

Texas Water Resources Institute

Graduate Student Research Programs

Fiscal Year 2023 Request for Proposals

Application Deadline: March 27, 2022, by 11:59 PM CST

Mills Scholarship Award: \$7,500
Nonfederal Match Required: None
Total Awards Planned: 4-6

USGS Federal Award: \$7,500
Nonfederal Match Required: 1:1
Total Awards Planned: 2-4

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The Texas Water Resources Institute (TWRI) is happy to announce its call for proposals for students conducting water resources research. TWRI has funds available for graduate students at Texas universities through two programs, the [TWRI Mills Scholarship Program](#) (available to Texas A&M College Station, Galveston and Qatar only) and the [U.S. Geological Survey Graduate Research Program](#) (available to all Texas universities). Proposals are due March 27, 2022, by 11:59 p.m.

TWRI anticipates funding 6 to 10 graduate research projects of up to \$7,500 each in the area of water resources and hydrology that have the potential to help Texas solve future water problems. We expect the funds will become available no sooner than September 1, 2022, and the period of performance ending August 31, 2022. Additionally, those students selected for the Mills Scholarship will also be eligible for an out-of-state tuition waiver.

Eligibility

- Applications from graduate students doing water resources-related research in Texas are encouraged. This program can support either ongoing or new studies.
- Proposals should be developed by the graduate student applying for the project in collaboration with his or her faculty advisor. Students with junior faculty thesis and dissertation advisors are highly encouraged to apply for these grants.
- Students must be enrolled at least half-time.
- Citizenship:
 - USGS: students do not have to be U.S. citizens or have permanent visa status
 - Mills: reserved to students who are citizens of the United States or have permanent immigration visas
- Graduate students who previously received a TWRI USGS competitive grant or a Mills Scholarship are not eligible for that same grant program but can be selected for the program not previously received. (Example: If student has received a Mills Scholarship, they are still eligible for a USGS grant, and vice versa.) Please note in the proposal if you have previously received funds from one of these programs.

TWRI Research Priorities

Proposed research can deal with a wide range of water resources topics. However, priority will be given to research addressing the science, technology, policy or socio-economics of:

- developing innovative water management strategies to aid in implementing the Texas State Water Plan that address agricultural and urban water conservation, identifying new surface water and groundwater sources, desalination, reuse (potable and non-potable), and aquifer storage and recovery;
- evaluating and understanding the implications of water availability and quality on human health outcomes;
- addressing major water quality impairments in Texas, which includes bacteria, dissolved oxygen, mercury, and other hazardous contaminants;
- understanding the vulnerability of groundwater resources (both quantity and quality) from both a management and policy perspective;
- understanding impacts of climate variability, climate change and drought on Texas water resources, along with measures to adapt and mitigate these impacts;
- understanding the long-term effects of catastrophic flooding events on surface water and groundwater resources, along with measures to adapt to or mitigate these effects;
- exploring new ideas that address or expand our understanding of water problems;
- evaluating abundance, locations, and persistence of legacy nutrients;

- evaluating trends of integrated processes, and how do changes in one aspect of water quantity and availability affect other long-term aspects; and
- evaluating risks of water conflict: drivers, thresholds, sector/community balance, stakeholder actions, agent-based modeling, relevant laws and regulations, and adaptive management.

Timeline

Start dates for those selected for the Mills Scholarship may be applied as early as the fall 2022 semester. Those selected for the USGS grant will begin no earlier than September 1, 2022. The maximum project timeline for each is one year, ending August 31, 2023, but projects may be completed with funds being spent down as needed earlier than the end date.

Budget

The TWRI Mills Scholarship Program funds are strictly for tuition and fees only, while the USGS Program allows for a categorical budget (see template below), if needed, including tuition. If you have a specific budgetary need one way or the other, please note that in your application, and we will take that into consideration when determining the program fit.

Other budgetary notes:

- A maximum of **\$7,500** may be requested.
- A 1:1 non-federal match is required for USGS. (Example: If the full \$7,500 is requested, you need \$7,500 in non-federal match; if \$1,500 is requested, you need \$1,500 in match.) In addition, a signed commitment letter from your graduate committee chair is required.
- The 1:1 non-federal match can include: salaries and fringe benefits of faculty advisors and graduate students funded by non-federal dollars; in-kind services; equipment or lab use; supplies furnished by student's department; and graduate teaching or research assistantships.
- If within Texas A&M, if you are budgeting for tuition, a portion of the student's salary and fringe must also be budgeted per TAMUS requirements.
- Mills Scholarships do not require match.
- Indirect costs (IDC) may not be charged as part of the requested funds, but IDC and unrecovered IDC can be used toward to 1:1 non-federal match requirement. IDC used for match must be applied to modified total direct costs, thus IDC **cannot** be applied to tuition and equipment costs.
- If the student is unable to complete their project as proposed and approved or if all funds are not used within the one-year timeline, the funds will be returned to TWRI.

Reporting Requirements

Students will be required to submit a progress/final report at the end of their funding cycle and provide an oral overview of their report (specific details of the oral report to be discussed and agreed upon between recipients and TWRI). The progress/final report may include the student's thesis or dissertation or a summary of it, a manuscript suitable for publication as a TWRI technical report, or a journal article. In addition, those receiving funds must work with the TWRI communications team to publicize their results in the form of photo(s) and a story. Acknowledgement must be given to TWRI's program in any resulting publications for efforts partially funded by these funds. In addition, the selected students are responsible for alerting TWRI of any new contact information after the award/graduation to be contacted annually for updates for five years following the funding for our required reporting back to USGS.

Evaluation and Ranking Criteria

Are TWRI Research Priorities being addressed in the proposed research?

Will it help better manage Texas water resources and/or solve future water problems?

Will it advance existing science, or is it new and innovative?

Does the work proposed seem doable? Can the research be accomplished?

Applications that do not adhere to the criteria outlined in this RFP may not be considered for funding.

Application & Deadline

Graduate students interested in applying should complete the Proposal Application Form using the criteria below. The completed Proposal Application Form (Microsoft Word), budget (Excel) and budget justification (PDF) must be e-mailed to Danielle Kalisek at Danielle.Kalisek@ag.tamu.edu. Proposals must be received electronically by **11:59 p.m. CST, March 27, 2022**, to be considered.

For technical questions, contact Lucas Gregory at lfgregory@ag.tamu.edu.

Proposal Application Form 2022–2023 TWRI Graduate Student Research Programs

Please complete all parts of this Proposal Application Form to be considered for the Texas Water Resources Institute (TWRI) Graduate Student Research Programs. Proposals should be at least 11-point Times New Roman font with 1-inch margins. Proposals must be received electronically by **11:59 p.m. CST, March 27, 2022**, to be considered.

The completed Proposal Application Form (Microsoft Word), budget (Excel) and budget justification (PDF) must be e-mailed as an electronic document to Danielle Kalisek at Danielle.Kalisek@ag.tamu.edu. The application package is **limited to 5 pages** and must include items 1 through 15 below. You do not have to keep the instructions within your application form but ensure that each section is titled accordingly and the required items 1 through 15 are addressed. *Applications with Basic Information beyond the 5-page limit will not be considered in the review process.* The Other Required Information 16-19 is not included in the 5-page limit.

Basic Information

1. **Title** of proposal. Concise but descriptive.
2. **Student** name, contact information (email and phone number), university, department, degree being pursued as well as degree starting year and expected year of graduation.
3. **Faculty advisor or committee chair** name, title, contact information (email and phone number), university and department.
4. **Which program(s) are you applying for (only select one option)?** In addition, please also indicate, if applicable, if you are not eligible for Mills due to eligibility restrictions.
☐ Mills Scholarship Program (Texas A&M, Galveston or Qatar only; tuition only)
☐ USGS Research Program (any Texas university; categorical funds and/or tuition)
☐ Either program will fit my needs and eligibility
5. **Have you received either the Mills Scholarship or USGS Research Program funds before?** If so, please indicate which source and the year.
6. **Would these funds be initiating new research or supporting ongoing research?** If ongoing, please briefly explain where you are at in the research and project timeline, funding source, funding amount (please differentiate between federal and nonfederal), and project start and end dates.
7. **Focus Categories.** Choose a maximum of three focus categories from the list provided (Attachment A) with the most preferred focus category first.
8. **Research Category.** Choose one category from the following list that most closely applies: Water Scarcity and Availability, Water Hazards and Climate Variability, Water Quality, Water Policy, Planning, and Socioeconomics, Watershed and Ecosystem Function, or Water Technology and Innovation.
9. **Keywords.** Enter keywords of your choice that are descriptive of the proposed work.
10. **Congressional District** of the university where the work is to be conducted.
11. **Abstract.** Please provide 200 words or less about your proposed research problem, methods and objectives, and describe how your research will address the research priorities.

12. **Description of your research proposed research**, emphasizing how it will address water resources-related concerns (particularly how, if possible, it will benefit Texas), including:
 - a. **Statement of critical regional or state water problem.** Describe how your research will address RFP research priorities and explain the need for the project, who wants it and why.
 - b. **Statement of expected results or benefits.** Specify the type of information that is to be gained and how it will be used.
 - c. **Nature, scope and objectives of the research, including a timeline of activities.** This is the major emphasis of your proposal
 - d. **Methods, procedures and facilities.** Provide enough information to permit evaluation of the technical adequacy of the approach to satisfy the objectives.

Note: Reference/Citations do not count toward the 5-page limit.
13. **Related research.** Show by literature and communications citations the similarities and dissimilarities of the proposed project to completed or ongoing work on the same topic.
14. **Training potential.** Estimate the number of graduate students and undergraduate students, by degree level, who are expected to receive training in the project.
15. **Intended career path** you anticipate pursuing.

Other Required Information *(These items are not included in the 5-page limit.)*

16. **Academic qualifications of the student:** current degree plan/grades, unofficial transcript or list of courses taken and grades.
17. **Budget** *(Submit as Excel spreadsheet attachment)*

If applying for the TWRI Mills Scholarship (only): Mills funds are strictly for tuition and fees only. No match is required. Therefore, Mills only applicants do not need to provide a formal budget breakdown, but please indicate here the amount you are requesting, not to exceed \$7,500.

If applying for the USGS OR BOTH sources of funds: USGS funds can go toward tuition as well as salaries, fringe, supplies, travel and other costs. Indirect costs are not allowed on the federal request but can be used toward match. The fillable Excel Budget Breakdown spreadsheet is required. Please only fill in the information in the yellow-shaded cells. Total request is not to exceed \$7,500; non-federal match must at least equal the federal request amount.
18. **Budget Justification** *(Submit as fillable PDF file attachment)*

If applying for the TWRI Mills Scholarship (only): No budget justification is required. Simply list “n/a” in this section.

If applying for the USGS funds (only) OR both sources of funds: Complete the fillable PDF form justifying your budget breakdown amounts. Be sure to include justifications for both the federal and non-federal portions.
19. **Investigators Qualifications**

Include resume(s) for both the principal investigator(s) student and advisor(s). No resume should exceed two (2) pages or list more than 15 pertinent publications.

Instructions for the USGS Budget Spreadsheet

- Do not modify the sheet named "Summary". It will automatically calculate values based on what you enter on the individual project Budget Breakdown.
- On the Budget Breakdown project sheet, enter the PI student and PI advisor(s) and the Project Title in cells B5 to B7.
- On the Budget Breakdown tab, either use the menu links at the top or scroll down to access the "Salary and Wage Breakdown," "Fringe Benefits Breakdown" and "Tuition Breakdown" tables. For each table, provide names along with each person's role (click in the Role cell to select from a menu of roles), and then enter the Federal and Non-Federal funding amounts. Note that filling out these tables will automatically populate the corresponding section in the main table at the top of the sheet. Do not edit the Salaries and Wages, Fringe Benefits, or Tuition sections in the main table at the top of the sheet.
- In the main table at the top of the sheet, enter amounts for Supplies, Equipment, Services/Consultants, Travel, Other Direct Costs, and Indirect Costs.
- In the main table at the top of the sheet, enter the University cost breakdown. A warning will appear in the "University Funding Check" area to the right if the sum of the amounts allocated to the Institute's campus and other campuses does not match the total amount proposed for the project.

FOCUS CATEGORIES

ATTACHMENT A

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	HYDROGEO
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
WETLANDS	WET