NATIONAL SCIENCE FOUNDATION
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NSF 22-082

Dear Colleague Letter: NSF Regional Innovation Engines (NSF Engines) Program

May 3, 2022

Dear Colleagues:

With this Dear Colleague Letter (DCL), the National Science Foundation's (NSF) newly established Directorate for Technology, Innovation, and Partnerships (TIP) announces the ***NSF Regional Innovation Engines (NSF Engines) program***. This program is a bold new initiative aimed at significantly expanding our Nation's innovation capacity by investing in key areas of national interest and economic promise in every region of the United States. To accomplish this ambitious goal, the NSF Engines program will fund the development of ***Regional Innovation Engines*** that will cultivate and sustain activities in use-inspired research and development; the translation of the resulting innovations to practice through entrepreneurship, stakeholder development, and meaningful partnerships; and workforce development at all levels including experiential learning leading to researchers, practitioners, technicians, innovators, entrepreneurs, and others. This program will enhance the Nation's economic and industrial competitiveness as well as national security by fostering and catalyzing such ecosystems.

Today, the U.S. is facing global competition for talent and leadership in science, technology, engineering, and mathematics (STEM) and STEM education. To ensure the U.S. remains in the vanguard of competitiveness, and to leverage emerging technologies to tackle large-scale societal and economic challenges, it is essential that the U.S. expand domestic innovation capacity. To do so requires taking full advantage of the diverse innovation potential and talent across the *entire* Nation and investing resources to enable *all regions* of the U.S. to become flourishing innovation ecosystems of STEM-based economic growth. The NSF Engines program will therefore prioritize geographic regions that do not currently have well-established innovation ecosystems or, of particular interest, regions of the country where prospective ecosystem members exist, but where innovation activities are only loosely connected.

Each NSF Engine's technical and innovation focus must be clearly rooted in its region of

service – a geographical location within the U.S. that can range from a metropolitan area (including its adjacent rural regions) to an area spanning parts of several states. Additionally, each NSF Engine will be driven by a coalition of regional partners, comprising academic institutions, non-profits, for-profit companies, and government entities, among others. Each coalition will develop and implement a comprehensive strategic plan designed to produce a culture of innovation and diversity within the entire innovation ecosystem and will be required to demonstrate this through its leadership team, funding distribution among partners, and its activities. An NSF Engine's coalition of partners is expected to include a diversity of organizations and stakeholders that will enable the Engine to provide value to its entire region of service. For example, in the context of academic institutions, NSF Engines must engage the range of institution types in its region including those dedicated to communities under-served in STEM such as Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), and Tribal Colleges and Universities, as well as two-year colleges, community colleges, vocational and technical colleges, and others. NSF recognizes the need for capacity building and technical assistance for certain organizations to fully engage and encourages proposals to incorporate such needs within their budgets and activities.

While participating organizations in each NSF Engine must consist of and be led by organizations within the Engine's region of service, the increasingly distributed nature of society means that partners who transcend that geographical area are also appropriate. It is expected that an NSF Engine will leverage partnerships across the country to achieve its goals, in a way that complements other ongoing efforts (e.g., investments from NSF and other federal or state agencies, as well as private-sector activity). Further, mentoring from experienced organizations is strongly encouraged, and organizations operating in existing mature innovation ecosystems are welcome to join with NSF Engine proposers in other regions of service to provide such support.

Ultimately, the NSF Engines program offers a unique opportunity to usher in a significant innovation revolution by harnessing the Nation's diverse science and technology research enterprise, regional-level resources, and untapped innovation potential to accelerate advances in critical and emerging technologies, grow our economy, address societal challenges, and advance national security and competitiveness.

In contrast to many existing NSF programs that primarily focus on scientific innovation, the NSF Engines program includes a strong emphasis on meaningfully engaging the consumers of research outcomes in informing and shaping the research questions; prototyping and piloting of research-based solutions (i.e., co-design and co-creation); and translating research results to practice, entrepreneurship, and direct economic growth. The program further differentiates itself from traditional NSF approaches through the nature and types of partnerships expected; the technology-translation and workforce-development outputs that will be tracked and assessed; the level of post-award oversight; the budgets of the expected NSF Engines, which are an order of magnitude greater than traditional NSF center-scale

awards; and the duration of NSF funding to be paired with an intentional focus on long-term sustainability from day one of the award.

Several recent community workshops and activities have envisioned such an investment, including a NSF-funded workshop on a National Network of Research Institutes held in May 2021.

PROPOSAL AND AWARD INFORMATION

The NSF Engines program provides up to ten years of funding per Engine award with a maximum budget of $160 million, with the opportunity to receive up to two years of funding to support development activities prior to NSF Engine creation. The program solicits proposals corresponding to two award types, as outlined below.

- Type-1 awards are development awards that provide seed funding to enable awardees to lay the groundwork for establishing a new NSF Engine, with the goal of catalyzing an innovation ecosystem for a specific topic area. Type-1 awards are intended to allow teams to prepare for the submission of a successful Type-2 proposal. The duration of a Type-1 award is up to 24 months, with a maximum proposed budget of $1 million.
- Type-2 awards are intended to support awardees representing a geographical region of service that are primed to stand up a regional innovation ecosystem. Type-2 awards provide funding for up to 10 years, with a total maximum budget of $160 million. *Submission of a Type-1 development proposal is not required for the submission of Type-2 proposal. See the NSF Engines Broad Agency Announcement (BAA) for further details on the award types and the differences between them.*

ELIGIBILITY INFORMATION

The following organizational types are eligible to submit proposals in response to the NSF Engines program:

- U.S.-based non-profit, non-academic organizations;
- U.S.-based for-profit organizations; and
- Institutions of Higher Education (IHEs) accredited in and having a campus located in the U.S. (please note that international branch campuses of U.S. IHEs are not eligible to submit proposals under this BAA).

The following organizational types are eligible to receive NSF funds through subawards under the NSF Engines program:

- U.S.-based non-profit, non-academic organizations;
- U.S.-based for-profit organizations;
- Federally Funded Research and Development Centers;

- National laboratories;
- State, Local, and Tribal governments,limited to agencies, offices or divisions specifically dedicated to innovation, economic and/or workforce development; and
- IHEs accredited in, and having a campus located in the U.S. (please note that International Branch Campuses of U.S. IHEs are not eligible to receive funding through subawards under this BAA).

PROPOSAL DEADLINES

The NSF Engines BAA specifies timelines for both Type-1 and Type-2 proposals. Prior to submission of proposals, teams are required to submit a Concept Outline, which is **due June 30, 2022**, for both proposal types. Approval of a Concept Outline from a cognizant NSF Program Officer is required to submit a full proposal. Other program deadlines are noted in the BAA.

To access the BAA, visit the BAA website. Additionally, visit the NSF Engines program website for information about webinars, frequently asked questions, program announcements, and other program content. For any additional questions about this DCL or to submit your own questions about the NSF Engines BAA, contact the NSF Engines program team at: engines@nsf.gov.

Sincerely,

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National Science Foundation