NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

NSF 16-058

Dear Colleague Letter: NSF-USDA Joint Funding Opportunity - Early Concept Grants for Exploratory Research (EAGERs) to Develop and Enable Breakthrough Technologies for Animal and Plant Phenomics and Microbiomes

March 10, 2016

Dear Colleagues:

The National Science Foundation (NSF) Biological Sciences Directorate (BIO) and the U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) have established a joint funding opportunity to support the development of transformative plant and animal phenomics, and microbiome technologies. This opportunity seeks to advance our understanding of basic biological mechanisms and principles. Insights thus gained have the potential to result in improved agricultural productivity and more efficient use of natural resources such as land, water, nitrogen, and phosphorous.

This NSF-BIO and USDA-NIFA Joint Activity is soliciting Early Concept Grants for Exploratory Research (EAGER) proposals to support development of innovative approaches for phenotyping and microbiome characterizations, as well as for elucidating the role of microbiomes in plants and animals. In part to more fully realize the potential of low-cost high throughput sequencing and genotyping technologies, this activity addresses critical gaps in tools available for characterizing plant and animal phenotypes and microbiomes. Types of projects that might be appropriate include but are not limited to:

- Technologies that increase the accuracy and throughput of existing phenotypic and microbiome data acquisition
- Extending the diversity of phenotypes that can be measured.
- Automation or mechanization, including robotics and sensors, for phenotyping
- Standardization of ontologies, interoperability of platforms and systems, and integration of datasets
- Technologies that would identify the metabolic activities specific to particular microbes within a microbiome as well as facilitating elucidation of biochemical communication between microbes, and between microbes and their hosts
- Novel modeling approaches that address problems in phenotyping or microbiome structure and function

Proposed studies should be potentially transformative and may be considered "high-risk, high-payoff", and be compatible with the budget and time limits ($300,000, 2 years) of the EAGER funding mechanism. For more information on EAGERs, please review the NSF Grant Proposal Guide.

EAGER SUBMISSION PROCESS

EAGER proposal inquiries will be accepted from a Principal Investigator (PI) or a consortium of Investigators led by a PI at an eligible U.S. institution. Interested PIs are required to email a two-page summary as a pdf file with a filename in the format "PILastName_PIFirstName_PIInstitution.pdf" to

papm@nsf.gov by May 12, 2016, 5:00 PM proposer's local time. Investigators may be listed as PI or coPI in no more than two summaries. The summary must contain a project title, the names and affiliations of all PIs, and a project description highlighting the overall hypothesis and goal, specific aims, methods, intellectual merit, and broader impacts of the proposed research. All submitted material, including references and figures, must be included within the two-page summary and comply with the NSF Grant Proposal Guide formatting requirements. The summaries will be reviewed internally and PIs whose ideas best meet the goals of this DCL will be encouraged to submit full proposals to the NSF according to NSF EAGER guidelines.

This is an interagency partnership between NSF/BIO and USDA/NIFA, therefore meritorious proposals may be selected by one of the agencies for funding. Successful applications will then be forwarded to the appropriate agency for funding in accordance with each agency's terms and conditions. Applicants selected for funding may be required to provide additional information. Subsequent grant administration procedures will be in accordance with the individual policies of the awarding agency. Information on NIFA's policies and procedures is in NIFA's Policy Guide.

For more information or questions, please contact one of the following:

- Michael Mishkind, Program Director, Integrative Organismal Systems Division, NSF at mmishkin@nsf.gov or 703-292-7190
- Larry J. Halverson, Program Director, Molecular and Cellular Biosciences Division, NSF at lhalvers@nsf.gov or 703-292-7278
- Edward Kaleikau, National Program Leader, Division of Plant Systems, Institute for Food Production and Sustainability, NIFA at ekaleikau@nifa.usda.gov or 202-401-1931
- Lakshmi Matukumalli, National Program Leader, Division of Animal Systems, Institute for Food Production and Sustainability, NIFA at lmatukumalli@nifa.usda.gov or 202-401-1766

Sincerely,

Jane Silverthorne
Deputy Assistant Director
Directorate for Biological Sciences
National Science Foundation

Parag Chitnis
Deputy Director
Institute of Food Production and Sustainability
National Institute of Food and Agriculture, USDA