



National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

NSF 11-049

Dear Colleague Letter: Guidance on Submission of RAPID Proposals to ENG, CISE, and OISE on the 2011 Earthquakes in Japan and New Zealand

Dr. Subra Suresh, Director of the National Science Foundation (NSF), has issued a [Dear Colleague Letter](#) (DCL) concerning the acceptance of proposals to conduct research on the effects of the February 21, 2011 magnitude 6.3 South Island of New Zealand (Christchurch) earthquake, and the March 11, 2011 magnitude 9.0 earthquake near the East Coast of Honshu (Tohoku), Japan with the ensuing tsunami and nuclear power plant crises. In response to this, the Directorate for Computer and Information Science and Engineering (CISE), the Directorate for Engineering (ENG), and the Office of International Science and Engineering (OISE) are issuing this letter to provide context and clarification for the types of proposals for investigatory research being entertained, together with guidance on the process to submit proposals to these specific directorates. Researchers interested in submitting proposals to other directorates or offices should contact cognizant NSF program officers directly.

The number of awards made by CISE, ENG, and OISE will depend on the quality of the proposals received and the availability of funds. For timely consideration, proposals should be submitted electronically via the NSF FastLane system by **Friday, April 29, 2011**. It is anticipated that the majority of awards will not exceed \$50,000.

Proposals must conform to the guidelines for preparation of Rapid Response Research (RAPID) proposals as specified in the Proposal and Award Policies and Procedures Guide (PAPPG), [NSF 11-1](#). As noted in the PAPPG, the RAPID funding mechanism is used for proposals having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural or anthropogenic disasters and similar unanticipated events. RAPID proposals should explore hypothesis-driven research, seek to advance a specific body of scientific literature, and discuss the urgency to gather perishable data needed for the hypothesis-driven research.

Topics appropriate for RAPID proposals may include, but are not limited to, the following for the collection of perishable field data:

- Tsunami generation, run-up, and impact on the natural and built environments.
- Geotechnical systems performance, with appropriate site characterization and documentation of liquefaction, lateral spreading, differential settlement, subsidence, landslides, soil/structure interaction, and port and coastal regions.
- Structural and nonstructural systems performance, including buildings, bridges, dams, communication towers, water towers, industrial units, and other components of civil infrastructure systems; techniques for rapid, large-scale condition assessment of buildings and infrastructure; sensor-based tracking and monitoring of structural performance.
- Critical infrastructure/lifeline systems performance (e.g., water and food supply, housing, wastewater, power, communications, transportation, health care delivery, and banking and finance).
- Geotechnical, structural, nonstructural, and critical infrastructure systems performance studies using George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) mobile field equipment (<http://www.nees.org>). Proposers planning to use NEES mobile equipment will need to include in their proposal submission, the equipment schedule and budget for equipment and personnel deployment, and will be responsible for obtaining any required field permits.
- Emergency preparedness, response and relief: use of imagery and sensor-based technologies for

rapid post-event damage assessment; coordination of and technologies such as robots and organizational processes for search and rescue; tsunami risk communication and warnings; individual, household, organizational, and community preparedness and response; provision of temporary shelters and housing; supply chain and delivery of international aid; post-event risk communication; emergency preparedness and response for nuclear facility disaster; risk communication for nuclear accidents; and public protective action for nuclear disasters.

Given the international dimension, proposals should address access to expertise, facilities, and resources at the New Zealand or Japanese sites. Given the scale and extensive physical damage associated with these events, proposers should include a detailed research plan that incorporates specific plans for country entry and logistics for data collection. Whenever feasible, the proposed research should involve true intellectual collaboration with counterparts in New Zealand or Japan. Inclusion of a letter of collaboration and biographical sketches from foreign partners is strongly recommended. The awardee is responsible for obtaining required visas for foreign travel and research permits and clearances. Additionally, proposers should include in the proposal budget, travel costs for one trip to the Arlington, VA, area to present the results of their RAPID research at a workshop open to the public. The workshop is anticipated to be held in one year.

Data are collected and are often stored by individual field investigators, making access by others difficult. NSF requires all proposals (including RAPIDs) include a Data Management Plan of up to two pages that describes how the proposal will conform to NSF policy on the dissemination and sharing of research results. Specific instructions for completion of this section of the proposal is provided in [PAPPG, Part I, Chapter II.2.j](#).

The National Science Foundation is one of the four agencies participating in the National Earthquake Hazards Reduction Program (NEHRP). NSF also participates in the Wind and Seismic Effects Panel of the U.S.-Japan Cooperative Program in Natural Resources (UJNR). RAPID awardees may be asked to share and/or coordinate their activities, as relevant, with activities for post-earthquake investigations organized under the auspices of NEHRP and UJNR. RAPID awardees conducting post-tsunami surveys/reconnaissance may also be asked to share and/or coordinate their activities, with those organized by the National Oceanic and Atmospheric Administration (NOAA) and/or UNESCO, e.g., the International Tsunami Survey Team (ITST).

Awardees are expected to adhere to U.S. Department of State guidance regarding travel and stay in Japan and New Zealand:

- U.S. Department of State, Travel to Japan - Country Specific Information (http://travel.state.gov/travel/cis_pa_tw/cis/cis_1148.html)
- U.S. Department of State, Travel to New Zealand - Country Specific Information (http://travel.state.gov/travel/cis_pa_tw/cis/cis_984.html)

Prior to submitting the proposal, Principal Investigator(s) (PI(s)) must contact the NSF Program Officer whose program is most germane to the proposal topic. The cognizant Program Officers for this opportunity are as follows:

- Dr. Sajal Das, Networking Technology and Systems, CISE, sdas@nsf.gov
- Dr. Richard Fragaszy, Geotechnical Engineering, ENG, rfragasz@nsf.gov
- Dr. Thomas Henderson, Robust Intelligence, CISE, thenders@nsf.gov
- Dr. Sven Koenig, Robust Intelligence, CISE, skoenig@nsf.gov
- Ms. Myra McAuliffe, New Zealand Program, OISE, mmcaulif@nsf.gov
- Dr. Joy Pauschke, George E. Brown, Jr. Network for Earthquake Engineering Simulation, ENG, jpauschk@nsf.gov
- Dr. Rita Rodriguez, Industry/University Cooperative Research Centers (I/UCRC) Program, CISE, rrodrigu@nsf.gov
- Dr. M. P. Singh, Hazard Mitigation and Structural Engineering, ENG, mpsingh@nsf.gov
- Dr. Konstantinos Triantis, Civil Infrastructure Systems, ENG, ktrianti@nsf.gov
- Dr. Richard Voyles, Cyberphysical Systems, CISE, rvoyles@nsf.gov
- Dr. Dennis Wenger, Infrastructure Management and Extreme Events, ENG, dwenger@nsf.gov
- Dr. Paul Werbos, Energy, Power, and Adaptive Systems, ENG, pwerbos@nsf.gov
- Dr. R. Clive Woods, Japan Program, OISE, rwoods@nsf.gov

The Program Officer may request the PI(s) to submit a draft proposal project summary via email to determine relevance and interest prior to formal submission of the RAPID proposal. The RAPID

proposal should be submitted electronically via FastLane or Grants.gov, if requested by the Program Officer, to the appropriate disciplinary program in CISE or ENG, by the **April 29, 2011** target date.

CISE, ENG, and OISE look forward to continuing work with the research community on the response to these disasters.

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