



# USC University of Southern California

## OFFICE OF RESEARCH & INNOVATION

### Request For Proposals Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Planning Award

#### **FUNDING ORGANIZATION**

**USC Office of Research & Innovation (OORI)**

#### **APPLICATION DEADLINE**

**5 PM Pacific Time on January 8, Annually**

Proposals submitted after this deadline will be rejected without review. When a due date falls on a weekend, federal holiday, or when USC offices are closed due to severe weather, the application deadline is automatically extended to the next business day.

#### **SCIENTIFIC MERIT REVIEW**

**February - March**

#### **PROGRAMMATIC REVIEW**

**April - May**

#### **NOTIFICATION**

**June**

#### **EARLIEST AWARD DATE**

**July - August**

#### **AWARD PROJECT PERIOD**

**Maximum project period is one year**

#### **AWARDS (UP TO)**

**\$300,000**

The number of awards is contingent upon the receipt of a sufficient number of meritorious applications. All awards are subject to the yearly availability of funds, terms and conditions, cost principles, and other considerations.

#### **BACKGROUND**

The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs across multiple federal funding agencies, also known as America's Seed Fund, are one of the largest sources of early-stage capital for technology commercialization in the United States. These programs enable US-owned and operated small businesses to conduct research and development that has a strong potential for commercialization. The SBIR program, as established by law and reauthorized under Public Law 114-328, Section 1834 and Public Law 115-232, is intended to meet the following goals: stimulate technological innovation in the private sector; strengthen the role of small business in meeting federal research and development needs; increase the private sector commercialization of innovations developed through federal research and development funding; and foster and encourage participation in innovation and entrepreneurship

by women and socially or economically disadvantaged persons. The STTR program aims to foster technology transfer through cooperative research and development between small businesses and research institutions.

Federal SBIR/STTR funding programs are phased. The main objective in an SBIR/STTR Phase I proposal is to establish the technical merit and feasibility of the proposed research and development efforts. For small businesses that have already demonstrated scientific and technical merit and feasibility, an SBIR/STTR Phase II project continues R&D efforts to advance the technology toward ultimate commercialization. Fast-Track projects incorporate a submission and review process in which both Phase I and Phase II applications are submitted and reviewed together as one application to reduce or eliminate the funding gap between phases. At the conclusion of an SBIR/STTR Phase II project, it is expected that the small business will fully commercialize their product or technology using either non-SBIR/STTR federal or non-federal funds. Applicants are expected ultimately to secure substantial independent third-part investor funds from another company, venture capital firm, angel investor, foundation, university, research institution, state or local government, or any combination of the above.

## **OPPORTUNITY**

The Office of Research & Innovation (OORI) SBIR/STTR Planning Award intends to establish and bolster USC's ongoing technology transfer and commercialization efforts. This will be accomplished by supporting faculty partnered with a small business to plan and prepare for submitting a competitive SBIR/STTR application to a federal funding agency. In either case, the proposal application to a federal agency will be submitted by a small business, *and not USC*. Thus, SBIR/STTR Planning Award applications are expected to include an explicit partnership between one or more USC faculty and an eligible small business. This could be a faculty spin-off or start-up company, or an existing small business with whom the USC faculty has or wishes to develop a relationship. Use of funding under this program to support USC faculty as they spin-off or start-up a new company is strongly encouraged. USC faculty do not have to certify eligibility of their small business until the time of award, and most Federal agencies allow submission of an application prior to establishing the business that will receive the award.

Multiple federal funding agencies support small businesses through SBIR/STTR programs, with the goal of developing promising technologies and products that can be commercialized and aligned with their agency mission. Federal agencies with extramural research budgets over \$100 million are required to set-aside 3.2% of their extramural research budget to the SBIR program, and those with extramural research budgets over \$1 billion are required to set aside an additional 0.45% to the STTR program.

Funds from an SBIR/STTR Planning Award can be used for a broad range of research or other activities that will enhance the success of the small business in submitting a SBIR/STTR application to a federal agency. For an SBIR submission, it is expected that the proposal includes one or more USC faculty and potentially a USC subaward. In an SBIR project, the PI must be primarily employed at the proposing small business. For an STTR submission, it is expected that proposal may include a larger USC subaward, and a focus will include the transfer of technology from USC to the small business and ultimately to the marketplace. This scenario may include situations where the innovation belongs to the small business but the firm desires to include important USC resources in the technology's development. The STTR PI could be primarily employed at either USC or the small business.

This award is expected to provide support a broad set of activities that will promote the future submission of a proposal to a Federal agency SBIR or STTR funding program. Such activities include research & development, planning, and proposal writing.

## **ROLE OF USC FACULTY**

Only a small business can submit SBIR/STTR proposals. While USC cannot submit an SBIR or STTR proposal, a USC faculty member who is PI of a proposal funded under this program is required to participate in the SBIR or STTR application submitted by the small business. A USC faculty is required to serve in one of the following roles:

## SBIR

- PI on a USC subcontract
- Consultant

## STTR

- PI on the STTR, on behalf of the small business
- PI on a USC subcontract
- Consultant

Note that the PI may not serve as an SBIR PI, and may not serve as both the STTR PI and the USC subcontract PI on an STTR proposal. For further guidance, refer to USC's guidelines for faculty participation in an SBIR or STTR, please contact Robyn Hejmej ([robyn@usc.edu](mailto:robyn@usc.edu)) Research Strategy & Development (RSD).

## **TOPICS**

Topics of relevance to this Request for Proposals include any that are of interest to a federal agency with an SBIR/STTR program to which the applicant and a partnering small business plan on submitting a proposal. Federal agencies that support a SBIR and/or STTR program include but are not limited to the Department of Defense (DoD), National Science Foundation (NSF), National Institutes of Health (NIH), Department of Transportation (DOT), Department of Education (DOE), Department of Agriculture (DOA), Department of Homeland Security (DHS), Department of Energy (DOE), Centers for Disease Control & Prevention (CDC), Food & Drug Administration (FDA), and National Aeronautics and Space Administration (NASA).

## **HEILMEIER CATECHISM: MANAGING INNOVATION**

Our selection process for determining what projects to fund under this program will operate on the principle that generating big rewards requires taking big risks. In order to determine what risks are worth taking, the Defense Advanced Research Projects Agency (DARPA) utilizes questions developed by former DARPA director George Heilmeier. Known as the "[Heilmeier Catechism](#)," these questions help funding agencies think through and evaluate proposed research programs. Applicants to the SBIR/STTR Planning Award are required to address these questions in their proposal (see Proposal Requirements below):

- What are you trying to do? Articulate your objectives using absolutely no jargon.
- How is it done today, and what are the limits of current practice?
- What is new in your approach and why do you think it will be successful?
- Who cares? If you are successful, what difference will it make?
- What are the risks?
- How much will it cost? Describe the expected level of funding required for each stage along your commercialization path.
- How long will it take?
- What are the mid-term and final "exams" to check for success? What are the "go-no/go" criteria for accomplishing your goals?

## **FUNDING TARGETS**

Applicants who submit a proposal to the SBIR/STTR Planning Award program are required to identify a Funding Target, i.e., an SBIR or STTR program of a federal agency. Examples include, but are not limited to the following:

- [National Institutes of Health \(NIH\) PHS 2022-2 Omnibus Solicitation of the NIH and CDC for Small Business Innovation Research Grant Applications](#)
- [Defense SBIR/STTR Innovation Portal](#)
- [National Science Foundation \(NSF\) SBIR/STTR Program](#)
- [Department of Energy \(DOE\) SBIR/STTR Program](#)
- [DOT's Small Business Innovation Research Program](#)

- [SBIR/STTR Programs at the U.S. Department of Agriculture](#)
- [DHS Small Business Innovation Research Program](#)
- [NASA SBIR & STTR Program](#)

## RETURN ON INVESTMENT

It is expected that proposals funded under the SBIR/STTR Planning Award program will yield a return on investment of at least 10x. Calculation of ROI may include:

- USC subcontract funding under a SBIR or STTR application (e.g., Phase I, Phase II, Fast-Track) submitted to a Federal funding agency;
- Equity in the small business or future revenue from the commercial licensing of USC intellectual property (IP) to the small business.

Note that a university subcontract is allowed for an SBIR proposal and required for an STTR proposal. Applicants are encouraged to work with the small business to include USC as a research institution partner on a SBIR or STTR proposal. However, funds under this program may be used to support the submission of a SBIR or STTR proposal in which USC is not a research institution partner. In such a circumstance, it is expected that USC will have equity in the small business or that USC IP will be licensed to the small business.

## RESOURCES FOR SUBMITTING GRANT PROPOSALS

Applicants selected for funding are required to contact Research Strategy & Development (RSD), a Research & Innovation suboffice dedicated to supporting faculty in the preparation of competitive applications to federal funding agencies. RSD has considerable experience in generating and submitting proposals to federal agencies. RSD can provide support services to applicants, including science writing, budget preparation, and supporting documentation collection. Specific support provided is contingent on RSD workload and prior commitments. Applicants should contact RSD by sending an email to [robbyngil@usc.edu](mailto:robbyngil@usc.edu).

## RESOURCES FOR PROMOTING INNOVATION

Applicants selected for funding are required to contact USC Stevens Center for Innovation (USC Stevens). USC Stevens is the university's technology licensing office, responsible for the translation of USC research into products for public benefit through licenses, collaborations, and the promotion of entrepreneurship and innovation. USC Stevens staff can provide critical guidance related to the invention disclosure and technology licensing processes, as well as an overview of USC's policies related to intellectual property, researcher IP rights, and responsibilities, amongst other topics. Specific support provided may include organized events through Research and Innovation's Center for Excellence in Research, and is contingent on USC Stevens workload and prior commitments. Applicants should contact USC Stevens by sending an email to [stvinfo@usc.edu](mailto:stvinfo@usc.edu).

## SMALL BUSINESS ELIGIBILITY

Applications for the SBIR/STTR Planning Award funding are expected to include a partnership with a small business that is eligible to submit a subsequent application to a federal agency SBIR/STTR program. USC faculty may be included on the SBIR and STTR application. USC may be a potential subcontractor to the small businesses but *may not* apply as the applicant for an SBIR or STTR application.

While this program is open to USC faculty in partnership with a small business, only small business concerns that meet specific criteria are eligible to submit applications to SBIR and STTR solicitations. SBIR/STTR program eligibility requirements are in place to ensure that the funds go only to small, independent U.S. businesses. It is very important that the small business specified on an application for a SBIR/STTR Planning Award meet all eligibility criteria required for a small business to apply to a federal agency SBIR or STTR program. **See the Small Business Administration's (SBA) Eligibility Guide for more detailed information.** The regulations include restrictions about: (1) the type of firm; (2) its ownership structure; and

(3) the firm's size in terms of the number of employees. Specifically, a small business concern is one that, at the time of award of Phase I and Phase II, meets all of the below criteria, as well as the Phase I to Phase II Transition Benchmark Rate:

- ✓ Is organized for profit, with a place of business located in the United States, which operates primarily within the United States, or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials, or labor;
- ✓ Is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust, or cooperative, except where the form is a joint venture, there must be less than 50 percent participation by foreign business entities in the joint venture;
- ✓ Is more than 50% directly owned and controlled by one or more individuals who are citizens or permanent resident aliens of the United States, other business concerns (each of which is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States, an Indian tribe, Alaska Native Corporation (ANC) or Native Hawaiian Organization (NHO) (or a wholly-owned business entity of such tribe, ANC or NHO), or any combination of these; OR
- ✓ Is more than 50% owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these (SBIRs only). No single venture capital operating company, hedge fund, or private equity firm may own more than 50% of the concern unless that single venture capital operating company, hedge fund, or private equity firm qualifies as a small business concern that is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States; OR
- ✓ Is a joint venture in which each entity to the joint venture must meet the requirements set forth in paragraph 3 (i) or 3 (ii) of this section. A joint venture that includes one or more concerns that meet the requirements of paragraph (ii) of this section must comply with § 121.705(b) concerning registration and proposal requirements.
- ✓ Has, including its affiliates, not more than 500 employees.

## PROPOSAL REQUIREMENTS

This award is expected to provide support a broad set of activities that will promote the future submission of a proposal to a Federal agency SBIR or STTR funding program. Such activities include research & development, planning, and proposal writing.

Applicants must carefully follow instructions. Information uploaded beyond what is requested will not be included in the proposal package provided to reviewers; proposal documents must be converted to PDFs prior to uploading to the application portal.

- a) **Award Program:** Specify the program to which the small business will be applying to (SBIR or STTR).
- b) **Brief Description:** (not to exceed 60 words): Provide a succinct description of the proposed work.
- c) **Abstract:** (not to exceed 20 lines of text): Provide a stand-alone succinct description.
- d) **Program Plan:** (not to exceed 5 pages): Page limits are inclusive of figures and tables and include 1" margins of single-spaced text in 11-point standard font (Arial, Times New Roman, Calibri). The following headers should be included:
  - a. **Significance:** Explain the importance of the problem or critical barrier to progress that the proposed project addresses; describe the strengths and weaknesses in the rigor of the prior

research that serves as the key support of the proposed project; explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields. Provide a brief background and the specific aims of the project. Explain the project's specific innovations and significance.

- b. *Scientific Expertise*: Identify a USC PI (or Co-PIs) and any USC Co-Is. Also identify a collaborating scientist at a partnering small business. Proposals should include a detailed description of the proposal team, including a discussion of each team member's past and current research that is relevant to this effort. Discuss why the proposal team would be successful in pursuing this opportunity, and how the research expertise of the PI/Co-PIs and any Co-Is will be integrated through the proposed project.
  - c. *Innovation*: Describe how the application challenges and seeks to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions. Present concepts, approaches or methodologies, instrumentation, or interventions that are novel to one field of research or novel in a broad sense. Describe whether a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions are proposed.
  - d. *Approach*: Present the technical approach that will be followed in the project, including any aspects of experimental design. Describe the overall strategy, methodology, and analyses to be used to accomplish the aims of the project; describe plans to address weaknesses in the rigor of the prior research; describe the experimental design and methods proposed; include how data will be collected, analyzed, and interpreted. Also describe how the proposed project can follow a path to commercialization.
  - e. *Outcomes*: Describe the anticipated outcomes of the project and how the project results will be disseminated. Provide a clear timeline table and specific milestones to be achieved. Describe future plans to extend the proposed research through external funding. Also, describe the timeline and approach for taking the proposed research into translation.
- e) ***Small Business Partnership***: (not to exceed 1 page): Describe a small business partner for the effort and include one or more scientific collaborators from the company. Please note that a company founded by the applicant is a suitable partner, as long as it meets the SBA definition of a small business as defined on the SBA [website](#) and in the [SBA Eligibility Guide](#).
  - f) ***Eligibility for SBIR/STTR funding***: (not to exceed 1 page): Describe in detail how the small business partner will be eligible to submit a proposal to a federal SBIR/STTR program, and how the small business partner meets the SBA definition of a small business as defined on the SBA [website](#) and in the [SBA Eligibility Guide](#).
  - g) ***Heilmeier Catechism Questions*** (not to exceed 2 pages): Address the 8 questions described above under **HEILMEIER CATECHISM: MANAGING INNOVATION**.
  - h) ***DARPA-Style Synopsis***: Utilize the template included in the Appendix to provide a technical description, technical advantages, anticipated benefits and applications, business model, and work to date. Click [here](#) to download PowerPoint template (choose "File -> Download" at top left of screen).
  - i) ***Return on Investment (ROI) Plan***: Present a plan that demonstrates ROI at least 10x the funding received under this program. For this plan, calculation of ROI may include: USC subcontract funding under a SBIR or STTR application (e.g., Phase I, Phase II, Fast-Track) submitted to a Federal funding agency; or equity in the small business or future revenue from the commercial licensing of USC intellectual property (IP) to the small business.

- j) **Federal Funding Target:** Identify a federal agency Funding Target (including URL), e.g., Phase I, Phase II, or Fast-Track SBIR/STTR program.
- k) **Grant Submission Commitment:** The proposal must include a statement in which the applicant commits to working with a small business to submit a proposal to the Federal funding agency opportunity identified as a Funding Target. The PI agrees to have a role on this proposal as described above under ROLE OF USC FACULTY.
- l) **Innovation Ecosystem Commitment:** The Office of Research & Innovation (OORI) is committed to establishing a thriving innovation ecosystem at USC that will build collaborations between USC researchers and venture capital firms, accelerators, incubators, small and large businesses, and foundations. OORI is working closely with Research Initiatives in USC University Advancement to develop these partnerships. The proposal must include a statement in which the applicant commits to contacting Research Initiatives in University Advancement at [hpourman@usc.edu](mailto:hpourman@usc.edu) to discuss the potential for obtaining funding for the small business from venture capital firms, accelerators, incubators, small and large businesses, and foundations that are part of USC's developing innovation ecosystem.
- m) **Commercialization Potential:** (not to exceed 2 pages): Describe the current state of the market as well as the commercialization, licensing and IP potential of the proposed technology or method. For the small business with whom you plan to partner with now or in the future, include a description of the company, their success at achieving SBIR/STTR funding from a federal agency, and their success at commercializing products comparable to what is expected to be produced from the proposed program. Contact RSD for a list of relevant small businesses doing work on the products or technologies in which you are interested and who have been successful in achieving NIH SBIR/STTR funding by sending an email to [robyngil@usc.edu](mailto:robyngil@usc.edu).
- n) **Budget and Budget Justification:** (not to exceed 2 pages): Specify a project start and end date. Utilize standard budget categories, only including the allowable budget cost categories as detailed in the **Grant Conditions** section.
- o) **Current Funding:** List all sources of internal and external support awarded during the past five years, current or pending, for the PI/Co-PIs and Co-Is. For each source, specify who on this proposal was involved, their role on the project, title of the award, period, award amount, and sponsor (including subagency).
- p) **Letter(s) of Support:** Provide a letter(s) of support from the small business partner committing to submit a proposal to the SBIR or STTR opportunity identified as the Funding Target(s) and from applicable individual(s); i.e., School/Department heads.
- q) **Scientific References:** This includes citations listed in the narrative.
- r) **Curriculum Vitae** (not to exceed 5 pages per PI/Co-PI/Co-I): Applicants may use any standardized CV format (e.g., NIH Biographical Sketch, NSF Biographical Sketch, etc.).

## ELIGIBILITY

All tenured, tenure track, and Research, Teaching, Practice, and Clinical (RTPC) faculty (with the exception of lecturers, adjunct, and part-time faculty) may serve as Principal Investigators on [Sponsored Research Projects](#) at USC. Retired faculty may be called back and asked to serve as Principal Investigators as described in Chapter 10 of the [Faculty Handbook](#). Voluntary faculty may not serve as Principal Investigators. Eligibility requirements of our internal research programs are the same as those for being a PI on an external sponsored research project. Applications should also specifically describe the involvement of other faculty or key personnel who have agreed to participate in the project.

The following employee types may serve as Principal Investigators if a specific waiver is granted upon recommendation by the appropriate department chair(s), appropriate dean(s), and the Senior Vice President of Research and Innovation:

- Part-time faculty
- Certain staff positions, if eligible, including Research Scientists, Senior Research Associates, and Research Associates
- Postdoctoral Research Associates and Postdoctoral Teaching Associates

Postdoctoral Research Associates and Postdoctoral Teaching Associates, as defined by USC's Postdoctoral Scholars Policy, can also serve as co-principal investigators on sponsored projects without a waiver. To review the Postdoctoral Scholars Policy, please visit <https://policy.usc.edu/postdoctoral-scholars/>.

## GRANT CONDITIONS

OORI's awards and grant programs are administered by the Research Initiatives and Infrastructure (RII) office.

- If a faculty has an industry relationship, an approved management plan must be in place prior to receipt of award (<https://disclose.usc.edu>). Teams that will form a startup should anticipate submitting a conflict of interest disclosure. Questions regarding conflict of interest and disclosures can be directed to Ben Bell in the Office of Compliance ([benjamab@usc.edu](mailto:benjamab@usc.edu)).
- At the time of being notified by RII that an award will be made and as a condition of funding, awardees will provide to RII the name, title, and email address of a USC senior business official who will establish an internal funding account in which RII funds for the award will be transferred. The account must be unique to this award with no additional funds added.
- Within one month of being notified by RII that an award will be made and as a condition of funding, awardees will provide RII with an account number and enable view access for the account, such that RII staff will be able to view the account balance. If this information is not provided to RII within this timeframe, RII may elect to rescind the award and use the funds to make an award to another applicant.
- Awardees commit to work with a small business to submit in the future an SBIR or STTR application to a Federal funding agency. The PI agrees to have a role on this proposal as described above under ROLE OF USC FACULTY.
- Applicants are encouraged to work with the small business to include USC as a research institution partner on a SBIR or STTR proposal. However, funds under this program may be used to support the submission of a SBIR or STTR proposal in which USC is not a research institution partner. In such a circumstance, it is expected that USC will have equity in the small business or that USC IP will be licensed to the small business.
- Awardees commit to contacting Research Strategy & Development (RSD) to explore obtaining support services for external agency grant submissions, including science writing, budget preparation, and supporting documentation collection. Awardees contact RSD by sending an email to [robyngil@usc.edu](mailto:robyngil@usc.edu).
- Awardees commit to contacting USC Stevens Center for Innovation to obtain guidance related to the invention disclosure and technology licensing processes, as well as an overview of USC's policies related to intellectual property, researcher IP rights and responsibilities, amongst other topics. Awardees contact USC Stevens by sending an email to [stvinfo@usc.edu](mailto:stvinfo@usc.edu).
- Failure to spend at least half of the awarded funds within six months of the project start date may result in the suspension of the remaining funds.
- Awardees commit to attend an in-person ceremony with Research & Innovation leadership.
- Awards include fringe benefits but are not assessed Facilities & Administration Costs (formerly



known as Indirect Costs).

- This award will not provide financial support beyond the duration of the award and does not carry the opportunity for renewal.
- Funds not spent by the end of the project period will be returned to USC Research and Innovation.
- As a condition of the award, awardees will attend an in-person ceremony with Research & Innovation leadership (date TBD).
- Awardees have discretion in the budgeting and re-budgeting of funds to meet their research needs within the guidelines of the fund and the terms of the proposal. However, funds may not be transferred to another project or other researchers or institutions.
- All USC rules, concerning conflict of interest, human subject research, animal research, etc., apply to projects funded under this program. Funding will only be provided following confirmation that all pertinent reviews have been submitted for approval by relevant committees (e.g., IRB, IACUC).
- Allowable budget expenses:
  - Faculty salary & fringe
  - Postdocs/graduate/undergraduate student RAs/administrative personnel salary & fringe, excluding funding student tuition and other student-related fees.
  - Travel
  - Materials & supplies
  - Other
  - Consultant costs
  - Subawards
- Non-allowable budget expenses:
  - Equipment

## SCIENTIFIC REVIEW CRITERIA

Applications will be reviewed by a standing committee of researchers with expertise in SBIR/STTR programs. The committee will be convened yearly to review applications submitted to this program. Review criteria will be based on the following:

1. *Commercial potential*: The probability that an application ultimately will result in a commercial product. The viability of the partnership between the USC PI / Co-PIs and the small business;
2. *Scientific Approach*: Rigor and technical merit;
3. *Significance/Broader Impacts*: Impact on knowledge, practice, outcomes, or policy; societal benefit; contribution to scientific inquiry and discovery;
4. *Feasibility*: Ability of the project to be completed within the designated project period;
5. *Potential of Future Funding and ROI*: A Federal agency Funding Target has been specified, and this is an appropriate and realistic Funding Target based on the PI/Co-PI/Co-I's expertise and funding history with the specific subagency sponsoring the Funding Target. A convincing plan has been described that demonstrates ROI at least 10x the funding received under this program;
6. *Budget*: Cost-effectiveness and availability of any support/match funding from a USC school or program. Reviewers will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed activities.

## PROGRAMMATIC REVIEW

RII will incorporate aspects of existing policies and procedures regarding funding decisions that are utilized by major federal funding agencies like NSF and NIH, i.e., proposals will be subject to scientific peer review and programmatic review. Programmatic review assures maximum efficiency for funding awards and strategic alignment with this program's and the university's strategic research priorities. While financial

support may be obtained from any external sponsor, proposals that target federal funding agencies are of greatest interest. The probability that an application will result in a commercial product will be strongly considered in review. Ultimate funding decisions will be made based on both scientific peer and programmatic review.

## **DIVERSITY, EQUITY, AND INCLUSION**

USC's Research & Innovation and RII offices strongly support a culture of diversity, equity, and inclusion. Proposals should incorporate meaningful DEI practices across the project team and proposed activities. This will be a consideration during the programmatic review.

## **REPORTING AND ACKNOWLEDGEMENT OF SUPPORT**

Awardees will be required to submit a one-page progress report, which will be due six months into the project period and at the point of project period completion. This report must detail scientific, financial, and research performance over the preceding months. Any and all publications arising from work supported under this program must acknowledge the *USC Research & Innovation SBIR/STTR Planning Award*.

## **PROPOSAL SUBMISSION**

Submit your proposal application utilizing the RII application submission and reporting portal. Go to <https://rii.usc.edu/funding/oor-portal/> to log in or create an account using your USC email address.

## **FURTHER INFORMATION AND PROGRAM CONTACT INFORMATION**

We encourage inquiries to RII concerning this funding opportunity and welcome the opportunity to answer questions from potential applicants about allowable expenses and all other issues.

For additional information or inquiries, please send an email to [rii@usc.edu](mailto:rii@usc.edu) with "SBIR/STTR Planning Award" in the subject line.

For additional information on SBIR/STTR programs and their requirements, please refer to *Appendix A: USC SBIR/STTR Fact Sheet*.

## **APPLICATION CHECKLIST**

- |  |  |
|--|--|
| <input type="checkbox"/> Award Program                     | <input type="checkbox"/> DARPA-Style Synopsis            |
| <input type="checkbox"/> Brief Description                 | <input type="checkbox"/> Return on Investment            |
| <input type="checkbox"/> Abstract                          | <input type="checkbox"/> Innovation Ecosystem Commitment |
| <input type="checkbox"/> Program Plan                      | <input type="checkbox"/> Commercialization Potential     |
| <input type="checkbox"/> Significance                      | <input type="checkbox"/> Budget and Budget Justification |
| <input type="checkbox"/> Scientific Expertise              | <input type="checkbox"/> Current Funding                 |
| <input type="checkbox"/> Innovation                        | <input type="checkbox"/> Letter(s) of Support            |
| <input type="checkbox"/> Approach                          | <input type="checkbox"/> Scientific References           |
| <input type="checkbox"/> Outcomes                          | <input type="checkbox"/> Curriculum Vitae                |
| <input type="checkbox"/> Small Business Partnership        |  |
| <input type="checkbox"/> Eligibility for SBIR/STTR funding |  |
| <input type="checkbox"/> Heilmeier Catechism Questions     |  |

## FREQUENTLY ASKED QUESTIONS

### **Q1: How much funding can I request?**

A1: Program cap is listed on page 1 of this RFP. You should request an amount you think is scientifically appropriate and justified. The requested budget is subject to both scientific peer and programmatic review, and any OORI award made could be for a lesser amount than requested.

### **Q2: If my proposal is selected for funding, will I automatically receive my requested amount?**

A2: Not necessarily. The budget is subject to scientific peer and programmatic review, and a recommended award may be for less than what was requested.

### **Q3: I am dissatisfied with my review. Can I rebut the review and get a new one?**

A3: RII goes to considerable effort to ensure that the scientific peer review is fair and impartial. Constituting review committees and organizing reviews takes considerable time and effort. RII does not have the resources or a mechanism to re-review proposals. Thus, the results of the scientific peer review are final.

### **Q4: Why does my team need to have funding from a federal agency?**

A4: Our requirement helps to prepare awardees for submitting a competitive application to a federal agency SBIR/STTR program.

### **Q5: Can I work with faculty across multiple USC schools?**

A5: Absolutely. We strongly encourage applicants to work with colleagues across multiple USC schools.

### **Q6: Why do I need to document a return on investment?**

A6: Much like federal funding agencies, OORI has a budget that needs to be re-authorized yearly. The university has many competing interests, and OORI needs to make a compelling case every year to receive funding. The likelihood of receiving funds – and increasing OORI funding – is contingent upon demonstration that the activities we support offer a significant return on investment and generate creative and research products that have a significant societal impact. The greater the return on investment that your project offers, the more you help us in advocating for our research funding allocation.

### **Q7: If I am successful and get an SBIR/STTR Planning Award in July or August, I may not have enough time to apply to upcoming federal funding deadlines, i.e., the September NIH SBIR deadline.**

A7: The program deadlines are not matched to federal funding program deadlines in a given calendar year. You certainly can apply to this program in advance of federal funding deadlines, for submission to the next year's deadlines. For example, NIH's SBIR deadlines abide by their standard submission dates of January, April, and September—if you are unable to apply to the September deadline, the January or April deadlines are options, should you choose an NIH opportunity as a funding target.

### **Q8: I know that funding under this program is meant to support the subsequent submission of an SBIR or STTR proposal to a Federal agency. How can I (and USC) be involved?**

A8: A requirement of this program is the involvement of the PI with a subsequent SBIR or STTR proposal. We strongly encourage submission of the SBIR or STTR proposal by a small business that is a faculty spin-off or start-up company. While SBIR and STTR proposals must be submitted by the small business, USC may be included as a subcontracted research partner. A future SBIR or STTR proposal may be submitted in which USC is not a research partner; however, in such a circumstance, it is expected that USC will have equity in the small business or that USC IP will be licensed to the small business. An individual full-time USC faculty can be a consultant on an SBIR or STTR proposal, PI of the proposal representing the small business (STTR only), or PI of the USC subaward (SBIR or STTR). Faculty involvement must be consistent with USC conflict of interest policies. Also, the faculty cannot be both PI of the STTR proposal and PI of the USC subaward on the STTR proposal.

### **Q9: I am a USC faculty based at Children's Hospital Los Angeles (CHLA), and have founded a company that I want to include as a partner small business. Am I eligible to apply to this program?**

A9: The intellectual property (IP) of USC faculty based at CHLA that is created solely while the faculty is on CHLA time and solely using CHLA resources (including premises) belongs to CHLA. Any transfer of CHLA IP rights to USC requires an assignment by CHLA to USC and presumably some negotiated consideration. Joint use of CHLA and USC resources results in joint ownership and is subject to an Inter-institutional Agreement on the management of IP.

For a small business to be an eligible partner under this program, it is expected that USC IP will be licensed to the small business or that USC has equity in the small business. If IP owned wholly by CHLA is licensed to a company proposed as a small business partner, and USC does not have equity in the company, the company is not eligible as a small business partner. If the IP is wholly or in part owned by USC, or USC has equity in the company, the company is eligible as a small business partner.

**Q10: Can the company we partner with use funds from the award to pay fees to license USC IP?**

A10: Yes. RII strongly encourages PIs funded under this program to partner with companies that license USC IP.

**Q11: Can the company we partner with use funds from the award to pay patent maintenance costs?**

A11: Yes. Yes. RII strongly encourages PIs funded under this program to partner with companies that license USC IP, and it is a legitimate expense to use funds to help the company pay for patent costs associated with USC IP.

**Q12: When should we file a provisional application?**

A12: In general, your invention should be protected before any public disclosure. If you do not have a disclosure planned, it may be advantageous to gather as much data as possible to strengthen the application prior to filing. Your USC Stevens Licensing Associate will have the best advice for your invention.

## **APPENDIX A: USC SBIR/STTR FACT SHEET**

### **Guidelines for Faculty Participation in SBIR and STTR**

The University of Southern California (“USC”) is committed to the enhancement and support of faculty efforts to translate the results of their research to benefit the community and enhance the public good. The federally funded Small Business Innovation Research (“SBIR”) and Small Business Technology Transfer (“STTR”) programs encourage domestic small business concerns (“SBC”) to engage in research and development that has the potential for commercialization. Through a competitive awards-based program, grants are made directly to the SBC to support the financing of cutting-edge technologies. Since the success rate for these grants is significantly higher than individual PI research proposals, they would not only result in the support of faculty research but can lead to the successful launch of a commercial entity. SBCs collaborate with a research institution, such as USC, in Phase I and Phase II through the issuance of a subaward between the SBC and the research institution. Due to the unique potential for conflicts of interest and conflicts of commitments/use of resources, the following guidelines have been developed to guide faculty as they prepare SBIR and STTR proposals and manage grant sub-awards.

### ***Background***

Several federal agencies, including the National Science Foundation, the Department of Defense, and the National Institutes of Health, sponsor SBIR and STTR programs, intended to stimulate technological innovation, increase private-sector commercialization of innovations derived from federal research funding, and foster technology transfer through cooperative research and development between small businesses and research institutions. Each federal agency that sponsors SBIR and STTR programs has regulations that govern their programs.

Both the SBIR program and the STTR program are structured in phases. Phase I proposals are intended to establish the technical merit, feasibility, and commercial potential of the proposed R & D efforts and to determine the quality of performance of the SBC prior to providing further support in Phase II. The objective of Phase II proposals is to continue the R & D efforts initiated in Phase I. Funding is based on the results achieved in Phase I. Only Phase I awardees are eligible for a Phase II award. Projects that progress to Phase III projects are not funded by the SBIR/STTR programs. Typically, in Phase III, the SBC pursues commercialization of the work started under the Phase I and II programs.

### ***SBIR Program Requirements***

1. For both Phase I and Phase II proposals, the Principal Investigator (“PI”) must have Primary Employment, as hereafter defined, with the SBC at the time of award and during the conduct of the proposed project (unless a waiver is granted by the funding agency). “**Primary Employment**” means that more than 50% of the PI’s time is spent as an employee of the SBC. This precludes full-time employment with another organization; therefore, a full-time USC faculty member cannot be the PI for an SBIR proposal.
2. The SBIR program encourages, but does not require, the SBC to collaborate with a research institution.
3. For Phase I proposals, a minimum of 67% of the research or analytical effort must be performed by the SBC. For Phase II proposals, a minimum of 50% of the research or analytical effort must be performed by the SBC. Deviations from these requirements may occur but must be approved in writing by the grant/contract officer.
4. The SBC must have the resources necessary to perform the work (e.g., facilities, equipment, personnel etc.).

### ***STTR Program Requirements***

1. The SBC must have in place a formal collaboration with a research institution (e.g., USC).
2. Not less than 40% of the research and development (“R & D”) work must be performed by the SBC, and not less than 30% of the R & D work must be performed by the collaborating research institution.
3. The Primary Employment of the Principal Investigator may be with either the SBC or the research institution.

4. The SBC PI (i.e., the PI submitting the proposal) must have a formal appointment with or commitment to the SBC.
5. The SBC and its partnering research institution are required to establish an intellectual property (“IP”) agreement detailing the allocation of IP rights and rights to carry out follow-up research, development, or commercialization activities.
6. The SBC must have the resources necessary to perform the work (e.g., facilities, equipment, personnel etc.).

### ***Requirements Related to Participation in SBIR/STTR Programs***

Entrepreneurial activity by USC faculty is encouraged; however, involvement with SBCs and participation in SBIR and STTR programs can create financial conflicts as well as conflicts of commitment with their USC obligations. To assist faculty members to navigate these relationships and to ensure USC’s compliance with all federal, state and USC policies, the following are required.

1. The PI for the SBC and the PI for the subcontract to USC must be different individuals.
2. If a USC faculty member (or his/her/their spouse or dependent child) has a financial interest (including, but not limited to, an ownership interest, stock options or a proprietary interest), a leadership position in, or is employed by an SBC, the faculty member may serve as the PI on the USC subcontract from that SBC only after developing and adhering to a management plan that addresses his/her/their conflicts of interest, including the rationale for choice of PI. The faculty member, and any other USC employees with a financial interest in the SBC, must disclose their financial interest(s) in diSClose and receive approval from the Conflict of Interest Review Committee (“CIRC”) prior to award.
3. Proposals to conduct research at USC under an SBIR or STTR subcontract must be reviewed and approved by the appropriate Department Chair and/or Dean to ensure that the proposed project has scientific merit, constitutes a good use of USC research space and that the project will not compromise the USC faculty member’s academic responsibilities.
4. USC must receive a copy of the SBC’s proposal and notice of award prior to accepting a subcontract from an SBC connected to a USC faculty member.
5. A faculty member, or any other USC employee, with a financial interest in an SBC should have an approved Conflict of Interest Management Plan. The Plan stipulates the terms to which the faculty member agrees to abide by when conducting his/her/their USC responsibilities as they relate to the SBC.
6. The SBC grantee must have primary functioning space that it owns or controls. If use of USC facilities by the SBC is anticipated, such use must be approved by all responsible administrators and covered by a Facility Use Agreement (Lease or License) or other contractual agreement.

### ***USC Principles for participating in SBIR and STTR Grants***

**Principal Investigator Role:** Faculty Serving as PI for BOTH the SBC and for USC: In general, a USC faculty may not serve as both the SBC principal investigator and the USC principal investigator on the subaward from a faculty-owned company. However, in rare cases, there may be compelling circumstances that warrant an exception. Such compelling circumstances must first be reviewed and approved by the CIRC and if approved, then approved by the Senior Vice President of Research & Innovation.

Faculty serving as PI for either SBC or for USC: A USC faculty may serve as the PI for either the SBC or USC involving a faculty owned company in accordance with USC’s conflict of interest (“COI”) policies.

### ***Conflicts of Interest Review***

The conflict of interest process is covered by USC policy, that being USC’s Conflict of Interest in Research Policy—please refer to the following link for additional details: <https://policy.usc.edu/conflict-of-interest-in-research/>.

### ***Use of USC Resources***

Core Labs and Recharge Facilities: SBC’s may use a USC core lab or recharge facility for the SBC’s portion

of the work provided that the SBC is charged the same rate as other non-USC entities and under appropriate agreements.

**Laboratories & Resources:** In the event a faculty proposes to use resources (i.e., equipment, space, employee services) from a USC laboratory (or other facility that is not a core lab or recharge facility) to complete the SBC's portion of the work on an SBIR/STTR, approval from the Department Chair and Senior Vice President of Research & Innovation is required and will only be permitted under appropriate agreements (e.g., a facility use agreement, service agreement, etc.). When evaluating whether to approve such a request, Department Chairs and the Senior Vice President of Research & Innovation will consider the following factors: (i) whether the request diverts resources to the SBC at the expense of the USC and/or other faculty, (ii) whether the work could adversely affect the ability of the USC staff to perform their USC-related work, and (iii) the capacity of the resource being requested and whether granting use to the SBC would limit use by other USC faculty. Approval to use USC laboratories and resources is more likely to be granted in the event the faculty has a documented plan to move the work out of USC space and into SBC-owned space during any phase II SBIR/STTR. To utilize USC laboratories and resources, the SBC must pay for such resources or services, and such payment should be documented in appropriate agreements (e.g., a facility use agreement or service agreement).

**Support Staff:** Faculty may engage USC support staff in support of the SBC in a limited capacity and only with the Department Chair's prior approval. For example, the faculty may engage support staff in scheduling the faculty member's time and reserving meeting rooms. Support staff should not be asked to make arrangements or handle reimbursements for SBC travel or hospitality. Developing a budget and proposal on behalf of the SBC (which excludes a budget proposal on behalf of USC as a subcontractor) would not be considered use of support staff in a "limited capacity." When evaluating whether to approve a request to use USC support staff, the Department Chair should ensure use of the USC employees is in a limited capacity and that such use is documented in an appropriate agreement (e.g., a service agreement).

#### ***Use of Students and Post Docs in an SBIR/STTR Award***

Graduate and undergraduate students are allowed to perform work for either USC or the SBC in an SBIR/STTR award where a USC faculty member has a financial interest in the SBC and the faculty member is the student's mentor. CRC approval is required with an independent monitor. This is covered in USC's COI Research Policy. Postdoctoral Research Scholars ("**PRS**") or Postdoctoral Research Associates ("**PRA**") may be permitted to work on USC's portion of the grant under the subaward provided that (i) full disclosure is provided in writing by the faculty regarding his/her/their interest in the SBC, (ii) the Department Chair provides approval, and (iii) the postdoc is provided a safe haven. For clarity, postdocs working on USC's portion of the grant under the subcontract would not be in a PI capacity. Postdocs may be permitted to serve as the PI for an SBC, or work on the SBC's portion of the grant, however, faculty may not require that postdocs work on behalf of the SBC as a condition of their continued participation in their training program. It is generally recognized that an employment opportunity with an SBC may be beneficial to the postdoc's career. In this case, the postdoc may be required to reduce or sever his/her/their USC appointment to become an employee of the SBC. The postdoc should be made aware of potential risks or consequences which may include: (i) severance of USC appointment, (ii) severance of USC employment and benefits, (iii) disruption of academic career path, and (iv) the postdoc's former position at the USC is not held and there is no guarantee of return to the USC. Postdocs working on behalf of an SBC must be informed in writing of the potential risk and consequences prior to accepting employment with the SBC.