



General Programmatic Terms and Conditions (PTC) for the Plant Genome Research Program (PGRP) Cooperative Agreement(s); (NSF 06-581)

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. Changes to PIs/Co-PIs must be submitted through FastLane for Grants Officer approval.

2. **Program/Project Description:** The goal of the program is to sequence the euchromatin of the tomato genome, taking into account the following considerations:
 - a) The tomato genome-sequencing project encompasses the US contribution to the International Tomato Sequencing Project that aims to provide the complete sequence and structures of all tomato genes and their locations (in linear order) on both the genetic and physical maps of tomato. It is understood that both biological and technical constraints will likely preclude absolute characterization of the complete tomato gene catalog.
 - b) This project will generate a low resolution DNA sequence of the entire tomato genome based on state-of-the-art next generation sequencing technologies as well as a high quality DNA sequence of Chromosomes 1 and 10, two of twelve tomato chromosomes. This effort will complement that of the international partners who are collectively creating the sequences of the 10 remaining chromosomes.
 - c) The project will continue to coordinate the international sequencing effort by supplying verified BAC clones and performing the necessary genetic and physical locations required to guide sequencing efforts.
 - d) The project will coordinate with international partners to validate the integrity of the tomato genome sequence in order to provide a final sequence of uniform high quality in both sequence and annotation.
 - e) The project will continue to develop and enhance SOL Genomics Network (SGN; <http://sgn.cornell.edu/>), the primary access, analysis and distribution point of the tomato genome sequence and related information. SGN is also a Clade Oriented Database (COD) containing genomic, genetic, phenotypic and taxonomic information for species in the Euasterid clade, including the families Solanaceae (e.g. tomato, potato, eggplant, pepper, petunia) and Rubiaceae (coffee).

- f) At the end of the project, at least 90% of the sequences should be of finished quality according to currently acceptable standards as per the established "human" or "mouse" finishing standards. These guidelines can be found at <http://www.genome.gov/10001812>. The most current version will be maintained at the Washington University Genome Sequencing Center website at <http://genome.wustl.edu/platforms.cgi?id=5>.
- g) Annotation should include gene models, predicted exon/intron structure, incorporation of EST and full-length cDNA data, gene ontology, and relationship with homologs in other organisms, including but not limited to, the other sequenced plant genomes.
- h) Annotation should be coordinated with international partners as well as with existing Solanaceae community and comparative databases with the eventual goal of generating complete curation of Solanaceae genomic sequences to a standard set by established model organism databases that can be accessed through GenBank and SGN.
- i) This project will create a new physical map of the tomato genome. Every effort should be made to fully integrate the sequences with the genetic and physical maps.

3. Project Governance: The Awardee will ensure that an effective governing structure is in place throughout the funding period, with the structure established and recorded according to the time line developed by the Awardee, in consultation with the cognizant NSF Program Official.

- a) The PI in consultation with the cognizant NSF Program Official and the International Tomato Genome Sequencing Consortium will assemble an Advisory Committee (AC) comprising technical and management experts. The AC will hold a minimum of one face-to-face meeting per year. No changes to the AC shall be made without the prior approval of the cognizant Program Official. The AC is advisory to the PI, providing input on such items as:
 - 1) Technical issues;
 - 2) Data and materials release;
 - 3) Coordination with community databases;
 - 4) Project management;
 - 5) Coordination with other projects with complementary goals; and
 - 6) Interactions with the community.
- b) The PI will cooperate and coordinate with the cognizant NSF Program Official by:
 - 1) Providing notifications in advance of all AC meetings so that the cognizant NSF Program Official can attend as an observer;
 - 2) Providing written AC meeting reports, and responses to their recommendations with the annual report;

- 3) Contributing to the assessment of scientific progress and administration against targeted goals for each participant; and
 - 4) Participating in mid-project reviews conducted via telephone or site visit, as needed.
- c) The designated Principal Investigator (PI) is responsible for:
- 1) Overall project management;
 - 2) Coordination of activities among all project participants and institutions;
 - 3) Ensuring that project goals and milestones are met;
 - 4) Ensuring that all project data is released and accessible to the public in a timely way;
 - 5) Submission of Annual Progress Reports on or before the specified date, that should include any AC reports and responses for the previous reporting period;
 - 6) Coordination of project activities with other Plant Genome Research Projects (PGRP);
 - 7) Coordination with the International Tomato Genome Sequencing Consortium and other related research projects and activities in the US and internationally; and
 - 8) Participation in the annual NSF PGRP Awardee Meetings, along with any additional project personnel requested to attend by NSF, such as the lead in bioinformatics.

4. Reporting Requirements: The Awardee will submit all ad hoc and regular reports with content, format, and submission dates designated by the cognizant NSF Program Official, in consultation with the Awardee and PI. This information will be communicated to the PI electronically and kept on record by the cognizant Program Official. The Awardee will submit all regular reports to NSF via FastLane. Regular reports include the Annual Progress Report containing a summary of progress as measured against goals established in the work schedule, related to:

- a) Scientific accomplishments;
- b) Progress on internal communication and data management systems;
- c) Progress on public access to, and distribution of data, biological materials and reagents, including any web sites, databases and reagent distribution activities;
- d) Any problems likely to delay timely accomplishment of goals established in the timetable and proposed resolution;
- e) Report on subaward activities;
- f) Educational/training activities, including outreach activities (e.g., user workshops);

- g) Reports on proactive steps taken by individuals within the project and/or the project as a whole to increase the role of members of underrepresented groups in the activities of the project;
- h) Status of collaboration with international collaborators and related international research efforts.
- i) Status of collaboration with other PGRP awardees and related domestic research efforts (e.g., USDA);
- j) Status of collaboration with private industries, if applicable;
- k) Feedback from the user community, if any;
- l) A personnel and financial report as designated by the cognizant NSF Program Official; and
- m) The Annual Progress Report shall contain any proposed budget revisions that are subject to NSF approval as well as updated current and pending support statements.

5. Intellectual Property: An Awardee-to-Subawardee agreement on intellectual property including publication and patent rights must be negotiated. This Intellectual Property agreement shall be in place between the primary awardee, subawardee(s), and other institutional participants in the project within 60 days and a copy of the (signed and dated) intellectual property agreement shall be provided to the cognizant program official within 30 days thereafter (or ninety days from the date of approval of this award).

6. Ongoing Project Oversight: The Awardee will work with the PI and the cognizant NSF Program Official to facilitate the effective management and timely completion of the NSF-funded activities. 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.

The cognizant NSF Program Official will work closely with the PI and Awardee to ensure effective management and timely completion of the NSF-funded activities as well as the timely release of data and resources generated by said activities. In addition to the review of Annual and Interim Progress Reports and the participation in project AC meetings as an observer, the cognizant Program Official will provide project oversight through site visits, reverse site visits, teleconferences and/or video conferences.

7. Data Release and Dissemination: The PI will be responsible for ensuring public access to, and distribution of data, biological materials and reagents, including any web sites, databases and reagent distribution activities. The PI will alert and work with the AC and cognizant NSF Program official to manage any situations that may negatively impact the release and access to data during the course of the project.