

## **Climate and Societal Interactions FY18 Information Sheet**

The Climate and Societal Interactions (CSI) Program provides leadership on decision support research, assessments, and climate services development activities to help society adapt to a changing climate. CSI supports projects to address the needs of decision makers planning and preparing for extremes (droughts, floods, and heat) in the context of their overall social and economic development objectives. The overarching goals of the CSI Program are the following:

1. Support for innovative and applicable and transferable approaches for decision-making, especially for risk characterization in the context of a variable and changing climate;
2. Establishment of a network of regionally scoped, long-term efforts to inform climate risk management and decision making; and
3. Promotion of the transfer of climate knowledge, tools, products, and services within NOAA, across the federal government, nationally, and internationally.

CSI will also ensure alignment with the priorities of a number of interagency efforts such as the: National Integrated Drought Information System Act (P.L. 109-430); National Climate Assessment; ; National Ocean Council; the National Fish, Wildlife, and Plants Climate Adaptation Strategy; Global Framework for Climate Services (GFCS) initiative; and the growing local and regionally-focused information needs that influence agency investments in water, security, infrastructure, and economic resilience..

For FY18, the CSI programs holding a competition under this Federal Funding Opportunity are the Sectoral Applications Research Program (SARP) and Coping with Drought in Support of the National Integrated Drought Information System (NIDIS). The competition manager is Dr. Nancy Beller-Simms; her email is [nancy.beller-simms@NOAA.gov](mailto:nancy.beller-simms@NOAA.gov).

SARP will be holding an informational webcast to discuss the background of these programs and expectations for this competition, as well as to address questions related to the development and submission of letters of intent and proposals. For times and accessibility information, please monitor the SARP website: (<http://cpo.noaa.gov/ClimateDivisions/ClimateandSocietalInteractions/SARPProgram.aspx>). Potential principal investigators can also contact her directly if needed.

## **Sectoral Applications Research Program (SARP) and Coping with Drought in Support of the National Integrated Drought Information System (NIDIS)**

SARP addresses the needs of stakeholders within key socioeconomic sectors working to incorporate climate variability and change into planning and preparedness for a more secure economic future..

In addition, SARP funds NIDIS projects through the Coping with Drought Initiative. NIDIS provides dynamic and easily accessible drought information for the nation through drought research focusing on risk assessment, forecasting, management, and development of decision-support resources.

Critical components of SARP and Coping with Drought projects include:

- Involvement of stakeholders and/or policy makers on the study team
- Demonstration of inclusion of NOAA:
  - data,
  - models (e.g., National Multi-Model Ensemble (NMME) - <http://www.cpc.ncep.noaa.gov/products/NMME/>),
  - efforts (e.g., on extreme events - <http://www.ncdc.noaa.gov/climate-information/extreme-events>) or
  - tools (e.g., [toolkit.climate.gov](http://toolkit.climate.gov))
  - entities ((e.g., Laboratories, Cooperative Institutes, Centers (e.g. River Forecast Centers), and Regional Climate Service Directors (RCSDs); Regional Climate Centers (RCCs); Regional Integrated Sciences and Assessment (RISAs) teams; etc.).

where possible and/or applicable, to further enhance NOAA's ability to provide critical scientific information to users and/or participation, where relevant.

- Exhibition of how the results of the funded work will be useful to the near-term interests of the project location as well as transferable to other locations
- Inclusion of partnerships, where relevant, with larger organizations, foundations, federations and/or the private sector to assure that the results of these studies are stimulating wide involvement and are shared and incorporated in other locales.
- Accountable and measurable results along with evaluation method(s) to assess the outcomes of the project.
- Demonstration of a clear partnership, for proposals related to drought, must be demonstrated with NIDIS staff, Drought Early Warning Systems, and/or NIDIS working groups.

Potential applicants for this announcement may wish to participate in a webinar specific to this announcement. Information on the timing and registration procedures should check regularly on the SARP website for specifics. See:

<http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPPProgram.aspx>.

Examples of previously funded drought projects that work in conjunction with SARP can be found here:

<http://cpo.noaa.gov/ClimatePrograms/ClimateandSocietalInteractions/SARPPProgram.aspx>.

### Focus of the FY18 FFO:

For FY18, SARP is soliciting proposals for two focus areas: 1) extreme events preparedness, planning, and adaptation within the water sector and 2) projects supporting the Coping with Drought Initiative with NIDIS.

### **1) Extreme Events<sup>1</sup> Preparedness, Planning, and Adaptation Within the Water Sector**

In the last five years, there has been at least one, billion-dollar precipitation-related event (i.e, flood or drought episode) in every state on the continental US (<https://www.ncdc.noaa.gov/billions/mapping>). These events have made communities more aware of the potential impacts of future events in their locations as they have impacted individuals and communities' lives, economic viability, and infrastructure. The recent floods in Oroville, California; Baton Rouge, Louisiana; West Virginia, and South Carolina and the droughts endured in California and the southwest US have motivated communities to increase their efforts to incorporate climate science into their short and long-term planning.

For FY18, SARP will award grants focused on developing strategies for increasing community resilience in U.S. towns, municipalities or small cities planning for the impacts of extreme precipitation events (too much or too little water) on their civilian population. Proposals should focus on the impact of extreme events on water resources and water-resource dependent activities (e.g., land use, watershed and water utility planning, emergency preparedness), specifically the connection between communication of risk and the design and implementation of risk mitigation and reduction strategies. The proposed work should be specifically geared towards the weather to climate timescale, i.e. sub-seasonal (3 weeks), seasonal, and annual extreme precipitation and flooding events.

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<sup>1</sup> For purposes of this competition, climate and weather extremes will include: "the occurrence of a value of a weather or climate variable above a threshold value near the upper (or lower) ends of the range of observed values of the variable" (IPCC, 2012 - <http://ipcc-wg2.gov/SREX/>). It may include a cumulative series of weather events (e.g., a series of cyclonic events or floods) or a single event that lasts more than two weeks (e.g., a drought).

NOAA is particularly interested in developing early warning systems so that individuals and communities have sufficient time to prepare for an upcoming event. A goal of this call is to improve the nation's decision support capabilities by exploring and improving upon linkages between extreme event forecasts and municipal/town/city planning agencies, the emergency planning sectors, and the operations of water, wastewater, stormwater, and urban drainage management services to the public. As a result, funded proposals will most likely include direct work with decision makers and could include case and/or pilot studies/applications that can be used for risk mitigation.

Specific proposal topics include the following options:

1. Developing a seasonal to annual climate focus within community multi-hazard planning, including frameworks for reducing impacts of anticipated extreme events and building resilience for future events (i.e., mainstreaming and/or customizing climate information for decision making)
2. Identifying and/or creating methodologies to determine the costs of impacts, the benefits of adaptation options and/or the costs of inaction (including the avoided costs of damage to enhance preparedness) to justify selection of adaptation measures for water resource planning.
3. Identifying innovations including socioeconomic and institutional mechanisms (e.g., utility involvement in novel configurations of land use, regional collaborations, etc.) that would increase adaptive capacity.
4. Understanding how best to communicate the impacts of climate and hydrologic changes on a municipality's water supply to those that may need this information for planning purposes (e.g., for public officials, citizens, etc.) .
5. Creating methods/tools/or other creative modes to communicate how to better communicate and incorporate climate science in comprehensive planning documents and activities (e.g., master, watershed, state plans, etc.).
6. Understanding of the socioeconomic impacts of the disruptions that result from weather and climate extremes (e.g., lack of water and need to import it to drought-stricken communities, large-scale fires that impact cities and towns particularly along the western portion of the country, nuisance flooding and impacts on water systems in coastal communities, flooding along rivers, streams, etc.). How specifically can purposeful coordination and planning reduce the costs of extremes for both public and private sectors?

Note that all projects will be one-year in length and should not exceed \$175,000 in total costs. Incorporating additional funds and in-kind services from other sources (e.g., agencies, foundations, etc.) is highly encouraged as it demonstrates shared commitment to the outcomes of this research.

Please specify which option(s) you are addressing on the cover page of your proposal. Theoretically, one could address all of these options, but a more refined proposal will most likely directly address one and no more than two options.

## **2) SARP: Coping with Drought in Support of the National Integrated Drought Information System (NIDIS)**

In FY18, the SARP portion of the Coping with Drought Initiative will focus on advancing NIDIS regional drought early warning systems through a better understanding of how to better provide early warning through enhanced language, metrics and joint decision spaces (e.g., calendars, etc.).

For these projects, we will be funding one-year (with total project costs not to exceed \$175,000) projects to address one of the following topics as how to:

- communicate science to diverse groups of people/organizations (e.g., utilities, governments, etc.) so that they can better understand and incorporate data and forecasts into their planning activities and respond appropriately
- understand how forecasts influence people/organizations' behaviors and actions so that the DEWS are better able to relay forecasts in a manner that is more meaningful and productive for decision makers
- develop decision calendars for businesses impacted by drought and improve connections between public investments in early warning and private investments that stimulate community resilience
- improve/enhance decision making through improved and varied communication techniques such as through the use of social media
- Understand how mutually beneficial and innovative collaborations and partnerships in a water scarce and drought stressed environment, among overlapping sectors of the economy (e.g., businesses, agriculture, energy), result in drought resilience.

## ***Additional Information for the SARP Programs***

### *Specifics about the Proposal*

Proposals that can show that they are building on what is already known from the published literature about the proposed topic prove that the PIs have a comprehension of the topic and that their proposed work will augment existing science and applications capacity. A fully-prepared investigation team would most likely, not require funding for a literature review. Information about current and previously funded projects are listed on the SARP and COCA websites.

### *Nature of Investigator Teams*

Multidisciplinary teams of investigators are often best suited for addressing the complex issues related to climate, society and enhanced adaptation through the use of science and technology. Previous successful projects/teams have integrated social with natural and/or physical science components to form a more comprehensive analysis of the dynamics of climate-human-natural interactions. The proposal should include an explanation of the roles of the investigators and how the team will interact and integrate the multiple components. Investigators who will not be requesting funds for salaries must also be listed, along with their estimated time of commitment.

### *Partners*

We encourage partnerships and collaborations between researchers and critical decision-making institutions in the location of study. Any in-kind time should be reported within the proposal. Letters of support, or commitment, from partners are encouraged to accompany the proposals.

### *Cost-sharing*

Cost, leveraging, and in-kind sharing of resources is encouraged and should be reported within the proposal.

### *Interaction with NOAA*

Applicants whose proposals are chosen for funding will be expected to undertake an ongoing dialogue with the NOAA Climate Program Office and program managers and will be expected to submit annual reports and respond to periodic data requests, including information about the climate information needs of decision makers involved in their projects.

