



RAPID NHERI
Natural Hazards Reconnaissance

Preparing a Competitive Proposal Involving the RAPID Facility

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NSF RAPID Grants Overview

- ◆ Available as a funding mechanism in most NSF programs (see the NSF Proposal and Award Policies and Procedures Guidelines (PAPPG), NSF 18-1, https://www.nsf.gov/pubs/policydocs/pappg18_1/index.jsp, Section II.E.2, Rapid Response Research (RAPID))
- ◆ Up to 1 year performance period
- ◆ Up to \$200,000 (some programs typically support <\$50K for post-disaster reconnaissance)
- ◆ Proposals having an urgency with regard to:
 - Availability/perishability of or access to:
 - Data, facilities, or specialized equipment
- ◆ Often in response to hazard events
 - No specific submission timeframe or deadline
- ◆ NSF Dear Colleague Letters (DCL) may be used to alert community to RAPID funding mechanism
 - Generally used for major disaster
 - May have a target deadline
- ◆ PIs **MUST** discuss proposals with Program Officer prior to submitting or the proposal will be returned without review
- ◆ Generally, RAPID awards for geotechnical engineering reconnaissance only after completion of more immediate, NSF-supported GEER field work



NSF RAPID Grants Overview

- ◆ Program officers can make decision w/o external review
- ◆ Can take 4-6 weeks to process and award funding

Examples of NSF Dear Colleague Letters (DCL)

<https://www.nsf.gov/pubs/2011/nsf11049/nsf11049.jsp>



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RAPID Proposal Preparation

- ◆ Email NSF Program Officer 1-page summary ASAP prior to submission (RAPID proposal should not be submitted unless invited by a Program – or else RWR)
 - Ask whether there is a related DCL or more appropriate program
 - Inside the U.S.: Address collaborators, logistics, protocols, equipment, adherence to laws, access to affected locations (e.g., federal, state, and local government investigators on-site, building owners), and safety
 - Outside the U.S.: Address in-country collaborators, logistics, protocols, and equipment; adherence to in-country laws; access to affected locations; U.S. State Department and country embassy contacts and notifications; and safety
- ◆ Review criteria (typically internal NSF; rarely external review)
 - Standard criteria: Intellectual Merit and Broader Impacts
 - Any additional criteria in the DCL
 - Clear description of why proposed research is urgent
 - Why RAPID award is most appropriate funding mechanism
 - Budget consistent with project scope
- ◆ Project Description (see NSF PAPPG, NSF 18-1, for proposal preparation requirements)
 - Up to 5 pages
 - All other standard NSF formatting requirements apply

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Real-World Issues with Drone Deployment in Post-Disaster Settings

- ◆ In post-disaster settings, local officials may prohibit drone flights to accommodate for increased low altitude helicopter flights
- ◆ Rules and regulations vary by country and must be checked before deploying for a foreign mission
- ◆ Bad weather (e.g., rain, snow, fog) can ground flights, or produce poor quality images
- ◆ Batteries must be hand-carried on flights; international carry on rules vary
- ◆ *It is important to have a contingency plan in the event drones can not be used*

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Health, Safety and Security

Numerous medical and safety concerns that have arisen during reconnaissance events including:

- ◆ Gastrointestinal illness (very common)
- ◆ Contaminated water (damaged water treatment plants)
- ◆ Dehydration
- ◆ Robbery and theft
- ◆ Culture and expectation of graft or "tipping" (customs, property access, violations)
- ◆ Car accident (with associated legal issues)
- ◆ Rabid dog bite
- ◆ Miscellaneous open wound injuries
- ◆ Chemical release from industrial facilities
- ◆ Live wires on ground
- ◆ Radioactive gas release from damaged power plant

Note that:

- ◆ Medical services, including pharmacies, are very limited or non-existent
- ◆ International medicine specialty practices are becoming increasingly available, but may operate at a reduced level of service in disaster settings

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Health, Safety, and Security

In addition, you are encouraged to....

- ◆ Work with a travel medicine practice *before* leaving; ensure immunizations are up to date
- ◆ Take safety training courses through university/community
 - Basic first aid/CPR course
 - Field safety course
- ◆ Discuss plans with university risk management office or company/agency health and safety officers
- ◆ Example risk management forms will be posted on the RAPID website
- ◆ Work with in-country collaborators

Reconnaissance Research Ethics and Guidelines

- ◆ No single standard or well-recognized code of ethics for reconnaissance
- ◆ Good practice to include explicit ethics statement in work plans and proposals
- ◆ Major reconnaissance ethics issues often faced:
 - Interactions with informants and human subjects
 - Access to disaster site
 - Responsibility to informants and human subjects
 - Human subjects review/internal review boards

New Zealand Ethics Guidelines for Post-Disaster Research

Highlights

- Wear and carry clear identification – include name, organization and contact details
- Before gathering data on private property, contact the owner, inform them (what data, how will it be gathered, what will it be used for, potential risks to owner)
- Take no for an answer
- Coordinate research activity, and share data, to minimize researcher numbers/activities in the disaster impacted area
- Ensure research teams are resource-independent (food/water/tents/fuel)

INFORMATION SHEET: ETHICAL GUIDELINES FOR POST-DISASTER RESEARCH

Research activity in disaster-impacted regions incurs ethical risk

After disaster events, there is the potential to conduct research and recovery and rebuild research. This research and activity, however, is not always planned or coordinated and interacting with resource operations, interactions with emergency responders can be complex and difficult (BISD, 2016; Organisation, 2016).

Research competence and the ethics of the disaster mean that all research activities in disaster zones, irrespective of discipline, require heightened ethical care. The ethical guidelines in this information sheet are intended to address the identification of ethical before, during, and after research. For example, it would not be ethical to conduct research in the absence of safety, access to resources, or a secure communications system (BISD, 2016).

After disasters, defer data gathering, unless in support of the response operation

As a rule, data gathering should be deferred to the response. Research should only be undertaken in support of the response operation, unless required to do so in support of the response. Researchers supporting the response should follow measures to ensure safety in the response, disaster and/or relief, and other emergency services as a result of their research activities.

Guidelines for human interaction when conducting research

The Research Ethics Board (REB) is designed to protect the rights of human research subjects. This means that researchers should not conduct research in the disaster-impacted area when research activities have potential to increase the risk to disaster-impacted individuals or communities.

The RESPECT FOR PERSONS/UNLAWFUL CONSENT principle requires that people are considered capable of making informed decisions. People have the fundamental human right to be fully informed about research that can cause any risk to them, and to have their right respected by researchers.

After disasters, respect and prioritise the needs of locals and the response operation

- Inform response agencies about research activity
- Wear and carry clear identification: include name, organization and contact details
- Request consent to gather data
- Request and defer to the wishes of ethical and safety: wear to be an ethical observer with identification, including written consent to gather data
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The BENEVOLENCE principle requires that research activities should not be undertaken if they are likely to increase ethical risks.

After disasters, ensure human interactions do not inadvertently increase harm

- Clearly communicate identified sources of risk to the public
- Ensure interactions do not undermine the response safety risk management by relevant officials
- Ensure interactions do not increase ethical risk to the disaster-impacted area
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After disasters, provide research benefits to officials and impacted communities

- Make data available for response program
- Support officials with advice, if they request it
- Ensure data is gathered on private property accessible to the owner (or through a third party)

The DISTRIBUTIVE JUSTICE principle requires that research benefits and burdens are fairly distributed. Various uses of research data for the response should be considered in order to ensure that the research benefits are shared by the disaster-impacted area and that the research benefits are shared by the disaster-impacted area.

After disasters, minimise the footprint & impact of data gathering

- Coordinate research activity, and share data, to minimize researcher numbers/activities in the disaster-impacted area
- Ensure research teams are resource-independent (food/water/tents/fuel)

New Zealand NHRI Reference to Research Ethics and Disaster Research Programmes (2018)0001 Page 2 of 2



Contact: sarah.brown@earthquake.govt.nz

What Is Human Subjects Research?

- ◆ Both social science AND engineering research studies may qualify as human subjects research
 - Potentially requires approval from institution's internal review board
- ◆ Definition of "research" (45 CFR 46.102(d))
 - Systematic investigation, including research development, testing and evaluation
 - Designed to develop or contribute to generalizable knowledge
- ◆ Definition of "human subject" (45 CFR 46.102(f))
 - A living individual about whom an investigator conducting research obtains
 - Data through intervention or interaction with the individual, or
 - Identifiable private information



Internal Review Board (IRB)

- ◆ Mission of an IRB
 - Support faculty, staff, students to complete their research in compliance with federal and state laws and institution's policy
 - Review, approve initiation of, and conduct periodic reviews of research projects that involve human participants
- ◆ IRB application requires
 - Nature of the project
 - Methods to be used
 - Anticipated study population
 - Evidence of how they will obtain informed consent
- ◆ Expedited review could take 2-4 weeks
 - Unless prior plan with human subjects office

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Criteria for Exempt Status

- ◆ Involves survey procedures, interview procedures or observation of public behavior, unless:
 - Information obtained is recorded so that human subjects can be identified
 - Any disclosure of the human subjects' response that could:
 - Place the subjects at risk of criminal or civil liability
 - Damage subjects' financial standing, employability, or reputation
- ◆ Human subjects are elected or appointed public officials or candidates for public office

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Criteria for Exempt Status Cont.

- ◆ When there is an existing federal statute that requires complete perpetual confidentiality
- ◆ Research involving the collection or study of existing data
 - If these sources are publicly available, or
 - If the information is recorded by the investigator so that subjects cannot be identified
- ◆ Non-federally-supported research in which:
 - Subjects are cognitively-competent adults, AND
 - Research procedures consist solely of benign interventions, interactions, or observations of behavior

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Advice

- ◆ Get to know your human subjects office contact
 - Tell them about your recon research & make a plan
- ◆ Not sure if what you are doing is human subjects research? Ask your IRB/HSD.
- ◆ Take training asap
 - CITI (Collaborative Institutional Training Initiative)
 - <https://about.citiprogram.org/en/series/human-subjects-research-hsr/>
- ◆ Delays often caused by
 - Failing to provide necessary information
 - Not writing for a general audience
- ◆ Approval by collaborators' IRB(s) may be required
 - If they are also engaged in human subjects research

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International Collaborations

- ◆ Participants of U.S.-based reconnaissance efforts are often seen to represent the reconnaissance organization, the National Science Foundation, and more generally, the U. S. research community
- ◆ Having in-country collaborators is critical to a mission's success; co-author datasets and publications
- ◆ Recognize that in-country collaborators face recovery after a disaster and may proceed at a slow pace towards publication; true "collaboration" is important

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International Missions: Government Resources

[U.S. State Travel Advisories](#)

Great Canada travel advice - GOV.UK <https://www.gov.uk/foreign-travel-advice/canada>

GOV.UK

1. Home (<https://www.gov.uk>)
2. Passports, travel and living abroad (<https://www.gov.uk/foreign-travel-advice>)
3. Travel abroad (<https://www.gov.uk/foreign-travel-advice>)
4. Foreign travel advice (<https://www.gov.uk/foreign-travel-advice>)

Foreign travel advice

Canada

Summary

Still current as of: 22 March 2018

Updated: 24 January 2018

Latest update: Summary - removal of advice on the tsunami warning following an earthquake off the coast of north Alaska

[UK Foreign Travel Service \(suggested resource\)](#)

[STEP Foreign travel program](#)

Before leaving, and after the mission, be in contact with:

- U.S. State Department
- U.S. embassy officials
- And work with in-country collaborators to obtain foreign government notification/permission

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