

Biotechnology (BT Topic)

Proposal Due Date: **June 13, 2007**

In accord with the will of Congress and the mission of the National Science Foundation, the NSF SBIR/STTR program was established to support entrepreneurship and to enable the translation of scientific discoveries into tangible outcomes that benefit society as a whole. Within the biotechnology program area, companies and their academic partners are encouraged to submit applications focused on the development of innovative new biological products, devices, processes, and technologies. Innovative SBIR/STTR biotechnology proposals that cut across technical disciplines are also eligible, as are bioengineering proposals aimed at developing aids for persons with disabilities or developing technologies to combat bioterrorism. It should be noted that NSF will not accept proposals that are focused on the development of drugs (i.e. involving the testing of pharmaceuticals in human clinical trials or animal models), although the development of compound libraries and other sources of molecules that can be used for identification of drug leads would be acceptable. In addition to high scientific merit, the proposals must also demonstrate a strong commercialization potential. Successful applicants will outline a clear technical and business strategy that will result in the development of a commercially viable product within a timeframe reasonable for the field of endeavor.

Distinction between Biotechnology Topics and Emerging Opportunities (BioProducts) topics

Some Biotechnology and Emerging Opportunities (BioProducts) topics have similar descriptions to which a proposal could potentially be equally applicable. In cases where the innovation research addresses a topic found in both the Biotechnology and the Emerging Opportunities (BioProducts) topics, a choice must be made as to where to submit the proposal. If the innovation research addresses a market opportunity within a three to five year time horizon and has been significantly vetted with appropriate stakeholders, the proposal should be submitted to the appropriate Emerging Opportunities (BioProducts) topic. Proposals with longer-term commercialization potential or less vetting from significant stakeholders should be submitted to the appropriate Biotechnology topic. Be aware that all submissions to the SBIR/STTR program should indicate the market opportunity being addressed by the innovation whether submitted to Biotechnology or the Emerging Opportunity topics.

Following are the topics for which the NSF SBIR/STTR program is seeking proposals:

A. Genomics, Proteomics, Metabolomics and Bioinformatics

This topic includes innovations in genomics, metabolomics, proteomics and bioinformatics.

B. Biochips

This topic includes gene-expression microarrays, SNP and other genome level arrays, protein chips, and microfluidic devices and related technologies.

C. Combinatorial Chemistry and Biology

This topic includes the development of novel combinatorial libraries and methodologies for the de-convolution and accelerated identification of novel compounds or products from such libraries. It also includes the development of new methodologies to “combine” diverse biological functions to improve biosynthetic and biocatalytic processes.

D. Metabolic Engineering

This topic includes the development of strategies and methods to target and modify metabolic pathways in cells or whole organisms to enhance the production of commercially relevant products.

E. Ecological Engineering, Bioremediation and Environmental Impact Mitigation

This topic includes the development of novel methods to mitigate the adverse impact of human activities on the environment.

F. Biomass Processing

This topic covers methods to transform biomass into commercially useful constituents.

G. Industrial use of Bio-Products

This topic covers the application of biological products (such as enzymes) to industrial processes

H. Agricultural and Food Biotechnology

This topic includes applications of biotechnology to agricultural and food production processes that result in enhancement of the physical, nutritional and/or safety qualities of the end-products of such processes or improving the economic viability of the process/product. This topic also covers the development of methodologies to produce therapeutic compounds in plants and animals.

I. Aquaculture and Aquatic Biotechnology

This topic includes the development of products beneficial to human health from marine and other aquatic environments with minimal impact to such environments. Also included is the application of biotechnology to aquaculture.

J. Bioprocess Enhancement

This topic includes the application of engineering to improve the production efficiency of in vitro systems for the production of pharmaceuticals and other biologically relevant molecules.

K. Sensors and Diagnostic Instrumentation

This topic covers the development of sensors for biological products and processes, including sensors for healthcare diagnostic purposes, detection of bioterrorism agents, and detection of environmental contaminants, bacteria, viruses and toxins.

L. Imaging Technologies

This topic includes innovations in biological, bioindustrial, agricultural, and medical imaging technologies.

M. Biomaterials Development

This topic covers the development of novel biologically-based materials.

N. Tissue Engineering

This topic includes the development of novel tissue engineering technologies and methodologies for biomedical applications.

O. Advanced Prosthetics and Assistive Devices

This topic includes the development and implementation of innovations to improve assistive and prosthetic devices and/or components.

P. Aid to Persons with Disabilities

This topic focuses on the improvement of home care technologies such as mobility enhancement, manipulation ability, cognitive function, and remote patient monitoring.

Q. Drug Delivery

This topic includes the development of new methodologies and materials for enhancing the bioavailability, safety and targeting of new or existing therapeutics.

R. Manufacturing Innovation

This topic covers novel application of biotechnology to the improvement of existing product and industrial processes.

Please direct all inquiries to the SBIR/STTR Program Officers listed below for the subtopics as listed:

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