National Science Foundation
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NSF 14-115

Dear Colleague Letter: FY 2015 Clean Energy Technologies Funding Opportunities

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Dear Colleagues:

It is critical to provide sustainable and economical energy systems on a scale sufficient to power all of society's needs. The development of clean energy technologies is an important step in that direction as it addresses the interrelated challenges of producing safe and responsible energy sources while reducing our dependence on foreign oil and minimizing the impact on the environment.

All of the Divisions in the following Directorates are participating in clean energy technology research and education through ongoing funding opportunities: Biological Sciences (BIO), Engineering (ENG), and Mathematical and Physical Sciences (MPS).

For BIO: fundamental research topics of interest in clean energy technology include, *but are not limited to*: systems and synthetic biology to streamline and scale the metabolic and energetic potential of living organisms such as microbes, fungi, algae and plants to produce non-petroleum based sources of important chemicals/materials, feedstocks and fuels. Investigations to assess the impact of fuel and/or bio-renewable chemical production on genome stability, fitness, and phenotype of the production organisms are of interest, as are studies to assess the potential environmental impacts of these technologies.

For ENG and MPS: examples of fundamental research topics of interest in clean energy technologies include, *but are not limited to*: hydrogen generation and storage; biological, chemical, and catalytic conversion of renewable carbon sources (such as biomass, methane, and carbon dioxide); the development of methods and materials that increase energy efficiency, such as the replacement of stoichiometric with catalytic processes; energy storage, transmission, or distribution (e.g. smart grid); power-electronic and energy-conversion devices; fuel cells; solar energy capture and conversion (including biological and bio-inspired processes for the conversion of sunlight to fuels, electricity, or thermal energy); wind/wave/tidal energy; nuclear energy; studies of energy efficiency and use; and carbon dioxide sequestration and storage.

Within these general guidelines, the Directorates encourage the submission of proposals in the areas of clean energy research. Proposals should be submitted to the NSF program appropriate to the disciplinary area of the proposed research in accordance with the submission window and conditions of that program.

Proposals are welcome from either single or multiple investigators. Interdisciplinary proposals that involve principal investigators traditionally supported by different participating divisions are encouraged. Please follow the guidelines and program descriptions located on the NSF website.

Proposals may be submitted in combination with other solicitations. For example, if there are strong collaborations with industry, the Grant Opportunities for Academic Liaison with Industry (GOALI) solicitation can be used in conjunction with this effort. Similarly, proposals may be submitted in

combination with the Faculty Early Career Development (CAREER) or the Research in Undergraduate Institutions (RUI) solicitation. Other NSF funding mechanisms such as Early Concept Grants for Exploratory Research (EAGER) and Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) may also be appropriate. Principal investigators are urged to consult with the cognizant program officers for additional guidance.

To see examples of awards made in this area visit the NSF Award Abstracts Database and perform a key word search. Alternatively, please visit the webpages of the disciplinary programs of interest in the participating divisions.

We are excited by the opportunities in the clean energy technologies area and encourage our communities to contribute to our sustainable and secure energy future.

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