



General Programmatic Terms and Conditions (PTC) for Center for the Environmental Implications of Nanotechnology (CEIN) Cooperative Agreements (NSF 07-590)

1. **Key Personnel:** Except for the Principal Investigator(s) (PIs) or Co-PIs identified in this award, requests to make any changes to senior personnel, organizations, and/or partnerships specifically named in the proposal, that have been approved as part of this award, shall be submitted in writing to the cognizant NSF Program Official for approval prior to any changes taking effect. Requests for prior approval of changes to the PI(s) or Co-PIs must be submitted through FastLane for review by the cognizant NSF Program Official and approval by an NSF Grants Officer.
2. **Program/Project Description:** This project will establish a Center to foster interdisciplinary research, education and outreach on the environmental health and safety implications of nanotechnology.

The Center will conduct research to improve understanding of the interactions of natural, incidental and manufactured nanomaterials with living and non-living components of the environment. Such research will include studies of nanomaterial transport and transformation in the environment, bioavailability and toxicity to organisms, bioaccumulation in food webs, and impacts on ecosystems.

Human capacity building will be fostered through direct mentoring and research training of new researchers in nanoscience, including undergraduate and graduate students and post-doctoral fellows. The Center will establish connections to institutions serving under-represented groups and involve members of such groups in research training. Training will promote an appreciation for collaborative and interdisciplinary research.

Partnerships may be developed with other nanotechnology science and engineering centers, national laboratories and federal agencies, and industry. The Center will collaborate with the Nanoscale Informal Science Education network, and others, as appropriate to conceptualize and implement outreach activities whose impact is to improve the public understanding of and engagement with the environmental implications of nanotechnology.

Outreach activities will also engage stakeholders in industry, government, and academia to inform them on ways of reducing uncertainty about the environmental health and safety implications of nanotechnology. Given the available resources of the CEIN a plan will be developed that specifies: the outreach tasks, intended learning outcomes, geographic distribution of impact, and program evaluation processes.

3. **Project Governance:** The Awardee will ensure that an efficient and effective project governing structure is in place throughout the award period to support all critical or significant project activities. Among the governing components will be:
 - A. **External Advisory Board (EAB)** whose membership will be subject to the approval of NSF's cognizant program official and will meet at least once a year; provide written and verbal advice to the Center on its activities, including progress and integration of research, education and outreach activities among all sub-awardee institutions; advise the center leadership on strategic directions and management policies.
 - B. **Director/PI:** responsible for overall project management, general oversight of the Center activities, and implementation of the strategic plan, including assurance that the research and educational missions of the Center are integrated and accomplished; develop, execute, and monitor a plan to manage conflicts of interest for the project, including the EAB.
 - C. **Director for Education/Outreach:** responsible for overall oversight of courses and other education and outreach activities and for their assessment at the Center.
 - D. **Executive/Steering Committee:** composed of the lead senior personnel for the Center (including the PI and Co-PIs); responsible for reviewing progress and coordinating activities in research, education and outreach at the Center; advise the Center Director on overall resource allocation, strategic directions and management policies.
 - E. **Chief Operating Officer/Executive Director:** responsible for day-to-day oversight of Center operations.
 - F. **Administrative Support Personnel:** to include an Information Technology Specialist, a Financial Manager, and an Administrative Assistant; supporting the day to day operation of the Center.
4. **Governing Responsibilities:** The Awardee will ensure efficient and effective performance of all project responsibilities by the governing components throughout the award period. The Principal Investigator (PI) will cooperate and coordinate with the cognizant NSF Program Official by:

- A. Providing advance notification of all EAB meetings;
 - B. Providing written EAB meeting reports no later than 14 days after the conclusion of each meeting.
 - C. Contributing to the assessment of scientific progress and administrative effectiveness in achieving the strategic goals of the Center;
 - D. Participating in NSF-initiated reviews conducted via telephone or site visit, on an as needed-basis during the course of the project; and
 - E. Developing a strategic plan for the center within the first year of the award that includes consideration of ways to coordinate activities with the other CEIN award made under this solicitation, especially in regards to plans for long term data management and access.
5. **Reporting Requirements:** The Awardee will provide annual reports as designated by the NSF cognizant Program Official with content, format, and submission time line established by the NSF cognizant Program Official. The Awardee will submit all required reports via FastLane using the appropriate reporting category; for any type of report not specifically mentioned in FastLane, the Awardee will use the “Interim Reporting” function to submit reports.

Annual reports and the final report shall include information related to:

- A. Listing of the Center participants during the previous annual funding period, including but not limited to post-doctoral scholars, graduate students, and undergraduates. Information will include demographic data and disciplinary background;
- B. Scientific accomplishments;
- C. Descriptions of education and outreach activities, and participation of minorities and representatives of underrepresented groups in these;
- D. Progress on internal communication and data management systems;
- E. Progress on public access to, and distribution of data, software and the like, including any web sites and databases;
- F. Sponsored workshops with listing of participants;
- G. Unanticipated collaborations, research projects and other endeavors enabled or stimulated by the Center;

- H. Status of partnerships with the private sector, if applicable;
- I. EAB meeting reports describing its discussions, conclusions, and recommendations;
- J. Compliance with Human Subjects Review and with Animal Care and Use Review;
- K. Updated budget pages, work plan and timetable for the following year; and
- L. Quantitative and qualitative analysis of center activities according to guidance provided by the NSF Cognizant Program Official, in order to document the impact of this project.

6. **Ongoing Project Oversight:** The Awardee will ensure full commitment and cooperation among the governing structure components, and all project staff during all ongoing NSF project management and oversight activities. The Awardee will ensure availability of key personnel during any desk or on-site review as well as timely access to all project documentation. The Awardee will flow down this condition to all subawardees.

NSF will conduct at least two site reviews to determine the effectiveness of the Center and its value to the scientific community. The site reviews will consider the quality of the scientific activities that the Center has enabled, the quality of the scientific activities addressing national needs; progress towards reducing uncertainty in environmental risks of nanotechnology, effectiveness and accessibility of the data management systems; and the effectiveness of the education and outreach activities. Other aspects of Center activities considered will include: administration and management, cooperation with partner organizations, and participation by minorities and members of under-represented groups.

During each year of the project, the NSF will evaluate the project to determine whether the Foundation will continue to support full operations or will provide decreased funding to phase out NSF support of the Center. If a decision is made to phase-out NSF support of the Center, the Awardee will negotiate a six-month phase-out plan with NSF.

Subject to a favorable recommendation following the fourth-year site review and in accordance with NSF policies and procedures, the Awardee may submit a request no later than 1 November 2012 for a renewal of the award for a period not to exceed five years. NSF will conduct a merit review and site visit. Funding beyond the initial 5-year period will require negotiation of a new Cooperative

Agreement. If NSF determines that funding shall not be continued, the Center will not receive any further support from NSF.

7. **Intellectual Property:** An intellectual property agreement including publication and patent rights must be negotiated between the awardee and other institutional participants and any current and future subawardees. This Intellectual Property agreement shall be in place between the primary awardee, subawardee(s) and other institutional participants in the project within 60 days of the start of the award or the initiation of any new relationships. A copy of the (signed and dated) intellectual property agreement shall be provided to the cognizant program official within 30 days thereafter.

8. **Information Technology Systems Security:** Security for all information technology (IT) systems employed in the performance of this award, including equipment and information, is the Awardee's responsibility. Within a time mutually agreed upon by the awardee and the cognizant NSF Program Official, the Awardee shall provide a written Summary of the policies, procedures, and practices employed by the Awardee's organization as part of the organization's IT security program, in place or planned, to protect research and education activities in support of the award.

The Summary shall describe the information security program appropriate for the project including, but not limited to: roles and responsibilities, risk assessment, technical safeguards, administrative safeguards, physical safeguards, policies and procedures, awareness and training, and notification procedures in the event of a cyber-security breach. The Summary shall include the institution's evaluation criteria that will measure the successful implementation of the IT Security Program. In addition, the Summary shall address appropriate security measures required of all subawardees, subcontractors, researchers and others who will have access to the systems employed in support of this award.