



National Science Foundation
4201 Wilson Boulevard • Arlington, Virginia 22230

DATE: November 24, 2008

TITLE: The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
Employment Opportunity for Program Director - - Dear Colleague Letter

Dear Colleague:

The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET), within the Directorate for Engineering (ENG) at the National Science Foundation (NSF), announces a nationwide search for an engineering professional to fill the following four positions:

Formal consideration of applications will begin after the closing date.

(1) Program Director: Combustion, Fire, and Plasma Systems

This position is open for applications from November 24, 2008 to January 16, 2009. It is anticipated that the position will be filled no later than July 1, 2009.

(2) Program Director: Energy for Sustainability

This position is open for applications from November 24, 2008 to January 16, 2009. It is anticipated that the position will be filled no later than July 6, 2009.

(3) Program Director: Catalysis and Biocatalysis

This position is open for applications from November 24, 2008 to January 16, 2009. It is anticipated that the position will be filled no later than August 10, 2009.

(4) Program Director: Fluid Dynamics

This position is open for applications from November 24, 2008 to January 16, 2009. It is anticipated that the position will be filled no later than August 17, 2009.

While disciplinary expertise will be expected for the program director, the focus of the search is to assemble a scholarly, open-minded, diverse and intellectually integrated group to join the present team in sharing the Engineering Directorate's responsibilities within NSF's overall mission: to promote the progress of science, to advance the national health, prosperity, and welfare to secure the national defense.

Brief Program Activities Description:

The **Combustion, Fire, and Plasma Systems** program supports fundamental research and education on these subjects. Among the broader societal impacts of the program are cleaner global and local environments, enhanced public safety, improved energy and security, and more efficient manufacturing. This program is not an applied research program. Instead, it provides basic science that can be used in development of systems for combustion and plasma applications and for mitigating the effects of fire. Educational impact and new experimental,

theoretical, computational, and diagnostic tools are major products of this research. The successful candidate may support other NSF Engineering programs and work on special projects and initiatives.

The **Energy for Sustainability** program supports novel and exploratory fundamental research in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. With projected increases in global energy needs, more sustainable methods for energy production will need to be developed and production of greenhouse gases will need to be reduced. Sources of sustainable energy include but are not limited to: sunlight, wind, and biomass. Research on conversion of these sustainable energy sources to more portable forms such as hydrogen and hydrocarbon will also be considered. Issues such as broader impact of the research on education and the human resources infrastructure are of particular importance to NSF. The program director may also work on special projects and initiatives.

The **Catalysis and Biocatalysis** program supports fundamental research and education on these subjects. The program supports research on kinetics and mechanisms of important catalyzed chemical reactions as they relate to the production of chemicals, fuels, and specialized materials. Topics such as chemical kinetics of heterogeneous, homogeneous, and biocatalysis are investigated. Interfacial, electrochemical, and photochemical reaction processes are supported, as well as theory and modeling of reaction processes at surfaces. Many of the research studies have nanoscale aspects. The impact on educational infrastructure is an important element of the research projects. The successful candidate may support other NSF Engineering programs and work on special projects and initiatives.

The **Fluid Dynamics** program supports fundamental research and education on mechanisms and phenomena governing fluid flow. Areas of emphasis include but are not limited to: hydrodynamic stability; transitional flows and turbulence; Newtonian and non-Newtonian fluid mechanics; hydrology, sediment transport, waves and coastal engineering; biomedical and biomimetic flow, micro and nanoscale flow phenomena, rheology and polymer processing; geophysical & environmental flows; and high-performance computing as applied to multiscale flows with complex physics. Other program topics are: better basic understanding of fluid dynamics, enables better design, predictability, efficiency, and control of flow systems. Innovative uses of fluids will aid materials development, manufacturing, clinical diagnostics and drug delivery, sensors development, understanding environmental and water management issues, and energy production. The successful candidate may support other NSF Engineering programs and work on special projects and initiatives.

NSF Program Directors bear the primary responsibility for carrying out the Agency's overall mission. To discharge this responsibility requires not only knowledge in the appropriate disciplines, but also a commitment to high standards, a considerable breadth of interest and receptivity to new ideas, a strong sense of fairness, good judgment, and a high degree of personal integrity. Qualification requirements include a Ph.D. or equivalent professional experience in the relevant discipline, plus six or more years of successful research, research administration and/or substantial managerial experience in academe, industry, or government. Appointees are expected to have significant and relevant knowledge of research related to the specific research program announced and being applied to by the candidate. Also desirable is knowledge of the general engineering and scientific community, skill in written communication and preparation of technical reports, an ability to communicate orally, and several years of successful independent research of the kind normally expected of the academic rank of associate and full professor. All appointees are expected to function effectively both within specific programs and in a team mode, contributing to and coordinating with organizations in the Directorate, across the Foundation, and with other Federal and State government agencies and private-sector organizations as necessary.

Intergovernmental Personnel Assignment (IPA) Act: Individuals eligible for an IPA assignment with a Federal agency include employees of State and local government agencies or institutions of higher education, Indian tribal governments, and other eligible organizations in instances where such assignments would be of mutual benefit to the organizations involved. Initial assignments under IPA provisions may be made for a period up to two years, with a possible extension for up to an additional two-year period. The individual remains an employee of the home institution and NSF provides funding toward the assignee's salary and benefits. Initial IPA assignments are made for a one-year period and may be extended by mutual agreement. Further information regarding IPA positions is available at http://www.nsf.gov/about/career_opps/rotators/ipa.jsp.

Visiting Scientist Appointment: Appointment to this position will be made under the Excepted Authority of the NSF Act. Visiting Scientists are on a non-paid leave status from their home institution and appointed to NSF's payroll as a Federal employee. NSF withholds Social Security benefits (i.e., health benefits and life insurance), either directly to the home institution or to the carrier. Appointments are usually made for up to one year and may be extended for an additional year by mutual agreement.

Further information is available at http://www.nsf.gov/about/career_opps/rotators/ipa.jsp.

Temporary Excepted Service Appointment: Appointment to this position will be made under the Excepted Authority of the NSF Act. Candidates who do not have civil service or reinstatement eligibility will not obtain civil service status if selected. Candidates currently in the competitive service will be required to waive competitive civil service rights if selected. Usual civil service benefits (retirement, health benefits, and life insurance) are applicable for appointments of more than one year. Temporary appointments may not exceed three years.

For additional information on NSF's rotational programs, please see "Programs for Science, Engineering and Science Education Positions" on the NSF website at: http://www.nsf.gov/about/career_opps/.

Should you or your colleagues be interested in this position, or wish to nominate suitable candidates, please contact the search committee coordinator, Dr. Robert M. Wellek rwellek@nsf.gov, and forward a curriculum vita to him between November 24, 2008 and January 16, 2009. Inquiries, applications, and nominations for this Program Director position should be directed to:

Dr. Robert Wellek, Search Committee Coordinator, Deputy Division Director
Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
National Science Foundation
4201 Wilson Boulevard, Room 565
Arlington, Virginia 22230

Phone: (703) 292-8320 | Fax: (703) 292-9054 | e-mail: rwellek@nsf.gov

Dr. John McGrath, Division Director
Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET)
National Science Foundation
4201 Wilson Boulevard, Room 565
Arlington, Virginia 22230

Phone: (703) 292-5382 | Fax: (703) 292-9098 | e-mail: jmcgrath@nsf.gov

**NSF IS AN EQUAL OPPORTUNITY EMPLOYER COMMITTED TO EMPLOYING
A HIGHLY QUALIFIED STAFF THAT REFLECTS THE DIVERSITY OF OUR NATION.**