

Opportunity Title: Climate and megafires

Opportunity Reference Code: 0119-NPP-NOV23-JPL-EarthSci

Organization National Aeronautics and Space Administration (NASA)

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Application Deadline 11/1/2023 6:00:59 PM Eastern Time Zone

Description This project proposes to study the King fire in California, the latest example of an emerging class of megafires changing the landscape of the Western US. Megafires may represent a tipping point transition to a new fire regime, one that could reshape US landscapes. Much of the King Fire burn area was surveyed shortly pre-burn (serendipitously) and was observed comprehensively by the pre-HyspIRI campaign during active burning. We propose to complement these observations with immediate post-fire observations of forest structure change (LiDAR), topography, and burn severity (imaging spectroscopy) before snowfall 2014, to obtain baseline science data, and for use in immediate post-fire mitigation activities with our agency partners. In recent years there has been an increase in the occurrence of extremely large wildfires (megafires) that have been subject of societal concern and scientific interest because of their size, cost, growing frequency and long-term ecological and hydrological impacts. Megafires exhibit extreme behavior and are poorly understood. Large fires create their own meteorology, thus traditional fire behavior models, used in active fire management, may fail to represent how localized fire weather affects fire behavior. This project will provide data critical to understanding the behavior and post-fire ecological recovery for extreme megafires and informing postfire and longterm management responses. The project will address NASA Applied Sciences goals to NASA's capabilities and higherlevel derived data products to improve natural disaster forecasting, mitigation and response, as well as aiding to understand the natural processes that produce wildfire hazard, and developing appropriate hazard mitigation approaches. The project will also address NASA Terrestrial Ecology goals of improving understanding of the wildfire as a factor in the structure and function of global terrestrial ecosystems. This project will provide aid in determining whether California's two recent megafires represent a "tipping point" to a new fire regime.

Location:

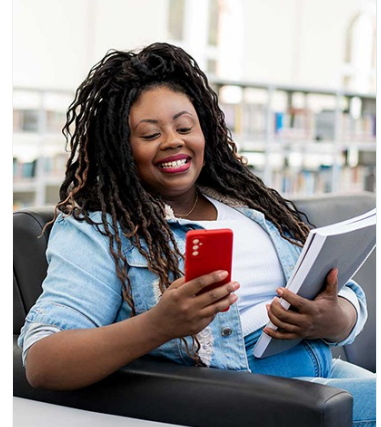
Jet Propulsion Laboratory
Pasadena, California

Field of Science:Earth Science

Advisors:

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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found



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at: <https://www.nasa.gov/oiiir/export-control>.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Eligibility Requirements

- **Degree:** Doctoral Degree.