider can provide the services needed and include a letter of commitment from the provider (see Section 7.03 for additional information). NIST may disapprove a proposed TABA provider. TABA requests must be part of the application submission and may not be requested subsequent to award.

Reimbursement is limited to services received that comply with 15 U.S.C. § 638(q). Requested TABA funds should be clearly labeled in the Budget Narrative (see Section 7.03.7.).

### 5.13 Technical Assistance for Application Preparation and Project Conduct

Applicants may wish to contact the NIST Hollings Manufacturing Extension Partnership (MEP), a nationwide network of locally managed extension centers whose sole purpose is to provide small- and medium-sized manufacturers with the help they need to succeed. The centers provide guidance to high-technology companies seeking resources and teaming relationships. To be referred to an MEP center for technical assistance, call 1-800-MEP-4- MFG (1-800-637-4634) or visit MEP's website**.** MEP Centers are also prepared to provide referrals to state and local organizations offering resources and technical assistance to all NIST SBIR applicants after awards have been announced.

## 6.0 SCIENTIFIC AND TECHNICAL INFORMATION RESOURCES

Background information related to the NIST research programs referenced within the research areas may be found within the NIST website. The NIST Research Library, may also provide valuable scientific and technical information resources. A search for NIST-patented technologies may be conducted at the NIST Patent Website.

## 7.0 SUBMISSION OF APPLICATION, INCLUDING REQUIRED FORMS AND CERTIFICATIONS

### 7.01 Application Deadline

Phase I applications must be received no later than 11:59 p.m. Eastern Time, December 27, 2024. Only electronic applications submitted via Grants.gov will be accepted.

Applicants should be aware, and factor in their application submission planning, that the Grants.gov system closes periodically for routine maintenance. Applicants should visit Grants.gov for information on any scheduled closures. Applications cannot be submitted

when Grants.gov is closed.

Applicants are cautioned to be careful of unforeseen delays that can cause late arrival of applications, with the result that they **will not** be forwarded for evaluation.

Applications not received by the specified due date and time, as recorded by Grants.gov, or that do not adhere to the other requirements of this NOFO (*see* Section 4.02 Screening Criteria and Section 7.03 Complete Application: Required Forms and Documents) will not be considered. Requests for extensions will not be granted.

## 7.02 Preparation for Submission/Registration

Applicants are strongly encouraged to start early and not wait until the approaching due date before logging on and reviewing the instructions for submitting an application through Grants.gov. The Grants.gov registration process must be completed before a new registrant can apply. If all goes well, the registration process takes three (3) to five (5) business days. If problems are encountered, the registration process can take three (3) weeks or more. After registering, it may also take several days or longer from the initial log-on before a new Grants.gov system user can submit an application. Only authorized individuals(s) will be able to submit an application, and the system may need time to process a submitted application.

Applicants must have a valid unique entity identifier number and must maintain a current registration in the Federal government's primary registrant database, the System for Award Management (SAM.gov), as explained on the Grants.gov website. Pursuant to 2 C.F.R. Part 25, applicants and recipients (as the case may be) are required to: (i) be registered in SAM before submitting its application; (ii) provide a valid unique entity identifier in its application; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency, unless otherwise excepted from these requirements pursuant to 2 C.F.R. § 25.110.

NIST will not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time that NIST is ready to make a Federal award pursuant to this NOFO, NIST may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant. **Applicants will find instructions on registering with SAM.gov as part of the Grants.gov process at: https://www.grants.gov/applicants/applicant-registration.**

To find instructions on submitting an application on Grants.gov, Applicants should refer to the "Applicants" tab in the banner just below the top of the Grants.gov homepage. Clicking on the "Applicants" tab produces two exceptionally useful sources of information, Grant Applications and Applicant resources, which applicants are advised to review.

Applicants should pay close attention to the guidance under "Applicant FAQs," as it contains information important to successful submission on Grants.gov, including essential details on the naming conventions for attachments to Grants.gov applications.

### 7.03 Complete Application: Required Forms and Documents.

Applicants should review the following list carefully to ensure the proposal includes all required forms and documents. **Failure to include any of the applicable listed forms and/or documents will result in rejection of the proposal without consideration.** All required forms and documents must be complete. Please also review Section 4.02 Phase I Screening Criteria. Guidelines provided below are based on frequently asked questions and are not intended to be comprehensive – all forms must be fully completed.

A complete application contains the following forms and documents:

1. **SF-424 (R&R), Application for Federal Assistance. The SF-424(R&R) must be signed by an authorized representative of the applicant's organization.**

   For SF-424 (R&R), items 5, 14, and 19, use the Zip Code +4 format (##### - ####) when addresses are called for.

   For SF-424 (R&R), item 16, the NIST SBIR Program is not covered by that Executive Order. For SF-424 (R&R), item 17, the list of certifications and assurances is contained in the Federal Financial Assistance Certifications and Representations (Certs and Reps) as part of the SAM.gov entity registration.

   For SF-424 (R&R), item 18, if the SF-LLL, Disclosure of Lobbying Activities form (item 6. below) is applicable, attach it to field 18.

   Instructions for filling in the SF-424 (R&R) can be found on Grants.gov, as well as in the NIST Financial Assistance Agreements Management Office SF-424 Research and Related (R&R) Application Package Guidance.

2. **Research and Related Budget (Total Fed + Non-Fed).** The budget should reflect anticipated expenses for the full term of the project, considering all potential cost

increases, including cost of living adjustments.

The budget should be detailed in these categories:

A. Senior/Key Person;
B. Other Personnel;
C. Equipment Description;
D. Travel;
E. Participant/Trainee Support Costs (not relevant to this competition);
F. Other Direct Costs;
G. Direct Costs (automatically generated);
H. Indirect Costs;
I. Total Direct and Indirect Costs (automatically generated);
J. Fee;
K. Total Costs and Fee (automatically generated);
L. Budget Narrative and Justification document (item 8. below) should be attached to field L.

Instructions for completing the Research & Related Budget (Total Fed + Non-Fed) form can be found on Grants.gov, as well as in the NIST Financial Assistance Agreements Management Office SF-424 Research and Related (R&R) Application Package Guidance.

3. **CD-511, Certification Regarding Lobbying**. Enter "2025-NIST-SBIR-01" in the Award Number Field. Enter the title of the application used in field 11 of the SF-424 (R&R), or an abbreviation of that title, in the Project Name field.

4. **Research and Related Other Project Information**. Answer the highlighted questions and use this form to attach the Cover Sheet and Technical Proposal (item (6) below), the Indirect Cost Rate Agreement (item (8) below), the SBA Company Registry Form (item (9) below), the Data Management Plan (item (10) below), the Research & Related Personal Data form(s) (item 12 below), the Current and Pending Support Form (item (13) below), the Compliance with SBIR Program Requirements, Applicant Fraud Awareness Training (item (14) below), Letters of Commitment (item (15) below), Company Commercialization Report (item (16) below), and Appendix C. Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries (item (17) below). Instructions for completing the Research and Related Other Project Information can be found on Grants.gov, as well as in the NIST Financial Assistance Agreements Management Office SF-424 Research and Related (R&R) Application Package Guidance.

Please note that the Project Summary/Abstract is not relevant to this competition. However, Grants.gov requires an attachment to field 7 of the Research and Related Other Project Information form to successfully pass through Grants.gov. Please attach a document to field 7 stating, "A Project Summary/Abstract is not relevant to this competition".

There are no separate documents required for field 9, "Bibliography & References Cited'; or for field 10, "Facilities & Other Resources;" or for field 11, "Equipment". Any details relating to these topics should be included in other documents and forms, if and as specified in this NOFO.

5. **SF-LLL, Disclosure of Lobbying Activities (if applicable).**

6. **Cover Sheet (Appendix A) and Technical Proposal.** Read Section 3.02 of this NOFO very carefully, and in its entirety, for directions on completing this section of the application. The Technical Content is limited to 15 pages including optional letters of support – see Section 3.02.02.

7. **Budget Narrative and Justification**. There is no set format for the Budget Narrative and Justification; however, the written justification should include the necessity and the basis for the cost, as described below. Proposed funding levels must be consistent with the project scope, and only allowable costs should be included in the budget. Information on cost allowability is available in the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. Part 200, which apply to awards in this program. TABA funds, if requested by the applicant (see Section 5.12), should be included in the Budget Narrative and Justification.

   The Budget Narrative and Justification must be attached to the Research & Related Budget (Total Fed + Non-Fed), and it does not count against the 15-page limit of the Technical Proposal.

   Information needed for each budget category is as follows (categories not listed are automatically generated by the form or are not relevant to this competition):

   (a) **Senior/Key Person** - At a minimum, the budget justification should include the following: name, job title, commitment of effort on the proposed project in terms of average number of hours per week or percentage of time, salary rate, total direct charges on the proposed project, description of the role of the individual on the proposed project, and the work to be performed.

Fringe benefits should be identified separately from salaries and wages and based on rates determined by organizational policy. The items included in the fringe benefit rate (e.g., insurance, parking, etc.) should not be charged under another cost category.

(b) **Other Personnel** - Data is requested at the project role level, and not at the individual level for Other Personnel. The budget justification should include the following: job title, commitment of effort on the proposed project in terms of average number of hours per week or percentage of time, salary rate, total direct charges on the proposed project, description of the role of the position on the proposed project and the work to be performed.

Fringe benefits should be identified separately from salaries and wages and based on rates determined by organizational policy. The items included in the fringe benefit rate (e.g., health insurance, parking, etc.) should not be charged under another cost category.

(c) **Equipment Description** - Equipment is defined as an item of property that has an acquisition cost of $10,000 or more (unless the organization has established lower levels) and an expected service life of more than one year. The budget justification should list each piece of equipment, the cost, and a description of how it will be used and why it is necessary to the successful completion of the proposed project. Please note that any general use equipment (computers, etc.) charged directly to the award should be allocated to the award according to expected usage on the project (i.e. prorated cost). Any items that do not meet the threshold for equipment can be included under the Materials and Supplies line item in Section F, Other Direct Costs.

(d) **Travel** - For all travel costs, required by the recipient to complete the project, including attendance at any relevant conferences, the budget justification for travel should include the following: destination; names or number of people traveling; dates and/or duration; mode of transportation, lodging and subsistence rates; and description of how the travel is directly related to the proposed project. For travel that is yet to be determined, please provide best estimates based on prior experience. If a destination is not known, an approximate amount may be used with the assumptions given for the location of the meeting.

(f) **Other Direct Costs** - For costs that do not easily fit into the other cost categories, please list the cost, and the breakdown of the total costs by quantity

or unit of cost. Include the necessity of the cost for the completion of the proposed project. Only allowable costs can be charged to the award.

Each subaward or contractual cost should be treated as a separate item in the Other Direct Costs category. Describe the services to be provided and the necessity of the subaward or contract to the successful performance of the proposed project. Contracts are for obtaining goods and services. Subawardees perform part of the project scope of work. For each subaward, applicants must provide budget detail justifying the cost of the work performed on the project.

(h) **Indirect Costs** - Commonly referred to as Facilities & Administrative Costs, Indirect Costs are defined as costs incurred by the applicant organization that cannot otherwise be directly assigned or attributed to a specific project. For more details, *see* Section 7.03.8 of this NOFO.

(j) **Fee** – Profit or fee not to exceed 7% of the sum of the direct and indirect costs must be listed in this cost category if included in the proposed budget.

8. **Indirect Cost Rate Agreement**. NIST will not negotiate indirect cost rates for Phase I awards. If indirect costs are included in the proposed budget, provide a copy of the approved negotiated agreement if this rate was negotiated with a cognizant Federal audit agency. If a rate has not been established, provide a statement to this effect and a computation for the cost in the budget narrative. Applicants without an established rate may propose estimated indirect costs at a rate not to exceed 40 percent of the total direct costs and will not be required to provide further justification if selected for an award. Any profit or fee requested is not considered a direct cost for the purpose of the indirect cost base calculation.

9. **SBA Company Registry Form**. SBA maintains and manages a Company Registry to track ownership and affiliation requirements for all companies applying to the SBIR Program. The SBIR/STTR Policy Directive requires each Phase I applicant to register in the Company Registry prior to submitting an application. The applicant must save its information from the registration in a .pdf document. Attach this document to the Research and Related Other Project Information form as described in Section 7.04.

10. **Data Management Plan**. Consistent with NIST Policy 5700.00, *Managing Public Access to Results of Federally Funded Research*, and NIST Order 5701.00, *Managing Public Access to Results of Federally Funded Research*, applicants proposing projects that include the conduct of research must include a Data Management Plan (DMP).

All applications for activities that will generate scientific data using NIST funding are required to adhere to a DMP or explain why data sharing and/or preservation are not within the scope of the project. For the purposes of the DMP, NIST adopted the definition of "research data" at 2 C.F.R. § 200.315(e)(3).

The DMP must include, at a minimum, a summary of proposed activities that are expected to generate data; a summary of the types of data expected to be generated by the identified activities; a plan for storage and maintenance of the data expected to be generated by the identified activities, including after the end of the award's period of performance; and a plan describing whether and how data generated by the identified activities will be reviewed and made available to the public.

A template for the DMP, an example DMP, and the rubric against which the DMP will be evaluated for sufficiency is available on NIST's Public Access to NIST Research Information for Awardees webpage. Please pay particular attention to the 20 Performance Criteria (PC) that appear in the rubric section (see pages 5 to 12 in the DMP template) and ensure all 20 PCs are addressed.

If an application stands a reasonable chance of being funded and the DMP is determined during the review process to be insufficient, the program office may contact the applicant to resolve the deficiencies in the DMP. If an award is issued prior to the deficiencies being fully rectified, the award will include a Specific Award Condition (SAC) stating that no research activities shall be initiated, or costs incurred for those activities under the award until the NIST Grants Officer amends the award to indicate the SAC has been satisfied.

Reasonable costs for data preservation and access may be included in the application.

11. **Subaward Budget Form**. The Research & Related Subaward Budget Attachment Form is required if sub-recipients and contractors are included in the application budget.

    Instructions for completing and attaching subaward budget forms are available by visiting the R & R Family section of the Grants.gov Forms Repository and scrolling down to the R & R Subaward Budget Attachment(s) Form and selecting "Instructions."

12. **Research & Related Personal Data**. Answer the highlighted questions. Complete and print the form available in the R&R Family section of the Grants.gov Forms Repository and scrolling down to the Research & Related Personal Data form. Attach this document to the Research and Related Other Project Information form as described in Section 7.04.

13. **Current and Pending Support Form**. Any application that includes investigators, researchers, and key personnel must identify all sources of current and potential funding, including this proposal. Any current project support (e.g., Federal, state, local, public, or private foundations, etc.) must be listed on this form. The proposed project and all other projects or activities requiring a portion of time of the Principal Investigator (PI), co-PI, and key personnel must be included, even if no salary support is received. The total award amount for the entire award period covered, including indirect costs, must be shown as well as the number of person-months per year to be devoted to the project, regardless of the source of support. Similar information must be provided for all proposals already submitted or that are being submitted concurrently to other potential funders.

    Applicants must complete the Current and Pending Support Form, using multiple forms as necessary to account for all activity for each individual identified in the PI, co-PI, and key personnel roles. A separate form should be used for each identified individual.

    Applicants must download the Current and Pending Support Form from the NIST Financial Assistance Agreements Management Office Current and Pending Support webpage and reference the guidance provided as it contains information to assist with accurately completing the form.

14. **Compliance with SBIR Program Requirements, Applicant Fraud Awareness Training – Certification of Training Completion**. Complete the training at: https://www.nist.gov/file/384881. After completion, print and fill out the last page of the training presentation. Attach this document to the Research and Related Other Project Information form as described in Section 7.04

15. **Letters of Commitment**. Letters must be submitted by all funded and unfunded entities that will have an active role in executing the activities outlined in the Project Narrative. Letters of Commitment must address the level of participation, qualifications of the personnel who will be actively involved, and how successful completion of this project would positively impact their profession or community. Letters of Commitment must also specify any voluntary committed cost-share, including the specific services and/or products to be used in the project. Letters of Commitment must be signed by an individual with authority to legally bind the organization to its commitment. Letters of commitment do not count against the specified page limits.

16. **Company Commercialization Report (CCR**). Attach a PDF copy of the CCR which was completed in your account at Sbir.gov and submit along with your proposal (refer

to Section 3.01.01 SBA Data Collection Requirement).

17. **Appendix C. Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries**. Attach a PDF copy of the completed signed and dated Appendix C disclosure form and submit along with your proposal.

### 7.04 Attachment of Required Application Documents

Applicants should carefully follow specific Grants.gov instructions at  to ensure the attachments will be accepted by the Grants.gov system. Attachment file names should be kept as short as possible due to potential file corruption after the addition of extensions by Grants.gov.

Items 7.03.1 through 7.03.4 above are part of the standard application package in Grants.gov and can be completed through the download application process.

Item 7.03.5, the SF-LLL, Disclosure of Lobbying Activities form, is an optional application form which is part of the standard application package in Grants.gov. If item 7.03.5, the SF-LLL, Disclosure of Lobbying Activities form is applicable to this proposal, attach it to field 18 of the SF-424 (R&R), Application for Federal Assistance.

Item 7.03.6, the Cover Sheet, and Technical Proposal, should be attached to field 8 (Project Narrative) of the Research and Related Other Project Information form by clicking on “Add Attachment”.

Item 7.03.7, the Budget Narrative and Justification, should be attached to field L (Budget Justification) of the Research and Related Budget (Total Fed + Non-Fed) form by clicking on “Add Attachment”.

Items 7.03.8, the Indirect Cost Rate Agreement; 7.03.9, the SBA Company Registry Form; 7.03.10, the Data Management Plan; 7.03.12, the Research & Related Personal Data; 7.03.13, the Current and Pending Support Form; 7.03.14, the SBIR Applicant Fraud Awareness Training Certificate of Training Completion; 7.03.15, Letters of Commitment; 7.03.16, Company Commercialization Report (CCR), and 7.03.17, Appendix C. Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries, must be attached by clicking on “Add Attachments” found in item 12 (Other Attachments) of the Research and Related Other Project Information form.

Item 7.03.11, the Subaward Budget Form(s), if applicable to the submission, should be attached to the Research & Related Subaward Budget (Total Fed + Non-Fed) Attachment(s) Form in the application package.

Following these directions will create zip files which permit transmittal of the documents electronically via Grants.gov.

### 7.05 Application Submission

1) Applications must be submitted electronically through Grants.gov under announcement 2025-NIST-SBIR-01.
   Paper applications or applications submitted by other electronic means will not be accepted.

   Supplementary material, revisions, substitutions, audio or video tapes, or computer storage media or devices will not be accepted. While applicants may not submit replacement pages or missing documents once an application has been submitted, an applicant may submit a complete, new application including such information by the required deadline. Applications are limited to one proposal per SBC. The last application received in Grants.gov will be used for evaluation.

   For further information or questions regarding the electronic application process for the 2025-NIST-SBIR-01 announcement, send inquiries via e-mail to grants@nist.gov.

   If problems occur while using Grants.gov, the applicant is advised to: (a) print any error message received and (b) call Grants.gov directly for immediate assistance. If calling from within the United States or from a U.S. territory, please call 800-518- 4726. If calling from a place other than the United States or a U.S. territory, please call 606-545- 5035. Assistance from the Grants.gov Help Desk will be available around the clock every day, with the exception of Federal holidays. Help Desk assistance will resume at 7:00 a.m. Eastern Time the day after Federal holidays. For assistance using Grants.gov, you may also contact support@grants.gov.

   After submitting the application, Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a federal agency's electronic system has received its application. Closely following the detailed information in these subcategories will increase the likelihood of acceptance of the application by the Federal agency's electronic system.

   The Grants.gov Online Help page provides vital information on checking the

status of applications. See especially the “Check Application Status” option, found by clicking first on Applicants, and then by clicking on Grant Applications.

The application must be both received and validated by Grants.gov. The application is “received” when Grants.gov provides the applicant a confirmation of receipt and an application tracking number. If an applicant does not see this confirmation and tracking number, the application has not been received. After the application has been received, it must still be validated. During this process, it may be “validated” or “rejected with errors.” To know whether the application was rejected with errors and the reasons why, the applicant must log in to Grants.gov, select “Applicants” from the top navigation, and select “Track my application” from the drop-down list. If the status is “rejected with errors,” the applicant may still seek to correct the errors and resubmit your application before the deadline. If the applicant does not correct the errors, the application will not be forwarded to NIST by Grants.gov.

**NIST uses the Tracking Numbers assigned by Grants.gov and does not issue Agency Tracking Numbers.**

**Any amendments to this NOFO will be announced through Grants.gov. Applicants can sign up for Grants.gov NOFO amendments or may request copies from Nicole Berry by e-mail to nicole.berry@nist.gov.**

## 7.06 Verifying the Submission and Tracking the Application

A receipt from Grants.gov indicates only that an application was transferred to a system. It does not provide details concerning whether all attachments (or how many attachments) transferred successfully. Applicants will receive a series of e-mail messages over a period of up to two business days before learning whether a Federal agency’s electronic system has received its application.

Applicants are strongly advised to use Grants.gov’s “Download Submitted Forms and Applications” option to check that their application’s required attachments were contained in their submission.

After submitting the application, check the status of your application here: CHECK APPLICATION STATUS. If any, or all, of the required attachments are absent from the submission, follow the attachment directions found above, resubmit the application, and check again for the presence of the required attachments.

*It can take up to two business days for an application to fully move through the Grants.gov system to NIST. NIST uses the Tracking Numbers assigned by Grants.gov and does not issue Agency Tracking Numbers.*

### 7.07 Unique Identifier and System for Award Management (SAM)

Pursuant to 2 C.F.R. Part 25, applicants and recipients (as the case may be) are required to: (i) be registered in SAM before submitting its application; (ii) provide a valid unique entity identifier in its application; and (iii) continue to maintain an active SAM registration with current information at all times during which it has an active Federal award or an application or plan under consideration by a Federal awarding agency, unless otherwise excepted from these requirements pursuant to 2 C.F.R. § 25.110.

NIST will not make a Federal award to an applicant until the applicant has complied with all applicable unique entity identifier and SAM requirements and, if an applicant has not fully complied with the requirements by the time that NIST is ready to make a Federal award pursuant to this NOFO, NIST may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

## 8.0 RESEARCH AREAS

The NIST research programs work at the frontiers of measurement science to ensure that the U.S. system of measurements is firmly grounded in sound scientific and technical principles. Today, the NIST laboratories address increasingly complex measurement challenges, ranging from the very small (nanoscale devices for advanced computing) to the very large (vehicles and buildings), and from the physical (resilient infrastructure) to the virtual (cybersecurity and data science). As new technologies develop and evolve, NIST's measurement research and services remain central to national defense, homeland security, trade, and innovation.

NIST's research activities provide industry, academia, and other federal agencies with world- class research capabilities in measurement science that form the foundation of the global system of weights and measures and enable innovation. NIST provides measurement tools and standards to strengthen U.S. competitiveness and security in the following areas:

**Advanced Communications (or Next-gen Communications)**

NIST plays a key role in ensuring that American industry is well-positioned globally to

meet the rising market demand for broadband technologies, measures and tests the wireless ecosystem to inform the next generation of wireless technologies, and partners with other Federal government agencies to identify technical gaps critical to the sustained innovation of post-5G wireless systems. NIST conducts research and development into core network technologies to improve the quality and timeliness of standards and accelerate adoption by industry. NIST also conducts work on spectrum sharing and sensing and works to develop metrology for spectrum usage, sensing, and optimization.

**Artificial Intelligence**

NIST aims to cultivate trust in the design, development, use, and governance of Artificial Intelligence (AI) technologies and systems. NIST contributes to the research, standards, and global cooperation to develop and advance safe and responsible AI and builds upon efforts initiated as part of the NIST AI Risk Management Framework (RMF) as well as the U.S. AI Safety Institute (AISI). The AISI will continue to focus on advancing the science, practice, and adoption of AI safety across the spectrum of risks, including those to national security, public safety, and individual rights while the NIST Laboratories will continue to develop and promote the measurement science, standards, and guidelines that are critically needed to enable innovations that harness the benefits of AI.

**Biotechnology**

NIST enables the design and manufacture of biological systems for products such as high-value pharmaceuticals and commodity chemicals by developing advanced measurement capabilities from the molecular to the cellular system scale. NIST plays a significant role to promote and protect the U.S. bioeconomy through building next-generation measurement science (biometrology) capabilities and engineering biology laboratories for accelerating responsible biotechnology innovations. NIST balances the promote and protect aspects of the bioeconomy, including research into the underpinning measurements to enable new biological products while working with the private sector to develop standards to help defend against the misuse of biotechnology.

**Cybersecurity and Privacy**

NIST develops cybersecurity standards, guidelines, best practices, and other resources to meet the needs of U.S. industry, federal agencies, and the broader public. NIST's cybersecurity and privacy work ranges from specific information that can be put into practice immediately to longer-term research that anticipates advances in technologies and future challenges. NIST also provides trusted tools and resources to increase the sound use of cryptography, to protect information created and transmitted by the Internet of Things (IoT) and other miniature technologies.

## Energy Technologies

As the U.S. and the world continue to adopt more renewable and cleaner energies, the need for consistent standards and measurements increases. As the solar photovoltaic technology industry grows, there is a growing need for standards to enable the calibration of industry measurements and reliable calculations of energy output and efficiency. NIST also studies energy-efficient building technologies in a realistic home environment through the NIST Net-Zero Energy Residential Test Facility. NIST will continue to conduct extensive measurement research to track emissions, including developing sensors to measure temperature and greenhouse gas emissions. Similarly, NIST's energy research encompasses not only traditional fuels but also alternative and renewable fuels which are growing in utility and in need of pre-standardization research.

## Manufacturing

NIST works with industry, academia, and other government agencies to develop essential measurement capabilities and forge precompetitive collaborations that help U.S. manufacturers overcome shared technical obstacles. NIST establishes the technical basis for the development of multiple manufacturing-related standards, including new high-impact standards in the areas of metals-based additive manufacturing, manufacturing robotics, and manufacturing data infrastructure and analytics. NIST releases ontology models to support digital twins of continuous biomanufacturing processes and extend the developed standards to enable domain-specific implementation of digital twins in manufacturing.

## Quantum Information Science

NIST supports industry in extending present-day small-scale quantum demonstrations to the large-scale quantum systems needed for high-impact applications and addressing complex material properties that currently limit the performance of quantum devices. To mitigate risks posed by future quantum computers, NIST recently released algorithms for post-quantum cryptography (PQC), also called quantum-resistant cryptographic algorithms, as standards for use by the U.S. and international organizations. NIST efforts aid the responsible growth of the nascent quantum technology ecosystem, comprised of developing the robustness of the associated domestic supply chain and meeting novel security threats posed by advances in quantum technologies.

## Resilience

NIST's resilience research focuses on the impact of hazards on buildings and communities and on post-disaster studies to help improve standards, codes, and practices for buildings and infrastructure systems. Additionally, NIST conducts wildfire

investigations that play a key role in understanding the progression of flames throughout communities in the wildland-urban interface (WUI). Recommendations from these investigations help ensure that codes, standards, and practices are revised so that building failures like these do not happen again in the future.

**Standards**

A standard is a rule, condition, or requirement that describes classification of components; specification of materials, performance, or operations; or delineation of procedures for products, systems, services, or practices. Standards are essential to commerce, allowing technology to work seamlessly and business to operate smoothly. They provide industries and innovators with a common language that facilitates trade, simplifies transactions, and enables people to work together toward greater common goals that cut across disciplines and borders. The U.S. Government will strengthen its support for standards development in order to promote standards that are technologically sound and help American industry compete on a level playing field.

OMB Control No. 0693-0072
Expiration Date: 5/31/2027

# Appendix A. COVER SHEET

**(A fillable version of the Cover Sheet is available at http://www.nist.gov/sbir)**

## Application to National Institute of Standards and Technology (NIST) Small Business Innovation Research (SBIR) Program Phase I

## Cover Sheet

| | | | |
|---|---|---|---|
| **Name & Address of Submitting Firm:** | | | |
| **Project Title** | | | |
| **Principal Investigator (PI) Name** | | **PI Title** | |
| **PI Phone #** | | **PI Email** | |

**NIST may verify the following responses with information provided elsewhere in your application or by independent sources.**

| **THE APPLICANT CERTIFIES THAT:** | |
|---|---|
| 1. It is a small business concern (SBC) and meets the definition as stated in this Notice of Funding Opportunity (NOFO). | ☐ Yes ☐ No |
| 2. The primary employment of the PI will be with the SBC at the time of award and during the conduct of research. | ☐ Yes ☐ No |
| 3. A minimum of either two-thirds for Phase I or one-half for Phase II of the research will be performed by the SBC as determined by data provided in the Budget Narrative. See NOFO Section **1.03.01** for details on funding determination. | ☐ Yes ☐ No |
| 4. The applicant and/or PI ☐ has ☐ has not submitted applications for essentially equivalent work under other Federal program FFOs and ☐ has ☐ has not received other Federal awards for essentially equivalent work. If "has", what agency? Click here to enter text. See NOFO Section 3.02.02(14) for additional details that must be provided. | |
| 5. The applicant qualifies as a socially and economically disadvantaged SBC and meets the definition as stated in this NOFO. | ☐ Yes ☐ No |
| 6. The applicant qualifies as a woman-owned SBC and meets the definition as stated in this NOFO. | ☐ Yes ☐ No |
| 7. The applicant qualifies as a HUBZone-owned SBC and meets the SBA's definition(see http://www.sba.gov/hubzone). | ☐ Yes ☐ No |
| 8. Year SBC founded: | Click here to enter text. |
| 9. Number of Employees: | Click here to enter text. |
| **STATEMENTS:** | |
| 10. The applicant will permit the Federal Government to disclose name, address, and telephone number of the corporate official of your concern, if your application does not result in an award, to appropriate local and State-level economic development organizations that may be interested in contacting you for further information. | ☐ Yes ☐ No |

| | |
|---|---|
| 11. The applicant authorizes contact information and project title to be provided to the NIST Manufacturing Extension Partnership (MEP) after awards have been announced. If 'Yes', your contact information may be provided to NIST MEP. You can also find your local MEP center at www.nist.gov/mep/centers to contact and explore business-related support services that could benefit the potential of the project you proposed. | ☐ Yes ☐ No |

| | |
|---|---|
| Signature of Company Official and typed name, title, address, telephone number, and date | |
| Signature of Principal Investigator and typed name, title, address, telephone number, and date | |

**TECHNICAL ABSTRACT (limit to 200 words):**

**POTENTIAL COMMERCIAL APPLICATION OF THE RESEARCH: (limit to 100 words)**

**OTHER INFORMATION:**

Information contained in unsuccessful applications will remain the property of the applicant. The Federal Government may, however, retain copies of all applications. Public release of information in any application submitted will be subject to existing statutory and regulatory requirements. Applicants are discouraged from submitting proprietary information unless the information is deemed essential for proper evaluation of the application. If proprietary information provided by an applicant in a proposal constitutes trade secret, proprietary commercial or financial information, confidential personal information, or data affecting national security, it will be treated in confidence to the extent permitted by law, provided that the proposal is clearly marked by the applicant as follows:

(A) The following legend must appear on the title page of the proposal:

This proposal contains information that shall not be disclosed outside the Federal Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal, unless authorized by law. The Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting award if award is made as a result of the submission of this proposal. The information subject to these restrictions are contained on all pages of the proposal except for pages [insert page number or other identification of pages that contain no restricted information.]

(End of Legend); and

(B) The following legend must appear on each page of the proposal that contains information the applicant wishes to protect:

Use or disclosure of information contained on this sheet is subject to the restriction on the title page of this proposal.

The use of any other legend is unacceptable to the Government and may constitute grounds for removing the application from further consideration without assuming any liability for inadvertent disclosure.

This collection of information contains Paperwork Reduction Act (PRA) requirements approved by the Office of Management and Budget (OMB). Notwithstanding any other provisions of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA unless that collection of information displays a currently valid OMB control number. Public reporting burden for this collection is estimated to be 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing this burden, to the National Institute of Standards and Technology, Attn: Jacqueline Gray, 100 Bureau Dr., MS 2200, Gaithersburg, MD 20899.

# APPENDIX B. CERTIFICATIONS

## SBIR Funding Agreement Certification (at time of award)

All small businesses that are selected for award of an SBIR funding agreement must complete this certification at the time of award and any other time set forth in the funding agreement that is prior to performance of work under this award. This includes checking all of the boxes and having an authorized officer of the awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to determine whether the business is eligible for a Small Business Innovation Research (SBIR) Program award. A similar certification will be used to ensure continued compliance with specific program requirements during the life of the funding agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, SBA regulations (13 C.F.R. Part 121), the SBIR/STTR Policy Directive and also any statutory and regulatory provisions referenced in those authorities.

If the funding agreement officer believes that the business may not meet certain eligibility requirements at the time of award, they are required to file a size protest with the U.S. Small Business Administration (SBA), who will determine eligibility. At that time, SBA will request further clarification and supporting documentation in order to assist in the verification of any of the information provided as part of a protest. If the funding agreement officer believes, after award, that the business is not meeting certain funding agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified, and certifies that (all questions must be responded to by checking the appropriate box):

(1) The Awardee business concern meets the ownership and control requirements set forth in 13 C.F.R. § 121.702

☐ Yes ☐No

(2) If a corporation, all corporate documents (namely: articles of incorporation and any amendments, articles of conversion, by-laws and amendments, shareholder meeting minutes showing officer elections, organizational meeting minutes, all issued stock certificates, stock ledger, buy-sell agreements, stock transfer agreements, voting agreements, and documents relating to stock options, including the right to convert non-voting stock or debentures into voting stock) must include evidence that the corporation meets the ownership and control requirements set forth in 13 C.F.R. § 121.702.

☐ Yes ☐No ☐N/A Explain why N/A:

(3) If a partnership, the partnership agreement evidences that it meets the ownership and control requirements set forth in 13 C.F.R. § 121.702

☐ Yes ☐No ☐N/A Explain why N/A:

-

(4) If a limited liability company, the articles of organization and any amendments, and operating agreement and amendments, evidence that it meets the ownership and control requirements set forth in 13 C.F.R. § 121.702.

☐ Yes ☐No ☐N/A Explain why N/A:

-

(5) The birth certificates, naturalization papers, or passports show that any individuals it relies upon to meet the eligibility requirements are U.S. citizens or permanent resident aliens in the United States.

☐Yes ☐No ☐N/A Explain why N/A:

-

(6) The Awardee business concern has no more than 500 employees, including the employees of its affiliates.

☐ Yes ☐No

(7) SBA has not issued a size determination currently in effect finding that this business concern exceeds the 500-employee size standard.

☐ Yes ☐No

(8) During the performance of the award, the principal investigator will spend more than one half of his/her time (based on a 40-hour workweek) as an employee of the awardee or has requested and received a written deviation from this requirement from the funding

agreement officer.

☐ Yes ☐No ☐Deviation approved in writing by funding agreement officer: _____%

(9) All, essentially equivalent work, or a portion of the work proposed under this project (check the applicable line):

a. **Has not** been submitted for funding to this agency or another Federal agency.

b. **Has** been submitted for funding to this agency or another Federal agency **but has not** been funded under any other grant, contract, subcontract, or other transaction.

c. A portion has been funded by another grant, contract, or subcontract as described in detail in the application and approved in writing by the funding agreement officer.

(10) During the performance of award, the Awardee will perform the applicable percentage of work unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

a. SBIR Phase I: at least two-thirds (66 2/3%) of the research.

b. SBIR Phase II: at least half (50%) of the research.

c. Deviation approved in writing by the funding agreement officer:_____%

(11) During performance of award, the research/research and development will be performed in the United States unless a deviation is approved in writing by the funding agreement officer.

☐ Yes ☐No ☐Waiver has been granted

(12) During performance of award, the research/research and development will be performed at the Awardee's facilities with the Awardee's employees, except as otherwise indicated in the SBIR application and approved in the funding agreement.

☐Yes ☐No

(13) The SBIR Awardee has registered itself on SBA's database as majority-owned by venture capital operating companies, hedge funds or private equity firms.

☐Yes ☐No ☐N/A Explain why N/A:

-

(14) The SBIR Awardee is a Covered Small Business Concern (a small business concern that:(a) was not majority-owned by multiple venture capital operating companies (VCOCs), hedge funds, or private equity firms on the date on which it submitted an application in response to an SBIR solicitation; and (b) on the date of the SBIR award, which is made more than 9 months after the closing date of the solicitation, is majority-

owned by multiple venture capital operating companies, hedge funds, or private equity firms).

☐ Yes ☐No

(15) The SBIR Awardee will notify this agency immediately if all or a portion of the work authorized and funded under this award is subsequently funded by another Federal agency.

☐ Yes ☐No

(16) I understand that the information submitted may be given to Federal, State, and local agencies for determining violations of law and other purposes.

☐Yes ☐No

I am an officer of the business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern that the information provided in this certification, the application, and all other information submitted in connection with this application, is true and correct as of the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. § 1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C.§ 3729 *et seq.*); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. § 3801 *et seq.*); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. Part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

*Signature*_____*Date*____/___/_____

*Print Name (First, Middle, Last)*_____

*Title*_____

*Business Name*_____

## SBIR Funding Agreement Certification (Life-Cycle Certification)

All SBIR Phase I and Phase II awardees must complete this certification at all times set forth in the funding agreement (see §8(j) of the SBIR/STTR Policy Directive). This includes checking all of the boxes (unless otherwise directed) and having an authorized officer of the awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to ensure compliance with specific program requirements during the life of the funding agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, the SBIR/STTR Policy Directive, and also any statutory and regulatory provisions referenced in those authorities.

If the funding agreement officer believes that the business is not meeting certain funding agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil, or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified, and certifies that (all questions must be responded to by checking the appropriate box):

(1) The principal investigator spent more than one half of his/her time (based on a 40-hour workweek) as an employee of the awardee or the awardee has requested and received a written deviation from this requirement from the funding officer.
☐ Yes ☐No ☐Deviation approved in writing by funding agreement officer:_____%

(2) All, essentially equivalent work, or a portion of the work performed under this project (check applicable line):
☐ **Has not** been submitted for funding to this agency or another Federal agency.
☐ **Has** been submitted for funding to this agency or another Federal agency but **has not** been funded under any other grant, contract, subcontract, or other transaction.

(3) A portion has been funded by another grant, contract, or subcontract as described in detail in the proposal and approved in writing by the funding agreement officer. Upon completion of the award the awardee will have performed the applicable percentage or work, unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

☐ SBIR Phase I: at least two-thirds (66 2/3%) of the research.
☐ SBIR Phase II: at least half (50%) of the research.
☐ Deviation approved in writing by the funding agreement officer:_____%

(4) The work is completed, and the small business awardee has performed the applicable percentage of work, unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

☐ SBIR Phase I: at least two-thirds (66 2/3%) of the research.
☐ SBIR Phase II: at least half (50%) of the research.
☐ Deviation approved in writing by the funding agreement officer:_____%
☐ N/A because work is not completed.

(5) The research/research and development is performed in the United States unless a deviation is approved in writing by the funding agreement officer.

☐ Yes ☐No ☐Waiver has been granted

(6) The research/research and development is performed at the awardee's facilities by the awardee's employees, except as otherwise indicated in the SBIR application and approved in the funding agreement.

☐ Yes ☐No

(7) I will notify the Federal agency immediately if all or a portion of the work authorized and funded under this award is subsequently funded by another Federal agency.

☐ Yes ☐No

(8) I understand that the information submitted may be given to Federal, State, and local agencies for determining violations of law and other purposes.

☐ Yes ☐No

(9) I am an officer of the awardee business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern, that the information provided in this certification, the application, and all other information submitted in connection with the award, is true and correct as the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C.

§ 1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. § 3729 *et seq.*); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. § 3801 *et seq.*); (4) civil recovery of award funds; (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. Part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

☐ Yes ☐ No

*Signature*_____*Date*____/___/_____

*Print Name (First, Middle, Last)*_____

*Title*_____

*Business Name*_____

## Appendix C. Required Disclosures of Foreign Affiliations or Relationships to Foreign Countries

**(A fillable version of this Appendix C, is available at http://www.nist.gov/sbir)**

**Relevant Definitions**

**Covered individual** - the term "covered individual" means an individual who-

(A) contributes in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award from a federal research agency; and

(B) is designated as a covered individual by the federal research agency concerned.

**Foreign affiliation -** the term "foreign affiliation" means a funded or unfunded academic, professional, or institutional appointment or position with a foreign government or government-owned entity, whether full-time, part-time, or voluntary. This includes appointments or positions deemed adjunct, visiting, or honorary with research institutions located in a foreign country of concern.

**Foreign country of concern** - the term "foreign country of concern" means the People's Republic of China, the Democratic People's Republic of Korea, the Russian Federation, the Islamic Republic of Iran, or any other country determined to be a country of concern by the Secretary of State.

**Malign foreign talent recruitment program -** the term "malign foreign talent recruitment program" has the meaning given such term in section 19237 of title 42.

**Federally funded award** - the term "federally funded award" means a Phase I, Phase II (including a Phase II award under subsection (cc)), or Phase III SBIR or STTR award made using a funding agreement.

**Applicant or awardee Name: _____**

**Applicant or awardee EIN (UEI if EIN is unavailable): _____**

Responses to disclosure questions may contain trade secrets or commercial or financial information that is privileged or confidential and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with an award between the submitter and the Government.

An up-to-date list of countries determined to be countries of concern by the Secretary of State will be maintained and accessible on SBIR.gov at https://www.sbir.gov/foreign_disclosures.

**Disclosure Questions**

1. Is any owner or covered individual of the applicant or awardee party to any malign foreign talent recruitment program?
   ☐ Yes ☐ No

   If yes, disclose the first and last name of each owner or covered individual, identify their role (i.e., owner or covered individual), and the malign foreign talent recruitment program.

   _____

   _____

2. Is there a parent company, joint venture, or subsidiary, of the applicant or awardee that is based in or receives funding from, any foreign country of concern?
   ☐ Yes ☐ No

   If yes, disclose the name, full address, applicant, or awardee relationships (i.e., parent company, joint venture, or subsidiary) of each entity based in, or funded by, any foreign country of concern.

   _____

   _____

3. Does the applicant or awardee have any current or pending contractual or financial obligation or other agreement specific to a business arrangement, or joint venture-like arrangement with an enterprise owned by a foreign state or any

foreign entity?
☐ Yes ☐ No

If yes, disclose the name of each enterprise or foreign entity, type of obligation, agreement, or arrangement (i.e., contractual, financial, or other), description of obligation, agreement, or arrangement, and the foreign state(s) and/or the country of the foreign entity (or entities).

_____

_____

4. Is the applicant or awardee wholly owned in a foreign country?
☐ Yes ☐ No

If yes, disclose the foreign country.

_____

_____

5. Does the applicant or awardee have any venture capital or institutional investment?
☐ Yes ☐ No

If yes, proceed to question 5a. If no, proceed to question 6.

*5a.* Does the investing entity have a general partner or any other individual holding a leadership role who has a foreign affiliation with any foreign country of concern?

☐ Yes ☐ No ☐ Unable to determine

If yes or unable to determine, disclose the venture capital or institutional investing entity's name, the percentage of ownership obtained by the investing entity, and the type of investment (i.e., equity, debt, or combination of equity and debt).

_____

_____

6. During the previous 5-year period, did the applicant or awardee have any technology licensing or intellectual property sales or transfers, to a foreign country of concern?
☐ Yes ☐ No

If yes, disclose the name, address, and country, of the institution or entity that licensed, purchased, or received the technology or intellectual property.

_____

_____

7. Is there any foreign business entity, offshore entity, or entity outside the United States related to the applicant or awardee?

☐ Yes ☐ No

If yes, disclose the entity name, relationship type (i.e., foreign business entity, offshore entity, entity outside the United States), description of the relationship to the applicant or awardee, and entity address and country.

_____

_____

8. Does the applicant or awardee have an owner, officer, or covered individual that has a foreign affiliation with a research institution located in a foreign country of concern?

☐ Yes ☐ No

If yes, disclose the first and last name of each owner, officer, or covered individual that has a foreign affiliation with a foreign country of concern, identify their role (i.e., owner, officer, or covered individual), and the name of the foreign research institution and the foreign country of concern where it is located.

_____

_____

*Signature*_____*Date*___/___/____

*Print Name (First, Middle, Last)*_____

*Title*_____

*Business Name*_____