



NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of the U.S. Geological Survey's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	USGS-19-FA-0040
Project Title	Preventing extreme fire events by learning from historical fire events, weather, and drought
Recipient	Scripps Institution of Oceanography
Principal Investigator / Program Manager	Dan Cayan
Anticipated Federal Amount	\$63,375.00
Cost Share	\$0.00
Total Anticipated Award Amount	\$113,375.00
New Award or Continuation?	New Award
Anticipated Period of Performance	April 1, 2019 to March 31, 2021 (2 years)
Award Instrument	Grant
CFDA # and Title	15.820
USGS Point of Contact	Stephen T. Jackson, stjackson@usgs.gov and Carolyn Enquist, cenquist@usgs.gov

OVERVIEW

The project will: investigate factors that explain the variation in annual fire activity in forested and non-forested landscapes in California, including longer-term effects of extended droughts and shorter-term effects of intense heat spells, low relative humidity, and extreme winds; explore the synchrony of different ignition sources with long-term drought and fire-weather conditions; provide a basis for a new set of predictive models of wildland fires using weather and drought measurements; and, develop better fire-risk models to improve future management needs and diminish the likelihood of surprise events. This project will contribute to these larger objectives by providing climatological information, maps, and statistics on event frequency as related to wildfire.

RECIPIENT INVOLVEMENT

This grant assesses the effects of long-term (multi-year) droughts driven by low precipitation, short-term ‘flash droughts’ driven by week-long heat waves, extreme turbulent winds, and ignition sources on extreme wildfire events in California chaparral and shrublands. It will focus particularly on the circumstances that contribute to conversion of small-scale ‘normal’ wildfires into extreme destructive wildfires of the kind that California experience in late 2017 (Thomas and Tubbs Fires). The project will help managers at DOI Bureaus (NPS, BLM, FWS), Forest Service, tribes, and California state and municipal agencies develop short-term and mid-term forecasting capacity for conditions that contribute to catastrophic fires, reducing destruction of wildlife habitat and human habitations and loss of human lives.

Principal Investigator will help design wind and humidity statistical downscaling methodologies, organize and negotiate model and observational data access and sharing, direct the overall work performed at Scripps Institution of Oceanography, UCSD, communicate and discuss diagnostic and prognostic weather-fire procedures with other scientists on the proposal team, contribute to fire community engagement, reports and scientific manuscripts. Data Analyst will co-design the statistical downscaling, lead the production and evaluation of statistically downscaled hourly wind and humidity over the multi-decade historical period, oversee the data flow that will access WRF high spatial resolution dynamical modeled wind, humidity and other relevant variables and make available the statistically downscaled wind and humidity, along with requisite metadata, to other team members and ultimately the broader science and applications community via a to-be-determined climate data archive. A to-be-named Post Doctoral Researcher will contribute to the statistical modeling production and the evaluation of the dataset by comparing dynamical model training data and the statistical model hourly wind and humidity output against available surface meteorological weather station records throughout the California region.

USGS INVOLVEMENT

The project will be carried out by the recipient. New knowledge and products produced from this new project will be shared with the SW CASC.

SINGLE-SOURCE JUSTIFICATION

DEPARTMENT OF THE INTERIOR SINGLE SOURCE POLICY REQUIREMENTS
Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.
In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria: <i>select those which apply- needs to match the sole source document</i>

- (1) **Unsolicited Proposal** – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives;
- (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity;
- (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;
- (4) **Unique Qualifications** – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;
- (5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.
- (6) Cooperative Agreements - USGS Unique Authority cited at 43 U.S.C. 36d (Federal, State, and academic partners) or DOI Authority cited at 43 U.S.C. 1457b (not-for-profit organizations).

USGS did not solicit full and open competition for this award based the following criteria:

Single Source Justification Description:

- (1) **Unsolicited Proposal** – The recipient possesses unique capabilities for developing forecasts of weather events and climate extremes that can lead to catastrophic wildfires, which is deemed advantageous to reaching the program objectives of the SW CSC.
- (2) **Unique Qualifications** – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as technical expertise and analytical capabilities.

STATUTORY AUTHORITY

43 USC 31 and the Administrative Provisions of P.L. 116-6 and Consolidated Appropriations Act, 2008, Div., F, Title I, P,L, 110-161