MEMORANDUM

MISSISSIPPI STATE UNIVERSITY
MISSISSIPPI WATER RESOURCES RESEARCH INSTITUTE

TO: Deans, Directors, and Department Heads
Principal Investigators and Other Researchers
Mississippi Water Resources Research Institute Advisory Council

FROM: L. Jason Krutz, Director

SUBJECT: 104b Water Resources Research Grant Program Announcement

DATE: October 7, 2019

104b WATER RESOURCES RESEARCH GRANT PROGRAM ANNOUNCEMENT FY 2020

The Mississippi Water Resources Research Institute (MWRRI) invites Letters of Interest for water research projects from faculty and staff of any Mississippi research university for participation in its 2020 104b Water Research Grant Program.

Criteria to follow with your LOI submission:

- Rather than developing a full proposal initially, we are requesting a 2-page Letter of Interest (LOI). Guidance for the LOI can be found later in this announcement.
- To better support student involvement and provide adequate time for needed research, multiple-year projects will be considered, as follows (based upon continuing USGS funding availability):
  - Participating M.S. students: up to 2 years of funding for a selected project
  - Participating Ph.D. students: up to 3 years of funding for a selected project
- Rather than MWRRI requesting proposals on specific research topics as we have done over the past several years, we are asking for researchers/teams to identify and describe a specific applied research interest within the areas of water quality, water quantity, and/or ecology as the focus of their LOI.
- MWRRI strongly encourages applicants to collaborate with local, state, and federal agencies on applied research needs.
- It is anticipated that two projects will be awarded through the 2020 program. Approximately $93,000 is typically available yearly for project support.
- The Water Resources Research Act of 1984 requires that federal funds (USGS) be matched by at least two non-federal dollars for each federal dollar.
- Proposal funding is contingent upon funds being made available by the USGS.

The Institute is issuing its request for LOIs for the research year beginning 2020. Please email one electronic copy of the LOI (a single file in WORD format) to Jessie Schmidt at jessie.schmidt@msstate.edu to be received by 5:00 p.m. October 21, 2019.

Note: Federal support for the selected proposals is dependent upon availability of USGS funding.

MISSISSIPPI STATE UNIVERSITY
WATER RESOURCES RESEARCH INSTITUTE

INSTRUCTIONS FOR THE PREPARATION OF LETTERS OF INTEREST AND INVITED PROPOSALS FOR THE FY2020 104b WATER RESOURCES RESEARCH PROGRAM

Pre-Proposal deadline is 5:00 PM, October 21, 2019

This year's RFP is being issued before we receive formal notification of funding from the U.S. Geological Survey (USGS) headquarters. While we do not anticipate any significant changes to the program's terms, conditions, deadlines or availability of funds, awards will be contingent upon available funding. You will be notified immediately of any significant changes.

Timeline. Process activities and timeline for the 2020 104b Water Research Grant Program are identified below:

Date	Activity
October 7, 2019	Request for LOIs released
October 21, 2019	LOIs due in MWRRI office
October 22, 2019	MWRRI staff review of LOIs; selection and notification by MWRRI Director of projects desiring full proposal development
November 11, 2019	Submission of full proposal
November 14, 2019	Discussion of proposals with MWRRI Advisory Board
November 25, 2019	Final selection and notification by MWRRI Director
January 16, 2020	Final MWRRI Program package submitted to USGS
March 1, 2020	Projects begin (assuming approved federal budget)

Letters of Interest must be submitted to MWRRI by 5:00 PM, Central Time, October 15, 2019 and invited full proposals must be submitted to MWRRI not later than 5:00 PM Central Time, November 15, 2019. Funds have not yet been appropriated for this program for FY 2020. MWRRI's obligation under this program is contingent upon the availability of funds.

Special Provisions

The following special provisions are issued by the USGS to guide the MWRRI in preparing the annual program package. They are included here for your information in developing your proposal and are subject to revisions by the USGS.

1. Performance Period: The period of performance of the project will be March 1, 2020 through February 28, 2021, unless a multi-year grant is awarded. Short (1-2 pages) quarterly reports are required, and PIs will submit draft copies of interim/completion reports which will be compiled and uploaded for required reports to USGS.

Note: This is the fifth year of the five-year funding cycle. There will be no extensions allowed. If you are awarded for this year, you will still receive one or two more years funding to graduate students. These awards will receive a new fund number. You will still need to submit another proposal for follow-up years.

2. Participation Requirement
   (a) Institutes may only consider project proposals from faculty members or affiliates at institutions of higher learning in the state.

(b) Institutes shall not submit proposals from any investigator who has not met reporting requirements for projects funded by a prior formula grant administered by the Department of the Interior.

Non-Federal Funds

(a) The non-federal portion must be $2.00 for every $1.00 federal.

(b) For third-party cost-share, one or more letters of commitment from cooperating state, regional or local businesses, agencies, or non-profit organizations are required.

4. Charges Allowable to Federal Funds

(a) Costs will be allowed in accordance with OMB Circular A-21, revised, "Cost Principles for Educational Institutions," on file in your university's contract office or available online at whitehouse.gov/omb/circulars.

(b) The portion of benefits paid to individuals cannot exceed the proportion of their salaries paid from the grant.

(c) Indirect costs may not be charged on the federal funds provided by the Department of Interior; however, they are chargeable to the total direct costs and should be shown in the non-federal column. The Geological Survey will accept indirect cost rates approved by the cognizant agency in accordance with OMB Circular A-88.

Note: A copy of the approved rate agreement or other approving documentation must be attached to proposals from universities other than MSU.

5. Program Funds Management: Funds available to the Institute will be applied to projects where possible. Cost share matches are the responsibility of each submitter.

Letters of Interest Format Instructions

Letters of Interest should use the following format, and be no longer than two pages:

1. **Title**:

2. **Proposed Start Date**:

3. **Proposed Completion Date**:

4. **Funding Level (and # of years requested)**:
   To better support student involvement and provide adequate time for needed research, multiple-year projects will be considered, as follows (based upon continuing USGS funding availability):
   - Participating M.S. students: up to 2 years of funding for a selected project
   - Participating Ph.D. students: up to 3 years of funding for a selected project

5. **Federal Funds Requested**:

6. **Proposed Cost Sharing**: [Must equal at least a 1:2 match]

7. **Statement of Relevance and Importance:**
   The statement of relevance and importance is a critical component of the preproposal review process. Describe the water problem or issue of a regional or interstate nature of concern to more than one State and directly addresses a research priority described in Section III. Document the magnitude of the situation and relevance of the issue/problem to state, regional and national issues. Why is this project/topic innovative and important? Does the Letter of Interest include

collaboration with state, federal, and/or non-governmental organizations?

8. **Research Goals and Objectives**:
   Describe the goals (desired results) and objectives of the proposed work. State objectives in a way that enables measurable comparison to expected project results.

9. **Research Approach**:
   Describe the project design and explain how the work will accomplish the stated objectives.

10. **Anticipated Results and Benefits**:
    Describe the expected outcomes of the project. What new solutions and/or opportunities will be available to the hydrologic scientific community and/or management agencies? What impact will successful completion of this project have on the state, region or nation?

11. **Information Transfer and Education**:
    Describe how results will be communicated to the relevant user groups and how it will deliver the potential impacts of the research proposed.

12. **Principal Investigator**:

13. **Affiliation**:

14. **Co-investigators (name/position/affiliation)**:

15. **Principal Investigator Signature**: **Date**:

16. **Phone Number**:

17. **Email Address**:

Invited Full Proposal Format Instructions

The invited full proposal should consist of the following 20 elements. The synopsis (first 11 elements) cannot exceed 2 pages. Begin a new page with element 12 (Nature, scope, and objectives of the research). Submission of MWRRI's standard budget format is required as a component of each invited proposal. Specific budget details and forms will be sent to all invitees promptly upon notification by the MWRRI Director for a request for a full proposal.

1. **Title**. Concise but descriptive.

2. **Project Type**. Choose from the following: Research, Information Transfer, Information Management System, Education, or Other (please specify).

3. **Focus Categories**. For 2020, three broad focus categories have been established – water quality, water quantity, and ecosystems. If your project has a singular focus on one of the three, list it. If your project has more than a singular focus, list the other focus category(ies), with the most relevant focus category first. (p a g e 9)

4. **Research Category**. Choose from the following selections the one category that most closely applies: Social Sciences, Ground-water Flow and Transport, Water Quality, Biological Sciences, Engineering, or Climate and Hydrologic Processes.

5 . **Keywords**. List descriptor words, separated by commas. (p a g e 9)

6. **Start Date**. Enter the actual beginning date for the project on or after March 1, 2020.

7. **End Date**. Enter the estimated end date for the project on or before February 28, 2021. unless a multi-year project is awarded.

8. **Budget Breakdown**. (see attached sample budget format to use)
   - Federal funds requested
   - Non-Federal (matching) funds pledged and cooperator contribution.
   - Please include a separate budget and justification along with the cooperator contribution letter at the end of the proposal submission. Include a budget justification for salaries (full-time and student), fringe benefits (full-time and student), tuition, travel, supplies (commodities), services (contractuals), equipment, and indirect costs.

9. **Principal investigator(s)**. Provide name, academic rank, university, email address and phone number of the principal investigators. Cooperator (please attach an official letter of cooperation including a firm commitment to contribute non-federal funds or in-kind support for the project).

10. **Congressional District** of the university where the work is to be conducted.

11. **Abstract**. Provide a brief (one-page) description of the problem, methods, and objectives.

    Note: Begin a new page with Item 12. Items 12-19 shall not exceed 10 single-spaced pages, 12 point font, exclusive of resumes.)

12. **Title**. Please use the same title as was entered in #1.

13. **Statement** (2 paragraphs maximum) **of regional or State critical water problem**. Include an explanation of the need for the project research, who wants it, and why. Specify the priorities addressed.

14. **Statement** (2 paragraphs maximum) **of the results, benefits, and/or information expected to be gained** during the performance period and by the end of the project, if of longer duration, and how they will be used. Discuss **manner and amount parties will cooperate**.

15. **Nature, scope, and objectives** of the project, including a timeline of activities.

16. **Methods, procedures, and facilities**. Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives.

17. **Related research**. (research projects only) Show by literature and communication citations the similarities and differences of the proposed project to completed or on-going work on the same topic.

18. **Training potential.** Estimate the number and class rank of graduate and undergraduate students, by degree, who are expected to receive training during the project.

19. **Investigator's qualifications**. Include resume(s) of the principal investigator(s). No resume shall exceed two pages or list more than 15 pertinent publications.

20. Attach **Budget Breakdown** (see example for budget preparation on page 10), Budget Justification, Cooperator letter(s), and Information Transfer Plan.

The Information Transfer Plan (up to two pages) should discuss plans for disseminating information on the results of the research and promoting their application. Each plan shall:

1. Define the subject matter and the problems to be addressed.
2. Identify the target audience.
3. Indicate the strategies to be employed; e.g. workshops, publications.
4. Identify the cooperators (e.g., Cooperative Extension service, external agencies).

A separate supplementary document of no more than two pages labeled "Data management Plan" (DMP) must be included. This supplementary document should describe how the proposal will confirm 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 material 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 pro divisions 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 website here: http://www.usgs.gov/datamanagement/plan/dmplans.php

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.

Letter of Interest and Invited Proposal Review Considerations

Letter of Interest. Each LOI will need to be written following the previously-described format. LOIs which meet the requirements of this Announcement will be evaluated by MWRRI staff with decisions for inviting full proposals made by the MWRRI Director. LOIs will be reviewed according to the following considerations:

25 Points: Relevance and Importance. - The extent to which: (1) the preproposal focuses on a water problem or issue of a regional or interstate nature of concern to more than one State and directly addresses a research priority described in this RFP (Section III); (2) the subject is of particularly high importance to present and future water resources management programs; and
(3) the preproposal includes collaboration with the USGS if appropriate.

25 Points: Scientific Merit. – The extent to which the preproposal (1) has potential to expand fundamental knowledge in its specific area(s); (2) is scientifically sound; and (3) demonstrates cognizance of past work.

25 Points: Expected Results and Benefits. – The extent to which the preproposal describes the how the potential outcomes and the potential realistic impacts of the proposed work.

15 Points: Information Transfer. – The extent the preproposal actively addresses the eventual transfer of results to user groups and whether it actively addresses the impact that the results could have?

10 Points: Training. – The extent to which the preproposal has a strong educational component, provides for student support, and engages a principal investigator near the beginning of his or her career?

Invited Full Proposals. Each invited full proposal will need to be written following the guidance in this RFP. Full proposals which meet the requirements of this Announcement will be reviewed by MWRRI's Advisory Board with emphasis placed on the following considerations:

20 Points: Relevance and Importance. - The statement of relevance and importance is a critical component of the proposal review process. Describe the water problem or issue of a regional or interstate nature of concern to more than one State and directly addresses a research priority described in Section III. Document the magnitude of the situation and relevance of the issue/problem to state, regional and national issues. Why is this project/topic innovative and important? Does the proposal include collaboration with the USGS if appropriate?

20 Points: Scientific Merit. – The extent to which the proposal (1) has potential to expand fundamental knowledge through the stated goals and objectives; (2) is scientifically sound through the description of the research objectives; and (3) demonstrates cognizance of past work.

20 Points: Expected Results and Benefits. – The extent to which the proposal describes the how the potential outcomes and the potential realistic impacts of the proposed work.

10 Points: Information Transfer. – The extent the proposal actively addresses the eventual transfer of results to user groups how it will deliver the potential impacts of the research proposed.

10 Points: Training. – The extent to which the proposal has a strong educational component, provides for student support, and engages a principal investigator near the beginning of his or her career?

10 Points: Qualifications of the Investigators. The extent to which the qualifications of the investigators are commensurate with the proposed research, and the adequacy of the facilities and equipment.

10 Points: Budget. The extent to which the budget is reasonable and adequate for the work proposed. Note: the principal investigator's salary is an acceptable budget item, but the federal share of the salary should not exceed one or two months per year.

Budget. Submission of MWRRI's standard budget format is required as a component of each invited proposal. Specific details and forms will be sent to all invitees promptly upon notification by the MWRRI Director for a request for a full proposal.

USGS/NIWR 104g Water Research Grant Program

Another opportunity to secure water research funding through MWRRI is the nationally-competitive RFP released cooperatively by the U.S. Geological Survey (USGS) and the National Institutes for Water Resources (NIWR). Recent research topics include improving and enhancing the nation's water supply, including evaluation of innovative approaches to water treatment, infrastructure design, retrofitting, maintenance, management, and replacement; exploration and advancement of our understanding of changes in the quantity and quality of water resources in response to a changing climate, population shifts, and land use changes; development of methods for better estimation of water supply, both surface and groundwater, including estimation of the physical supply and of the economic supply of water; development and

evaluation of processes and governance mechanisms for integrated surface/ground water management; and the evaluation and assessment of conservation practices.

Typically, proposals may be for projects of 1 to 3 years in duration and may request up to $250,000 in federal funds. Proposals involving substantial collaboration between the USGS and university scientists are encouraged. Successful applicants must match each dollar of the federal grant with one dollar from non-federal sources. A request for pre-proposals is usually released in December of each year with pre-proposals due by mid-February of the following year. Full proposals of those selected pre-proposals are usually due during that June.

Any investigator at an accredited institution of higher learning in the United States is eligible to apply for a grant through a Water Research Institute or Center established under the provisions of the Water Resources Research Act of 1984, as amended (http://water.usgs.gov/wrri/institutes.html). For more information, on the 104g Program please contact Jessie Schmidt at jessie.schmidt@msstate.edu.

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Key Words

Climate – historic record of climatic conditions; comparison of past climate trends to variations in groundwater and surface water demands; projections of future climatic conditions.

Groundwater – innovative approaches to estimate aquifer recharge; spatial and depth variabilities of aquifer transmissivities and other characteristics.

Surface Water – performance and effectiveness of innovative and established nutrient, sediment, bacteria, and storm water management methodologies, and small community wastewater treatment technologies; linkages between N and P concentrations and ecosystem response variables; analysis of point source nutrient loading trends.

Water Reuse and Conservation – innovative wastewater treatment technologies and reuse applications; effective irrigation efficiency and conservation methods; innovative irrigation runoff reclamation and reuse methods.

Protection of Source Water – delineation of source water protection areas, identification of potential sources of contamination, assessment of threats, and contingency planning.

Social Science – stakeholder perceptions and beliefs at the individual, local and regional levels related to water resources issues; social indicators to identify the potential for and evaluate the success of watershed management projects and to build effective education and outreach.

Modeling and Tool Development – prediction of future impacts of climatologic change, water use changes, social drivers, and proposed infrastructure on water resources.

Focus Categories

Acid deposition	ACD
Agriculture	AG
Climatological processes	CP
Conservation	COV
Drought	DROU
Ecology	ECL
Economics	ECON
Education	EDU
Floods	FL
Geomorphological processes	GEOMOR
Geochemical processes	GEOCHE
Groundwater	GW
Hydrogeochemistry	HYDGEO
Hydrology	HYDROL
Invasive species	INV
Irrigation	IG
Law, institutions, and policy	LIP
Management and planning	M&P
Methods	MET
Models	MOD
Nitrate contamination	NC
Non point pollution	NPP
Nutrients	NU
Radioactive substances	RAD
Recreation	REC
Sediments	SED
Solute transport	ST
Surface water	SW
Toxic substances	TS
Treatment	TRT
Wastewater	WW
Water quality	WQL
Water quantity	WQN
Water supply	WS
Water use	WU
Wetlands	WL

Project Type

Research

Information Transfer

Information Management System

Education

Other (please specify)

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Budget Form Example (For help in preparation only. Many other combinations are possible)

Project Title: **Example Project Using MSU Rates**

Cost Category	Federal Contribution	Non-Federal Contribution (University)	Non-Federal Contribution (3rd Party)	Total
1. Salaries and Wages	$	$	$	$
- Professor				
-				
- Grad Student Scholar				
- Undergrad Student				
Total Salaries and Wages				
2. Fringe Benefits				
*- full time employees 37.65%				
*- students .23% ** (insurance) (8.0%) *- tuition $978/mo (4 mo) **				
3. Supplies*				
4. Equipment (>$5000)				
5. XYZ Corporation Sponsor				
6. Travel				
7. Other direct costs				
8. Total direct costs				
9a. Indirect costs on federal share @ 45.5% (less equipment + tuition)	xxxxxxx			
9b. Indirect costs on state/WRRI share @ 45.5%	XXXXXXX			
10. Total estimated costs				
Total Costs at Mississippi State on which the Institute or Center is located	**$**	**$**	**$**	**$**
Total Costs at other University Campus Name of University	**$**	**$**	**$**	**$**

* **Equipment costs greater than $500 and less than $5,000 are charged to supplies.**

**** Fringe and tuition follow salary**

Finally, a breakdown of the budgeted funds shown in elements 5 and 6 should be on a separate page.

At the present time, the bottom line (10) must show a total of at least $2.00 match for $1.00 federal.

Estimated budget: **Year 2: _____** **Year 3: _____**

Negotiated indirect cost rate agreement. Attach a copy of the approved negotiated indirect cost rate agreement if you are not at Mississippi State University.