



Job Title	Research Associate - ASRC Environmental Sciences Initiative
PVN ID	RC-2412-006601
Category	Research
Location	CUNY-ADVANCED SCIENCE RESEARCH CENTER
Department	Environmental Sciences Initiative
Status	Full Time
Annual Salary	\$85,000.00 - \$90,000.00
Hour(s) a Week	35
Closing Date	Feb 04, 2025 (Or Until Filled)

General Description

Conducts scientific research as part of the newly funded NASA GLOBE Implementation Office at CUNY-ASRC. The GLOBE program was established in 1995 to stimulate citizen science and student-based research on several aspects of global change: on climate and weather, water and air quality, phenology, land use, and biodiversity. Students collect *in situ* data, augmenting their results with independent field measurements and merged with remote sensing observations. The GLOBE repository holds more than 30 years of data representing 250M *in situ* student observations from more than 125 countries. It thus represents a highly valuable, if not essential, data resource to monitor several dimensions of global change. An assessment of the useability of this retrospective archive to detect patterns of global change will be performed, using advanced analytics and AI. Working with the NASA agency personnel and other academic partners, the Research Associate will lead quality assurance and quality control (QA/QC) evaluations of the archive, develop approaches to fill gaps, assign the impact of planned/unplanned inconsistencies in data collection protocols, assign uncertainty bounds on the data, and judge the capacity of the integrated time series to detect patterns of global change over the multi-decadal timeframe. This analysis will be followed by the design to be presented to NASA for a forward-looking, optimized data analysis system, using modern computational and telecommunication tools, for application to future time periods.

The position represents an excellent opportunity to participate in and network professionally within a newly revitalized GLOBE program with a globally recognized team of experts, both in academia, NASA, other agencies, and NGOs. Subject to job performance, can be renewed annually for up to 5 years. As appropriate, the position may also be upgraded to a more permanent staff or faculty position.

Other Duties

In conjunction with ASRC GLOBE faculty the successful applicant will lead this numerical research and assist affiliated faculty, staff, and students. General duties will include:

- Collection, analysis, and assurance of validity of integrated data compendium
- Write progress reports; lead and co-author publishable findings
- Collaborate with internal and external colleagues
- Adhere to safety, hygiene, ethical standards as defined by CUNY and outside parties

More detailed, specific objectives are as follows:

- Survey users of the GLOBE data archive to establish variable-specific adoption/use rates for GLOBE data in earth science and global change research.
- Execute a series of well-focused theme-based, data “stress tests”, evaluating the functionality of the GLOBE DIS archive and supporting software, performed with members of the GLOBE community.
- Using the case study data bundles, evaluate existing uptake rates, revise existing data exchange protocols and then systematically measure any improvements (or loss) in uptake rates through post-hoc surveys among participating members of the GLOBE community.
- Explore the coherency between GLOBE in situ observations and NASA and other space agency remote sensing data to bring improved QA/QC to GLOBE student data. Develop protocols for automated intercomparisons to be made.
- Report back to NASA GLOBE officials on key findings, with a blueprint for modifying data access and use protocols.

Qualifications

MINIMUM QUALIFICATIONS

PhD (or Master degree with 3-5 years professional experience) in one or more related fields, as well as demonstrated research ability: mathematics, statistical analysis, artificial intelligence/machine learning, systems modeling, geographic information systems, remote sensing, computer science, digital database management.

OTHER QUALIFICATIONS

A Doctoral Degree in a related field and demonstrated research with strong computer science skills required. The successful candidate should be well-versed in handling large tera-byte scale data sets, be familiar with different databases and with various GIS systems in order to apply the developed software tools and datasets to the research project. Thorough and broad knowledge in area of expertise from underlying principles to highest level of implementation and ability to apply those skills are required. The Research Associate should have a broad understanding of complex problems and solutions coupled with an ability to implement the most advanced IT-based solutions. Capacity for advanced use of Mac OS, Linux, and Windows platforms essential. The successful candidate should also have good writing and public presentation skills.