



## Request for Concept Papers: End-User Consumer and Industrial Product Development May 20, 2024

### Background

The NSF Regional Innovation Engines program supports the development of diverse regional coalitions around the country to conduct research, train the local workforce, grow innovation ecosystems for economic and societal impact. Each Engine can potentially receive up to \$160 million over 10 years. In May 2023, the National Science Foundation (NSF) awarded a two-year, \$1 million Regional Innovation Engines planning grant to Vytal Plant Sciences Research (VPSR) to develop the Pennsylvania Industrial Hemp Engine (PAIHE). The mission of the PAIHE is to develop a robust industrial hemp ecosystem centered in Pennsylvania's I-81 Corridor built upon collaborative research and development addressing plant genetics, seed and crop production, processing, consumer and industrial product development, and manufacturing.

### Opportunity Description

On April 16, 2024, the NSF announced the opportunity for VPSR to pursue the next level of Engine funding, which is \$15 million over two years to launch the PAIHE (See NSF 24-565). NSF has encouraged VPSR to submit a proposal for this next level of funding. A preliminary proposal is due August 6 and full proposals are due February 11, 2025. Following this two-year award, VPSR would be eligible for \$45 million over three years, and then up to \$100 million over five years, potentially totaling \$160 million of NSF funding over ten years. VPSR is now preparing to submit a proposal in response to Program Solicitation NSF 24-465.

This Request for Concept Papers seeks industry and university partners for participation in the Engine proposal. This Request focuses on end-user consumer and industrial product development. Some examples of industrial hemp applications currently being explored include building materials (ceiling tiles, insulation, hempcrete, vapor barriers, flooring), disposable food service items (drinking straws, cutlery, containers), packaging materials, paper, textiles, composite materials, hemp-based bioplastics, fluid absorption systems, biofuels, energy storage devices, and others. Industry and university researchers are invited to submit R&D concept papers to be considered for co-investment in the VPSR response to NSF 24-565.

### How to Submit

Industry and university researchers are encouraged to submit R&D proposal concept papers by June 30 to participate as a partner in the VPSR Engine proposal. Submission of concept papers before the June 30 deadline is encouraged. There is no limit on the number of concept papers that an organization may submit either as lead or partner.

NSF Engine funds must be matched at a minimum one-to-one ratio with partner resources. Higher levels of co-investment are strongly encouraged. Partner contributions may include cash or in-kind contributions (facilities, equipment, human capital, datasets). NSF Engine funding will be available to partners over a two-year period with an approximate start date July 1, 2025. Collaborative proposals involving industry and university research teams are encouraged but not required. NSF Engine funds will be awarded at two investment levels:

- **R&D Programs:** Programs may range from \$250,000-\$500,000 of NSF funding over two years. Program grants will typically involve major end-user consumer and industrial product manufacturers in long-term product development R&D programs that are likely to be continued beyond the first two years under future Engine funding. Programs must demonstrate pathways to markets and substantial co-investment. Programs must include at least one major product manufacturer either as a partner or as project lead.
- **R&D Projects:** Project may range from \$50,000-\$100,000 of NSF funding. Project will typically involve small and medium size enterprise (SMEs) including minority and women owned business enterprises, partnered with a major product manufacturer or university. Project Grants are intended to support discreet, shorter term projects with deliverables to be completed within 12-24 months. Programs must demonstrate pathways to markets and substantial co-investment.

Industry and university researchers interested in submitting a concept paper should provide the following information as a one-page Word document by June 30, 2024:

- **Proposal Type:** Indicate whether a Program or Project proposal.
- **Proposal Title:** A succinct (ten-word maximum) title of the proposal
- **Name of Applicant Organization:** Name organization that will receive the funds.
- **Lead Investigator:** Name and complete contact information of the lead researcher.
- **Program or Project Synopsis:** Provide a brief description (600 word maximum) of the program or project, including a problem statement, the R&D goal and objectives, methods to be employed, and expected R&D outputs and delivery dates.
- **Partner Organizations (if applicable):** Provide a list of any partner organizations
- **Funds Requested:** Estimated dollar amount of NSF Engine funds requested.
- **Matching funds:** Estimated dollar amount of matching funds (cash or in-kind contributions) to be provided by the applicant organization and any partners

Proposals may not include proprietary or confidential information. Proposals should be submitted as a one-page, single-spaced Word document with standard margins and in font Calibri 12. Please submit proposals as an email attachment to Ms. Ariel Matz at [amatz@vpsresearch.org](mailto:amatz@vpsresearch.org) by 5:00 p.m. June 30, 2024.