

## **PREP Research Associate Job Description –Emergency Communications and Community Resilience Measurement**

This position is part of the National Institute of Standards (NIST) Professional Research Experience (PREP) program. NIST recognizes that its research staff may wish to collaborate with researchers at academic institutions on specific projects of mutual interest, thus requires that such institutions must be the recipient of a PREP award. The PREP program requires staff from a wide range of backgrounds to work on scientific research in many areas. Employees in this position will perform technical work that underpins the scientific research of the collaboration.

Despite significant progress in science, technology, guidance, and tools related to disaster-mitigation, natural, technological, and human-caused hazard events in the United States still result in significant direct and indirect costs in terms of lives lost, disruption of commerce and financial networks, properties destroyed, and the cost of mobilizing emergency response personnel and equipment. Community resilience, the ability to withstand the impacts of natural, technological, or human-caused hazards and recover community functions quickly, is a local and a national issue.

**Research Title:** Emergency Communications and Community Resilience Measurement Research Associate

### **U.S. Citizen Preferred**

The associate may be engaged in supporting two distinct and related efforts:

*Hurricane Maria National Construction Safety Team Investigation: Public Response to Emergency Communications Project* - The objective of this project is to investigate the role of emergency communications in public response for those under imminent threat from Hurricane Maria. This project will also examine the use of communications during response and recovery (during and immediately after the hurricane). The associate will support revisions to the Emergency Communications Project report and the NCST investigation report to address comments from the NIST review process and from the public comment period. In addition to finalizing the publication of these reports, the associate will help finalize other important investigation products for publication, including: a dataset of public messages issued before, during, and immediately after Hurricane Maria made landfall in Puerto Rico; and peer-reviewed journal articles on analysis of household decision-making for hurricane protective actions.

*Community Resilience Assessment Methodology Project* – The objective of this project is to develop a simplified, science-based community resilience assessment methodology that can be applied to communities of any size for the purpose of assessing baseline resilience as well as changes over time. The associate will support indicator development, as well as statistical analysis, econometrics, scale development, validation studies, and communication of results in various formats to support the goals of developing a community resilience assessment methodology.

### **Key responsibilities will include but are not limited to:**

- Carrying out statistical analyses and interpretation of results,

- Compiling and cleaning large datasets,
- Determining methods to analyze complex data for validation,
- Developing innovative methods and research directions that support goals,
- Co-authoring reports on results of analyses,
- Presenting results at internal meetings, and occasional meetings with external stakeholders,
- Ensuring that results, protocols, datasets, and documentation have been archived or otherwise transmitted to the larger organization.

### **Qualifications**

- A PhD in Urban Planning or a Social Science discipline,
- 7 years of relevant experience,
- Expertise in statistical analysis,
- Knowledge of both qualitative and quantitative methodologies,
- Familiarity with publicly available data sources,
- Ability to work with complex data at varying spatiotemporal scales,
- Strong oral and written communication skills.
- US Citizens Preferred

### **Privacy Act Statement**

**Authority:** 15 U.S.C. § 278g-1(e)(1) and (e)(3) and 15 U.S.C. § 272(b) and (c)

**Purpose:** The National Institute for Standards and Technology (NIST) hosts the [Professional Research Experience Program \(PREP\)](#) which is designed to provide valuable laboratory experience and financial assistance to undergraduates, post-bachelor's degree holders, graduate students, master's degree holders, postdocs, and faculty.

PREP is a 5-year cooperative agreement between NIST laboratories and participating PREP Universities to establish a collaborative research relationship between NIST and U.S. institutions of higher education in the following disciplines including (but may not be limited to) biochemistry, biological sciences, chemistry, computer science, engineering, electronics, materials science, mathematics, nanoscale science, neutron science, physical science, physics, and statistics. This collection of information is needed to facilitate administrative functions of the PREP Program.

**Routine Uses:** NIST will use the information collected to perform the requisite reviews of the applications to determine eligibility, and to meet programmatic requirements. Disclosure of this

information is also subject to all the published routine uses as identified in the Privacy Act System of Records Notices: NIST-1: NIST Associates.

**Disclosure:** Furnishing this information is voluntary. When you submit the form, you are indicating your voluntary consent for NIST to use of the information you submit for the purpose stated.