



Programmatic Terms and Conditions (PTC) for the Center for Research at the Interface of the Mathematical and Biological Sciences (CIMBS), (NSF 07-597) Cooperative Agreements

1. **Key Personnel:** Except for the Principal Investigator(s) (PIs) or Co-PIs identified in this award, requests to make any changes to 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 and education at the interface of the mathematical and biological sciences. It will do so by developing a series of small working groups focused on topics that will benefit from interdisciplinary efforts. The center will become a national community resource by extending an open call for those working groups. It will also focus on areas of national needs through partnerships with federal agencies. Workshops assembling larger groups of researchers will assess broader problems, with dual goals of fostering language-building across disciplines and defining specific issues to be addressed by future working groups. Human capacity building will be fostered through direct mentoring of new researchers, including undergraduate and graduate students and post-doctoral fellows. There will be outreach efforts in collaboration with professional societies to educate biologists about mathematical and computational approaches and mathematicians about new mathematical challenges arising from current biological research. The center will establish connections to institutions serving under-represented groups and develop a research program for undergraduates and high school teachers.

The center will devote a portion of its resources to research projects designated by the cognizant NSF Program Official. Those research projects will be directed to problems involving national needs, especially infectious animal diseases, and will be determined in consultation with program officials at the Departments of Homeland Security and Agriculture.

The center will provide infrastructure and support for other activities funded through other programs at NSF, the Departments of Homeland Security and Agriculture, and other institutions or federal agencies that are consistent with its overall mission to enhance research and education at the interface of the biological and mathematical

sciences, including workshops, working groups, student education, public outreach and post-doctoral scholars.

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) Board of Advisors (BoA): 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 workshops, working groups, sabbatical visitors, and post-doctoral scholars; oversee strategic planning for all aspects of the center;
 - b) Director/PI: responsible for overall project management, general oversight of the center activities, and implementation of the strategic plan, including assurance that the scientific 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 BoA;
 - c) Deputy Director: responsible for day-to-day oversight of center operations;
 - d) Associate Directors: responsible for direct oversight of scientific activities; graduate education, other education and outreach activities; and partner relations; and
 - e) Committee to Promote Diversity: responsible for providing advice and oversight of center activities with the goal of increasing participation by persons from under-represented groups.

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 BoA meetings;
 - b) Providing written BoA meeting reports no later than 21 days after the conclusion of each meeting.
 - c) Compiling and contributing data and information needed for the assessment of scientific progress and administrative effectiveness of the center in achieving its strategic goals; and
 - d) Participating in NSF-initiated reviews conducted via telephone or site visit, on an as needed-basis during the course of the project.

5. **Reporting Requirements:** The Awardee will provide ad hoc and regular reports as designated by the NSF cognizant Program Official with content, format, and submission timeline established by the cognizant NSF 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) Analysis of the center participants during the previous annual funding period, including but not limited to workshop and working group attendees, post-doctoral scholars, graduate students, and undergraduates. Information will include demographic data and disciplinary background;
 - b) Descriptions of workshops and conferences, including participant lists;
 - c) Descriptions of projects undertaken by persons on sabbatical leave or other long-term visiting appointments at the center;
 - d) Highlights of projects with near-term relevance to resource managers and policy makers;
 - e) Descriptions of education and outreach activities, and participation of minorities and representatives of underrepresented groups in these;
 - f) Unanticipated collaborations, research projects and other endeavors enabled or stimulated by the center;
 - g) Quantitative and qualitative analysis of center activities according to guidance provided by the cognizant NSF Program Official, in order to document the impact of this project;
 - h) BoA meeting reports describing its discussions, conclusions, and recommendations.
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 all key institutional partners during any desk or on-site review as well as timely access to all project documentation.

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, the change in culture of the research communities of the biological and mathematical sciences, 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 Foundation 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 a 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 additional support from NSF.

7. **Intellectual Property:** The Awardee will establish and publicize an intellectual property policy, including publication and patent rights, for all participants in center activities. Intellectual property agreements must be negotiated between the Awardee and each institutional participant or future subawardee. All such policies and agreements will be done in a timely fashion and copies of any (signed and dated) intellectual property agreements shall be provided to the cognizant NSF Program Official within 30 days after such an agreement is in place.

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.