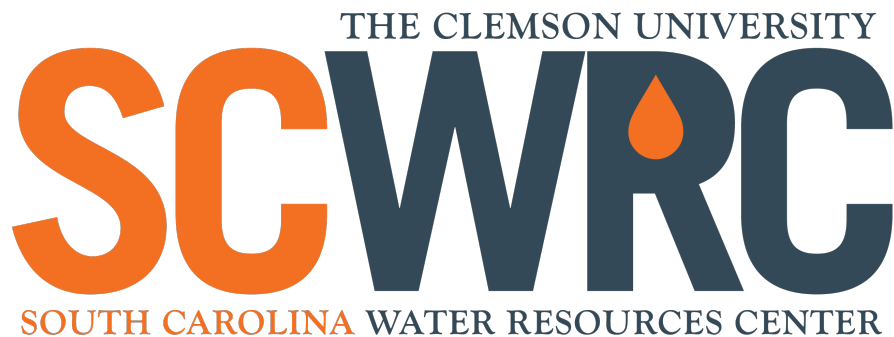


Request for Proposals Statewide Research Competition

Issued by the:
South Carolina Water Resources Center
at
Clemson University



Issue Date: February 1, 2023
Closing Date: March 31, 2023

PROPOSALS

SOUTH CAROLINA WATER RESOURCES CENTER COMPETITIVE GRANTS PROGRAM

I. INTRODUCTION

Section 104 of the Water Resources Research Act directs the U.S. Secretary of the Interior to administer program grants to Institutes and Centers established within the States and certain other similar jurisdictions for research, education, and training that will assist the Nation in augmenting its water-resources science and technology. Responsibility for administration of this program has been delegated to the United States Geological Survey (USGS). Research funds will be used to support water resources research that is of critical need to the state of South Carolina.

Research proposals submitted under this Request for Proposals may be for a one-year duration only.

II. PROGRAM OBJECTIVES

Section 104(b) of the Water Resources Research Act of 1984 requires the Institutes or Centers to:

- (1) Plan, conduct, or otherwise arrange for competent applied and peer reviewed research that fosters –
 - (A) improvements in water supply reliability;
 - (B) the exploration of new ideas that –
 - (i) address water problems; or
 - (ii) expand understanding of water and water-related phenomena;
 - (C) the entry of new research scientists, engineers, and technicians
 - (D) into water resources fields; and
 - (E) the dissemination of research results to water managers and the public.
- (2) Cooperate closely with other colleges and universities in the State that have demonstrated capabilities for research, information dissemination, and graduate training in order to develop a statewide program designed to resolve State and regional water and related problems.

The Act also requires each institute to:

- (3) Cooperate closely with other institutes and other organizations in the region to increase the effectiveness of the institutes and for the purpose of promoting regional coordination.”

The principal objectives of the state competitive grants program include the following:

- A.** Conduct research relative to important water resource problems of South Carolina.

- B. Promote the dissemination and application of the results of the research involving these problems.
- C. Assist in the training of scientists in relevant water resource fields.

III. SOUTH CAROLINA WATER RESOURCES CENTER RESEARCH PRIORITIES

Both the SCWRC and USGS have developed research priorities which must be considered in proposal development. The SCWRC research emphasis this year is to develop and maintain a watershed and reservoir studies program for the state of South Carolina. The following issues and research areas will be favored in the selection of research proposals:

Saluda, Broad and PeeDee River Basins: Any studies pertaining to issues of water quality, water management, water quantity, or aquatic and environmental protection in the Saluda, Broad and PeeDee River Basins are a critical priority of the SCWRC.

PFAS: Studies related to understanding the dynamics, fate, transport and impacts of per and polyfluoroalkyl substances in the surface waters and groundwater of South Carolina.

Watersheds: Watershed-wide studies and management strategies within watersheds that affect the rivers and streams of South Carolina.

Water Policy: Policy implications related to the social, cultural and physical characteristics of the major streams, reservoirs and their watersheds.

Water Management: Issues regarding reservoirs and major streams influenced by management decisions made in bordering states.

Water Supply: Surface and groundwater issues, sedimentation, non-point source pollution, water quality and quantity issues as they relate to the management of watersheds and basins.

GIS Technologies: The use of geographic information systems (GIS), remote sensing and image analysis and other innovative technologies involved in water resources research, technology transfer and decision-making.

Population and Demographics: Demographic issues, population growth and pressure on reservoirs, recreation and tourism issues, and economic development issues.

Emerging Problems: Studies not included in other priority areas but which are dedicated to solving emerging water problems which are identified as critical issues by key state water management officials in the region are included in this category.

IV. USGS RESEARCH PRIORITIES

The USGS has also established priority areas or needs for research within this competitive program. These areas are:

- **Water Quality:** Research needs in the water quality area involve information, information management, and the protection of surface and ground water from degradation. It includes industrial and municipal wastewater treatment and subsurface disposal of hazardous/toxic

wastes. In addition, problems from non-point sources of both municipal and agricultural sources including soil erosion, agricultural runoff, and pesticides pertain to this area. The development and improvement of monitoring techniques and analysis are also important, as well as water quality problems associated with eutrophication and weed control. This area also includes remediation research, drinking water quality, salt water intrusion, and near coastal and island water quality issues.

- Water Management: Research needs in the area of water management include legal, institutional, and financial arrangements. Specific items such as basin planning, water use control, transfers and/or diversions of water flood control, and drought planning are all priority issues. It also includes construction of facilities, financing and pricing, and water conservation and reuse. Management includes quality protection studies upgrading of supplies and state and/or federal and interstate interactions or compacts.

- Water Quantity: Research needs in the water quantity area include studies of the basin water cycle for an understanding of prediction. It also includes items of surface water flow, basin planning, low flow prediction (7Q10), flood control, water use, and water allocation. Included also are studies of ground water availability and the locations, movement, and volume of ground water. Also of importance are use and user impacts and surface and ground water interaction.

- Aquatic and Environmental Protection: Research needs in this area include studies of wetlands, swamps and marshes, fish and other biota, and the quality of life. It also includes studies of ecological balance, protection of endangered species, and studies of dredging and filling. This area also includes exotic species issues and ecosystem studies.

V. ELIGIBLE APPLICANTS

The South Carolina Water Resources Center welcomes original, innovative proposals on any targeted or base focus area or special call. We are especially interested in receiving proposals from new and/or underrepresented faculty and/or principal investigators.

The South Carolina Water Resources Center will only consider proposals from faculty members or affiliates at institutions of higher education in South Carolina. Applications **not** eligible include the following: 1) Applications for research on health effects involving human subjects; 2) Applications for research involving oceanography (estuarine research applications are acceptable), 3) Applications submitted by an Institute or Center that has not met reporting requirements on a previous award by the USGS, 4) Federal employees may, and are encouraged to, collaborate with college or university investigators in this program, 5) Federal employees may not serve as a principal investigator (PI), but may serve as a Co-PI, 6) Federal employees and agencies may not receive federal funds for any purpose under these awards, 7) Federal employees and agencies may not serve as a source of matching funds under these awards.

Excluded Parties: USGS conducts a review of the SAM.gov Exclusions database for all applicant entities and their key project personnel prior to award. USGS cannot award funds to entities or their key project personnel identified in the SAM.gov Exclusions database as ineligible, prohibited/restricted or otherwise excluded from receiving Federal contracts, certain subcontracts, and certain Federal assistance and benefits, as their ineligibility condition applies to this Federal program.

VI. CONFLICT OF INTEREST

An applicant may not permit any federal employee to use his or her position for a purpose that is or gives the appearance of being in conflict of interest, either by giving the applicant an unfair advantage or by a desire for private financial gain.

VII. APPLICATION DUE DATE

The SCWRC must submit its application to the USGS on or before May 2, 2023. Thus, as stated, **the deadline for submitting proposals to the SCWRC is March 31, 2023 at 4:30 p.m. (local time)**. Proposals received after this date and time will be returned to the principal investigator. Proposals must be sent electronically this year. The SCWRC will accept proposals e-mailed to:

jsallen@clermson.edu

VIII. FUNDS

- A. The total amount available in FY 2023 for the statewide competitive grant program is anticipated to be approximately \$90,000. ***Please see the note below.***

NOTE: The federal government's obligation under this program is contingent upon the availability of appropriated funds. The South Carolina Water Resources Center and Clemson University will not be held liable at any time if the federal government withholds funds for this program.

- B. Proposals should be for research and information transfer projects **12 months in duration** and shall not request Federal funding exceeding \$90,000. The SCWRC typically funds about three projects in the range of \$25,000 - \$35,000 each.
- C. Each applicant shall match each Federal dollar provided to support each proposed project with not less than one (1) non-federal dollars. If multiple projects are funded under a single program award, the required matching funds must be met on the total program award, not necessarily on each individual project. **However, higher consideration will be given to high quality proposals that include the one-to-one non-federal to federal match.**

IX. PROPOSAL REVIEW AND SELECTION PROCESS

1. Proposals will be sent out for peer review as well as to SCWRC's statewide advisory committee for evaluation. Results of this evaluation will be forwarded to the director of the SCWRC. **Please submit names and contact information of at least three potential reviewers for your content area with your proposal.**
2. Up to six proposals may be sent out for technical evaluation. Those performing the

technical evaluation must sign a statement that serving as a reviewer will not constitute a conflict of interest. A minimum of two written technical evaluations will be attached to each proposal.

3. Based on all of these evaluations and availability of funds, the director of the SCWRC will select the top proposal(s) to be submitted to the USGS.
4. The criteria for the technical evaluation will be as follows:

Technical/Scientific Merit: **30%**
Does the proposal have potential to expand the fundamental knowledge in its specific area? Is it scientifically and technically sound? Are the investigators cognizant of past work? Is the proposal well written, organized, and complete?

Relevance to SCWRC and USGS Research Priorities **25%**
Does the proposal directly address research topics of significance to our state? If so, does it deal with a subject of particularly high importance to present and future water resources management programs? Does the proposal itself do a convincing job of describing the relevance and importance of the proposed research?

Feasibility: **25%**
Does the proposal demonstrate substantive and important collaboration among investigators? Are the objectives, methodologies, designs, and techniques adequate and completely described? What is the likelihood of success given the methods and time frame proposed? Is the budget reasonable and adequate for the work proposed? Will the expected results lend themselves to a more comprehensive proposal with additional funding?

Competence of the PI: **10%**
Are the qualifications of the investigators commensurate with the proposed research? Are the facilities and equipment adequate? If appropriate, have external cooperators been identified? Has the nature of such cooperation been described? Are the roles and advantages of involving the different investigators clearly described?

Students' Educational Opportunities: **5%**
Does the proposal contain the opportunity for student participation (graduate and/or undergraduate)?

Contribution to Water Sciences and/or Information Transfer: **5%**
Does the proposal actively address the eventual transfer of results to user groups? Does it actively address the impact the results could have?

5. Upon completion of the advisory board review and technical evaluation, the director of the SCWRC will submit a list of the proposals recommended for funding to the USGS, the total value meeting their criteria for funds available.

The tentative research competition schedule is:

February 1, 2023: RFP made available
March 31, 2023: Proposals due to the SCWRC.

April 3, 2023: Proposals sent to advisory committee.
April 3, 2023: Proposals sent for technical review.
May 2, 2023: Proposal package submitted to USGS.
September 1, 2023 Anticipated project startup.

As stated previously, proposals may be for a one-year duration only. **Those with a duration greater than one year will not be considered for funding. The SCWRC encourages investigators to look at other funding sources for multi-year projects.**

X. APPLICATION REQUIREMENTS

- A. The SCWRC (and applicants) shall have its matching funds (\$1.00 Non-Federal for every \$1.00 Federal requested) committed at time of application submittal to the USGS.** Commitment means that the application shall contain an institutional cost-sharing agreement (letter) signed by an official authorized to commit the applicant to all or part of the matching share or a third party, in-kind contribution signed by an official authorized to commit the third party.
- B.** Matching funds shall be obligated during the period of performance.
- C.** The matching requirement should be met during the 12-month budget period.
- D.** Matching funds may contain indirect costs. Federal funds shall not be used to pay indirect costs. The applicant's negotiated indirect cost rate (NICR) may be applied to both qualifying federal and non-federal direct costs, and the result used to satisfy part of the matching requirement under the non-federal share. The NICR shall not be applied to tuition and equipment costs.
- E.** The length of the project period shall not exceed 1 year.
- F.** SCWRC may consider research proposals only from faculty members or affiliates at institutions of higher education.

Investigators shall submit their proposals (in Word or PDF formats) electronically to the SC Water Resources Center e-mail address shown below:

jsallen@clermson.edu

It will be assumed that all proposals submitted have the proper signatures from their respective institutions. Signature pages can be surface mailed to the following address:

SC Water Resources Center
Clemson University
PO Box 709
509 Westinghouse Rd.
Pendleton, SC 29670
phone: 864-646-2145
<https://www.clemson.edu/public/water/scwater/index.html>

XI. RESEARCH PROPOSAL CONTENTS

A. Application for Federal Assistance, SF 424. Note: Not required for Clemson University proposals. SCWRC will submit the final SF 424. Proposals from investigators from other universities must file a separate SF 424. Use the SF 424 as page 1 of the application. The SF 424 shall be signed by an authorized representative of the applicant.

1. **Direct Costs.** Those costs that can be identified with a particular research project, an instructional activity, or any other institutional activity that can be directly assigned to such activities relatively easily with a high degree of accuracy.
2. **Indirect Costs (non-Federal share only).** Those costs that have been incurred for common or joint objectives and therefore cannot be identified with a particular research project, an instructional activity, or any other institutional activity. At educational institutions such costs normally are classified under the following categories: 1) general administration and general expenses; 2) research administration expenses; 3) operation and maintenance expenses; 4) library expenses; and 5) departmental administration expenses.

B. Research Proposals. Proposals shall consist of the following 19 elements. The first 12 elements listed below shall not exceed 4 pages. Begin a new page with element 13 (Elements 13-19 shall not exceed 10 single spaced pages).

1. **Title.** Concise but descriptive
2. **Project Type.** Research, Information Transfer, Information Management System, Education, or Other (please specify).
3. **Focus Categories.** List a maximum of three focus categories, with the most preferred focus category first. A list of focus categories is provided in Attachment A. Enter the abbreviations in capital letters and separate them by commas.
4. **Research Category.** Choose from the following the one category that most closely applies: Water Scarcity and Availability, Water Hazards and Climate Variability, Water Quality, Water Policy, Planning, and Socioeconomics, Watershed and Ecosystem Function, Water Technology and Innovation, or Workforce Development and Water Literacy.
5. **Keywords.** List descriptor words, separated by commas. Make up your own or select words from the attached (A) list of keywords.
6. **Start Date.** Use the actual beginning date for project.
7. **End Date.** Estimated ending date for project.
8. **Principal investigator(s)** name(s), academic rank, university, address, phone number, and e-mail address.
9. **Congressional district** of university where research is to be conducted.
10. **Abstract (300 word)** Provide a brief description of the problem, methods, and objectives.
11. **Statement of regional or State water problem.** Include an explanation of the need for the project, who wants it, and why.
12. **Statement of results or benefits.** Specify the type of information that is to be gained and how it will be used.
13. **Nature, scope, and objectives of the project,** including a timeline of activities.

14. **Methods, procedures, and facilities.** Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives.
15. **Related research. (Research projects only)** Provide context for the proposed work in terms of previous and ongoing research, including citations.
16. **Training potential.** Estimate the number of graduate and undergraduate students, by degree level, who are expected to receive training in the project.
17. **Budget Breakdown, Justification, and Summary** (see Detailed Budget Narrative instructions below)
18. **Investigator's qualifications.** Include short (no more than 2 pages) biographical sketches of the principal investigator(s).
19. **List of three potential reviewers.** Please attach a list of three potential professional reviewers with appropriate contact information, including email.

Detailed Budget Narrative

The project budget shall include detailed information on all cost categories and must clearly identify all estimated project costs. Unit costs shall be provided for all budget items including the cost of work to be provided by contractors or sub-recipients. In addition, applicants shall include a narrative description of the items included in the project budget, including the value of in-kind contributions of goods and services provided to complete the project when cost share is identified to be included (reference section C of this announcement). Cost categories can include, but are not limited to, those costs items included on the SF424A or SF424C.

1. Budget Breakdown, EXCEL fillable form that may be downloaded from <http://water.usgs.gov/wrri/WRRI-104b-Budget.zip>
2. Budget Justification, fillable PDF form that may be downloaded from <http://water.usgs.gov/wrri/WRRI-104b-Budget.zip>
3. Budget Summary. Automatically calculated using the budget breakdown form.

Link may have to be copied and pasted. Examples of both successful and rejected budgets are included. An inaccurate or incomplete budget will delay award.

Data Management Plan Requirements

Proposals submitted to USGS must include a supplementary document of no more than four pages labeled "Data Management Plan" (DMP). This supplementary document should describe how the proposal will conform to USGS policy on the dissemination and sharing of research results and associated data. A valid DMP may include only the statement that no detailed plan is needed (e.g. "No data are expected to be produced from this project"), as long as the statement is accompanied by a clear justification. This supplementary document may include:

- the types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project;
- the standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies);
- policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;
- provisions for re-use, re-distribution, and the production of derivatives; and
- plans for archiving data, samples, and other research products, and for preservation of free public access to them.

Additional guidance on data management plans is available from the USGS Data Management web site here: <https://www.usgs.gov/products/data-and-tools/data-management/data-management-plans> Simultaneously submitted collaborative proposals and proposals that include subawards are a single unified project and should include only one supplemental combined DMP by the lead PI that also addresses all subaward data management needs, regardless of the number of non-lead collaborative proposals or subawards included.

Conflict of Interest Disclosure Per the Financial Assistance Interior Regulation (FAIR), [2 CFR §1402.112](#), applicants must state in their application if any actual or potential conflict of interest exists at the time of submission.

(a) *Applicability.*

(1) This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.

(2) In the procurement of supplies, equipment, construction, and services by recipients and by subrecipients, the conflict of interest provisions in 2 CFR 200.318 apply.

(b) *Notification.*

(1) Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass-through entity in accordance with 2 CFR 200.112.

(2) Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The recipient is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by subrecipients.

(c) *Restrictions on lobbying.* Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR part 18 and 31 U.S.C. 1352.

(d) *Review procedures.* The Financial Assistance Officer will examine each conflict of interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement, and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it.

(e) *Enforcement.* Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR 200.338, Remedies for noncompliance, including suspension or debarment (see also 2 CFR part 180).

Attachment A

FOCUS CATEGORIES

ACID DEPOSITION	ACD
AGRICULTURE	AG
CLIMATOLOGICAL PROCESSES	CP
CONSERVATION	COV
DROUGHT	DROU
ECOLOGY	ECL
ECONOMICS	ECON
EDUCATION	EDU
FLOODS	FL
FLOOD MODELING	FLMOD
GEOMORPHOLOGICAL & GEOCHEMICAL PROCESSES	G&G
GROUND WATER	GW
HYDRO GEOCHEMISTRY	HYDGEO
HYDROLOGY	HYDROL
IRRIGATION	IG
LAW, INSTITUTIONS, & POLICY MANAGEMENT & PLANNING	LIP
METHODS	M&P
MODELS	MET
NITRATE CONTAMINATION	MOD
NONPOINT POLLUTION	NC
NUTRIENTS	NPP
POLYFLUOROALKYL SUBSTANCES	NU
RADIOACTIVE SUBSTANCES	PFAS
RECREATION	RAD
SEDIMENTS	REC
SOLUTE TRANSPORT	SED
SURFACE WATER	ST
TOXIC SUBSTANCES	SW
TREATMENT	TS
WASTEWATER	TRT
WATER QUALITY	WW
WATER QUANTITY	WQL
WATER SUPPLY	WQN
WATER USE	WS
WETLANDS	WU
	WL

Attachment B

TRAINING ACCOMPLISHMENTS

Academic I Level

<u>FIELD OF STUDY</u>	<u>Undergraduate</u>	<u>Master's Degree</u>	<u>Ph.D. Degree</u>	<u>Post Ph.D.</u>	<u>Total</u>
Chemistry					
<u>Engineering</u>					
Agricultural					
Civil					
Environmental					
Soils					
System					
Other*					
Geology					
Hydrology					
Agronomy					
Biology					
Ecology					
Fisheries, Wildlife and Forestry					
Computer Science					
Economics					
Geography					
Law					
Resources Planning					
Other (specify)					
TOTAL					

*Less than 5 students in any one field of study.

