



UWW ORSP DEADLINE: 24 NOVEMBER 2009

WISCONSIN GROUNDWATER RESEARCH AND MONITORING AND UNIVERSITY OF WISCONSIN WATER RESOURCES INSTITUTE RESEARCH GRANT PROGRAMS

INTRAMURAL GRANT APPLICATION PACKAGE

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University of Wisconsin-Whitewater Office of Research and Sponsored Programs Intramural Transmittal Form. ONE original, complete ORSP Transmittal Form including all relevant funding competition information, proposal information, required clearances, and required signatures must accompany each proposal submitted to ORSP.

X

Proposal Development and Submission Instructions. Each University of Wisconsin grant program has varying proposal development and submission requirements. Principal Investigators must review this application package carefully and adhere to specific program requirements to be competitive.

X

Grant Program Forms. Each University of Wisconsin grant program requires the submission of different forms. All relevant forms are included in this application package. Electronic versions of all forms can be accessed on the ORSP Funding Page (<http://www.uwworsp.org/media/funding.htm>).

X

Additional Proposal Development and Submission Resources. University of Wisconsin grant application packages may include additional resource information including evaluation/review criteria, description of proposal review processes and deadlines, and other pertinent appendices.

The Office of Research and Sponsored Programs can provide additional information, proposal development assistance, and copies of funded proposals. ALL proposals must be submitted to ORSP. Grants submitted to directly to System or Extension may not be reviewed.

DENISE EHLEN, Director, 262-472-5212, ehlend@uww.edu

CRYSTAL WATSON, Sponsored Programs Specialist, 262-472-5212, watsonc@uww.edu





UNIVERSITY OF WISCONSIN
WHITWATER

RSP APPROVAL & CERTIFICATION
TRANSMITTAL



DO NOT COMPLETE SHADED SECTIONS WITH DOUBLED BORDER – FOR UWW RSP USE ONLY

FUNDING COMPETITION INFORMATION Deadline:		RSP USE ONLY		ID:
1. Sponsor & Program:		Date Submitted:		
2. Address:		Number of Copies to Sponsor (original +)		
3. Telephone:	Fax:	Binding of Original: <input type="checkbox"/> Clip <input type="checkbox"/> Staple <input type="checkbox"/> Other <input type="checkbox"/> N/A		
4. Web:		GT Proposal Entry:		GT Award:
4. Notes:				
PROPOSAL INFORMATION				
5. Principal Investigator:		5a. Department/Division/Institution:		
5b. Address:		Phone:	Fax:	Email:
6. Co-Investigator:		6a. Department/Division/Institution:		
6b. Address:		Phone:	Fax:	Email:
7. Co-Investigator:		7a. Department/Division/Institution:		
7b. Address:		Phone:	Fax:	Email:
8. Co-Investigator:		8a. Department/Division/Institution:		
8b. Address:		Phone:	Fax:	Email:
9. Project Title:				
10. Funding Type <input type="checkbox"/> New <input type="checkbox"/> Renewal/Continuation		AWARD INFORMATION – RSP USE ONLY <input type="checkbox"/> GRANT <input type="checkbox"/> CONTRACT		
11. Total Request \$		New Account <input type="checkbox"/> Non-Federal <input type="checkbox"/> Federal (CFDA#)		
12. Match Information \$		Org Information <input type="checkbox"/> New <input type="checkbox"/> Add To		
13. Begin Date End Date		Total Award Begin Date End Date		
REQUIRED CLEARANCES – Does the project involve:				
14. toxic, infectious or carcinogenic/mutagenic material? Use recombinant DNA technology?				Approved? (choose one)
15. use of human subjects, human tissue or vertebrate animals?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
16. action involving space, remodeling, or construction?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
17. hiring non-UWW personnel?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
18. requires release time by PI (and/or Co-Is) in support of project activities?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
19. creation of new degree programs or services?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
20. potential environmental impacts, which require review under the Wisconsin Environmental Policy Act?				<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Pending
REQUIRED SIGNATURES				
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR		SIGNATURE		DATE
I certify that the plan detailed in the proposal/contract complies with all campus, state, and federal regulations and policies and reflects University, College/Division, and Department/Unit goals. This project is achievable as described, including the limitations of time, resources, and personnel expertise. All required clearances have been satisfied. I have disclosed any possible conflicts of interest during the proposal development process. If awarded, I agree to conduct the proposed project in compliance with (1) the conditions of the grant and (2) with all policies of UWW, UWS, and the State of Wisconsin.				
I authorize the use of my name and grant information for university publication. <input type="checkbox"/> NO <input type="checkbox"/> YES (initial)				
DEPARTMENT CHAIR/UNIT DIRECTOR		SIGNATURE		DATE
I certify that I have reviewed the proposal/contract and found it to be complete, including required clearances, budget, and commitments involving space, faculty/staff time, and matching funds. In addition, I certify that all resources and other provisions of any award will be fulfilled. A match (check one) <input type="checkbox"/> has OR <input type="checkbox"/> has NOT been pledged. Cash match will be satisfied by a transfer of funds from org code _____-_____ in the amount of \$_____ or via in-kind contributions as described in the budget (narrative).				
COLLEGE DEAN/DIVISION DIRECTOR(S)		SIGNATURE		DATE
I certify that I have reviewed the proposal/contract and found it to be complete, including required clearances, budget, and commitments involving space, faculty/staff time, and matching funds. In addition, I certify that all resources and other provisions of any award will be fulfilled. A match (check one) <input type="checkbox"/> has OR <input type="checkbox"/> has NOT been pledged. Cash match will be satisfied by a transfer of funds from org code _____-_____ in the amount of \$_____ or via in-kind contributions as described in the budget (narrative).				
<i>Student Affairs applicants must secure the signature of the Assistant Chancellor and Deputy Assistant Chancellor in this cell. Applicants submitting proposals including an international component must secure the signature of the Director of International Education and Programs in this cell.</i>				
RESEARCH AND SPONSORED PROGRAMS CERTIFICATION		SIGNATURE		DATE
By signing this transmittal, I certify that this proposal/contract is consistent with campus, state, and federal regulations; is within the campus' research/service mission; and is approved for submission to the funding agency.				
INITIAL HERE TO APPROVE GRANT/CONTRACT ACCEPTANCE:		DATE:		TYPED NAME: DENISE EHLEN

**GROUNDWATER RESEARCH AND
MONITORING GRANT & UNIVERSITY OF
WISCONSIN WATER RESOURCES INSTITUTE
RESEARCH GRANT PROGRAMS**

SPECIAL NOTE

Investigators for both programmatic requests must work with the Office of Research and Sponsored Programs to submit proposals using iPropose, a web-based proposal submission system that will be open for registration after Friday 6 November 2009. Please visit the Water Resource Institute website (<http://wri.wisc.edu>) for more information or contact the UWW Office of Research and Sponsored Programs.

Contact Denise Ehlen (ehlend@uww.edu, X5212) with additional questions.



State of Wisconsin \ **GROUNDWATER COORDINATING COUNCIL**

Jim Doyle, Governor

101 South Webster Street
Box 7921
Madison, Wisconsin 53707
FAX 608-267-7650
TDD 608-267-6897

Joint Solicitation

**Groundwater Research
and Monitoring Proposals
for State of Wisconsin FY 2011
(July 1, 2010 – June 30, 2011)**

and

**UW Water Resources Institute
USGS 104(B) Research Grant Proposals
(Project period: March 1, 2010 - February 28, 2011)**

Facilitated by:

**Wisconsin Groundwater Coordinating Council
University of Wisconsin Water Resources Institute**

Participating agencies:

**University of Wisconsin System
Wisconsin Department of Natural Resources
Wisconsin Department of Agriculture, Trade & Consumer Protection
Wisconsin Department of Commerce**

Proposal Submission Deadline: December 2, 2009

Contact James Hurley, Water Resources Institute (hurley@aquawisc.edu) or Jeff Helmuth, WDNR (jeffrey.helmuth@wisconsin.gov) if you have questions or wish to be removed from the mailing list for this annual solicitation.



State of Wisconsin \ GROUNDWATER COORDINATING COUNCIL

Jim Doyle, Governor

101 South Webster Street
Box 7921
Madison, Wisconsin 53707
FAX 608-267-7650
TDD 608-267-6897

Date: October 29, 2009

To: Interested Researchers
From: Todd Ambs, Groundwater Coordinating Council; Anders Andren,
UW Water Resources Institute

Todd Ambs
Council Chair
DNR

Subject: Joint Solicitation for Groundwater Research and Monitoring;
UW Water Resources Institute Call for Proposals

James Robertson
WGN HS

Henry Anderson, MD
DHS

Anders Andren
UWS

Berni Mattsson
COMMERCE

Dan Scudder
DOT

Kathy Pielsticker
DATCP

George Kraft
GOVERNOR'S REP.

Enclosed is information on the State of Wisconsin Groundwater Research and Monitoring Program and the University of Wisconsin Water Resources Institute's joint solicitation. The solicitation is a coordinated effort of the University of Wisconsin System (UWS), the Wisconsin Departments of Natural Resources (DNR), Agriculture, Trade and Consumer Protection (DATCP), and Commerce. This cooperative solicitation allows interested individuals to prepare project proposals that can be submitted to several different funding sources simultaneously and eliminates the need to submit similar proposals several times for different solicitation efforts. This year, up to \$355,000 will be available for new monitoring and/or research to meet specific agency needs and objectives.

This joint solicitation includes two separate programmatic requests, the state's Groundwater Research and Monitoring Program and the University of Wisconsin Water Resources Institute's special call for climate-related water resources proposals.

You are invited to review the enclosed materials and decide if you wish to submit proposals. **The deadline for submittals is Wednesday, December 2, 2009.** Investigators for both programmatic requests are required to submit proposals using *iPropose*, a web-based proposal submission system that will open for registration after Friday, November 6, 2009. Please visit the UW Water Resources Institute website (<http://wri.wisc.edu>) for more information.

It is our intent that this joint solicitation will make it easier for interested researchers to prepare proposals, promote coordination among state agencies and researchers, and enhance the ability of state agencies and the UW System to meet their objectives.

I. Wisconsin Groundwater Research and Monitoring Program Proposals

A. Overview. The University of Wisconsin System (UWS) and the Wisconsin Departments of Natural Resources (DNR), Agriculture, Trade, and Consumer Protection (DATCP), and Commerce annually participate in a joint solicitation for research and monitoring proposals dealing with groundwater, pesticides and/or onsite wastewater treatment systems. Up to \$355,000 will be available for groundwater-related monitoring and research in fiscal year 2011 (FY 11) for new projects. The four programs, which are collectively called the Wisconsin Groundwater Research and Monitoring Program (WGRMP), are summarized as follows:

UWS Groundwater Research - The UWS, through its UW-Madison Water Resources Institute (WRI), has received funding since FY 90 for groundwater research. Projects may be of a fundamental or applied nature on selected aspects of groundwater research in the natural sciences, engineering, social sciences, or law. Through FY 09, the UWS has invested \$5.9 million on 162 groundwater research projects. Several projects have been co-funded with DNR, Commerce and/or DATCP and 13 were co-funded through the National Institutes for Water Resources program (US Geological Survey). The UWS will have up to \$155,000 to fund new projects in FY 11.

DNR Groundwater Monitoring and Research - The DNR has been funding groundwater "management practice monitoring" projects since FY 86. The intent of these studies, funded through the Groundwater Account of the Environmental Fund, was to identify appropriate management practices to reduce the impacts of potential sources of contamination. In recent years, the DNR has used funds from alternative state and federal sources, and has targeted funds at specific issues of concern, including arsenic, emerging contaminants (viruses, antibiotics), and groundwater quantity. Through FY 09, the DNR has spent approximately \$7 million on 207 monitoring projects. Several of these projects have been co-funded with DATCP, Commerce and/or UWS. The DNR anticipates having between \$100,000 to \$200,000 to support groundwater research and monitoring studies in FY11.

DATCP Pesticide Research - From 1989 to 2002, DATCP had approximately \$135,000 available annually to fund research on pesticide issues of regulatory importance. This money came from fees paid by pesticide manufacturers to sell products in Wisconsin. Through FY 09, DATCP has spent about \$1.8 million on 42 pesticide projects. Some of these projects were co-funded with DNR and/or UWS. Due to budget constraints, DATCP will not have money to fund any new projects in FY 11. DATCP will, however, take part in the proposal review process.

Department of Commerce Private Onsite Wastewater Treatment System Research - The Division of Safety & Buildings (formerly in the Department of Industry, Labor, and Human Relations) received an annual appropriation of \$50,000 from 1990 to 1993 to fund research on alternatives to current private sewage-system technology. In 1994, when the appropriation expired, \$75,000 generated through plan review and licensing fees became available each year for research on private sewage systems. Through FY 09, Commerce has spent approximately \$600,000 on eight projects. Two projects were co-funded with DNR and UWS. Due to budget shortfalls, Commerce will not have money to fund research projects in FY 11. Commerce will, however, take part in the proposal review process.

The Wisconsin Groundwater Coordinating Council (GCC) provides consistency and coordination among the four state agencies in funding groundwater monitoring and research to meet state agency needs. See the "Research and Monitoring" page on the GCC website:

<http://dnr.wi.gov/org/water/dwg/gcc/index.htm>. The reasons for this solicitation to be made jointly are to facilitate proposal writing, streamline the review process, curtail duplication, improve coordination among agencies and researchers, and enhance communication among the agencies and among principal investigators (PIs). Joint funding of some projects may be appropriate, but joint funding is not the purpose of this solicitation because each agency has its own designated mission and priorities. Although all proposals received will be distributed to each agency, each investigator is asked to identify the agency whose mission and priorities best match their project.

Please read the solicitation carefully; it contains a description of the priorities for each agency program and other pertinent information, including the online proposal submission process. Capital items may not be purchased with these funds. Generally, faculty salaries plus fringe benefits should not exceed 10% of an individual grant.

Investigators who are new to this program are encouraged to solicit an example proposal from the agency contacts listed below.

If you have questions please call the following appropriate agency contacts.

James Hurley, UW Water Resources Institute: (608) 262-0905; hurley@aquawisc.edu

Jeff Helmuth, Dept. of Natural Resources: (608) 266-5234; jeffrey.helmuth@wisconsin.gov

Jeff Postle, Dept. of Agriculture, Trade and Consumer Protection: (608) 224-4503;
jeff.postle@wisconsin.gov

Harold Stanlick, Department of Commerce: (262) 521-5065; harold.stanlick@wisconsin.wi.us

Please note that each agency has separate requirements for eligibility for WGRMP projects. Review the agency-specific sections carefully. In general:

UWS: Funds are restricted for use by faculty within the UW System or by academic staff who have achieved nomination to Principal Investigator status.

DNR & Commerce: Funds are restricted to use by UW System and state and county agency contractors.

DATCP: Any college or university, research foundation or individual having a demonstrated capacity in pesticide or other applicable research may submit proposals.

Investigators who are not affiliated with the state and therefore not eligible for funding by UWS, DNR, or Commerce may wish to collaborate on a proposal with a UWS investigator or state agency staff member.

Principal investigators that are significantly overdue with completed final reports to this program will not be eligible for new funding. In the case of UWS, reports are considered significantly overdue six months after the initially specified or understood completion dates. The GCC may consider extenuating circumstances on a case-by-case basis.

B. WGRMP proposal Submission, Review and Administration

1. Submission of Proposals. Proposals for the Wisconsin Groundwater Research and Monitoring Program (WGRMP) will be submitted via the University of Wisconsin Water Resources Institute's (WRI) website at <http://wri.wisc.edu>. **The website will open for registration and submittal of proposals after November 6, 2009.** The deadline for submittal of proposals is 5:00 pm Wednesday, December 2, 2009.

Investigators will be required to provide the following information when submitting proposals:

- a. An abstract, list of investigators, location of the research, targeted agencies, three to five suggested reviewers and their areas of expertise (two of the reviewers suggested must be from outside of Wisconsin), the name of the department and the administrator(s) responsible for financial management of the project if funded.
- b. A proposal narrative in Adobe Portable Document File (PDF) format. A template for the proposal narrative will be available for download from the WRI website in both Microsoft Word and WordPerfect formats
- c. A budget spreadsheet in Microsoft Excel format. A template for the budget spreadsheet will be available for download from the WRI website in Microsoft Excel format.
- d. An administrative authorization form with signatures of individuals authorized to sign proposal submissions.

To create a PDF file, investigators may use the online or the desktop version of Adobe Acrobat software. Adobe online offers a monthly subscription service for creating PDF files and a free trial subscription to create 5 PDF files. Visit <https://createpdf.adobe.com> for more information.

Proposals should be no longer than 18 pages. All pages should be 8.5" x 11". The project summary, narrative, curriculum vitae, and support pages should each start on a new page, have at least 1.5 line spacing (except for Figure and Table legends), and use no smaller than 11-point type. All margins should be no less than 0.75 inches. The proposal must be consecutively paginated on the bottom of the page. Include literature citations in the proposal where appropriate (single-spaced within, double-spaced between). Any section of a proposal that exceeds the specified maximum page limits will be grounds for returning the proposal to the author.

Guidelines for Proposal Submission begin on page 8 and a checklist is available for download on the WRI website. All proposals must be submitted using these instructions. No facsimiles of proposals and no hand-written proposals will be accepted. Special attachments (maps, brochures, etc.) will be accepted, noted, and kept on file, but will not be included in the package of materials submitted to reviewers.

2. Review of Proposals. All proposals received through the WGRMP joint solicitation process receive reviews from the following four groups:

- a. External peer review: The UW WRI solicits a minimum of four external peer reviews of all proposals.
- b. The Research and Monitoring & Data Management Subcommittees of the GCC
- c. The Groundwater Research Advisory Council
- d. Staff from the funding agencies

The two most important considerations of the reviewers are 1) whether the proposal meets agency priorities as outlined in this solicitation and 2) whether the proposal is well written and scientifically sound. Other criteria include project cost, proposed timeline, whether the proposed

project methodology meets the stated objectives, whether the resources requested are adequate to carry out the project, whether the project investigators have the abilities to complete the proposed project, and, if applicable, how the proposed project relates to past WGRMP-funded projects and how it may extend our knowledge

Funding decisions will be made by the end of March 2010. Proposals that are not chosen for funding through this solicitation may be referred to other funding sources for their consideration with permission of the investigators. Likewise, other funding organizations may refer proposals to the funding agencies involved in this solicitation.

3. Administration of Projects. Proposals that are funded become the property of the granting Wisconsin state agency. Please note that each agency has separate mechanisms for administering funds, and separate requirements for reporting. However, all investigators will be asked to submit a two-page Project Summary upon completion of the project and to make a copy of the final report available to the WRI Library. For more information, please contact Jeff Helmuth or James Hurley.

4. Dissemination of Project Findings. Final reports are required for each project funded through this solicitation. Reports from UWS-funded projects are kept in the UW-Madison Water Resources Library. DATCP, Commerce, and DNR funded reports are kept on file with the respective agencies, but many are provided to the Water Resources Library for public distribution. All project investigators must submit a two-page Project Summary upon completion of the final report. The summaries and final reports are made available on the WRI web site as they become available (www.wri.wisc.edu), thus providing the public with a real-time link to information about current groundwater research. Multiple-year projects funded through UWS are also required to submit concise annual reports through iPRO, an online interactive project management database hosted on the WRI website. Projects funded by DNR, DATCP, and Commerce are required to submit quarterly reports.

Wisconsin's Water Library catalogs all WRI research reports into WorldCat and MadCat, two library indexing tools that provide worldwide access to the research. By having this information permanently indexed, the results are easily available to other scientists, policy makers, and stakeholders. The Water Resources Library has also partnered with The UW Digital Collections Center to digitize and post final reports. Full-text reports are available in the Ecology and Natural Resources Digital Collection (<http://digital.library.wisc.edu/1711.dl/EcoNatRes.Groundwater>).

C. Guidelines for Proposal Submission for WGRMP Proposals

Investigators are required to submit proposals using *iPropose* (a web-based proposal submission system developed by the UW Aquatic Sciences Center). The deadline for submission is 5:00 p.m. (Central Standard Time) on Wednesday, December 2, 2009. **The submission system will open after November 6, 2009 and is located on the UW Water Resources Institute website (<http://wri.wisc.edu>).**

The steps for entering information and uploading a proposal are relatively simple. The overall proposal format is identical to previous years, and a checklist is available for download on the WRI website. There are eight steps in the proposal assembly process, and we recommend that investigators concentrate on step one and step two prior to submitting online:

PLEASE NOTE: **WGRMP Proposal format differs from UW-WRI Proposal format.**

STEP 1: Prepare full proposal to WGRMP. Please use the Microsoft Word or Corel WordPerfect templates that can be downloaded from the UW Water Resources Institute website (<http://wri.wisc.edu>). The proposal will consist of the following items:

- A. Title, Investigators, Affiliations of Investigators (top of first page)
- B. Project Summary (begin on same page; **not to exceed 2 pages**; minimum of 11 point font and 1.5 line spacing)
 1. Specific groundwater or related problem addressed by research/monitoring proposal.
 2. What will findings contribute to problem solution or understanding?
 3. Project objectives.
 4. Project approach to achieve objectives, including methods and procedures.
 5. Potential users of project findings.
- C. Proposal Narrative (begin on new page; **not to exceed 10 pages**; minimum of 11 point font and 1.5 line spacing)
 1. Objectives
 2. Background information describing prior research/monitoring relevant to objectives and, if applicable, relationships to other projects funded through the Wisconsin Groundwater Research & Monitoring Program (WGRMP); references to ongoing projects and how they relate to proposed investigation; information gaps that will be filled by the proposed project.
 3. Project plan outlining experimental design and schedule.
 4. Methods detailed enough to convince the reviewer that the investigators are up-to-date on modern techniques; a general statement alluding to techniques is not acceptable.
 5. Relevance to groundwater related problems and agency priorities.
 6. Citations
 7. Training support (if any) provided by the project and information dissemination plan.
- D. Curriculum Vitae of Principal Investigators (begin on new page; **not to exceed 4 pages total**). Provide curriculum vitae (including recent publications) for each investigator and state the percentage of time that each will spend on the project (whether funding is requested for that individual or not).
- E. Current or Pending Support (begin on new page; **not to exceed 2 pages**).

After the full proposal is prepared, convert it to Adobe PDF format and save it on your local computer or network. When you submit your proposal package online you will be uploading this PDF file. The system requires that the proposal be in Adobe Acrobat PDF format (.pdf).

STEP 2: Prepare budget information. Please use the Microsoft Excel budget spreadsheet that can be downloaded from the web site (<http://wri.wisc.edu>). Use the WGRMP Excel spreadsheet titled "Groundwater_Budget.xls". The budget will consist of the following items:

- A. Salaries and Wages.
- B. Fringe Benefits.
- C. Tuition Remission Charges (if applicable).
- D. Supplies and Publication Costs (list office, lab, computer and field supplies separately).
- E. Travel (to support field operations only; travel for meetings is excluded due to limited funding).
- F. Other Costs (e.g., equipment maintenance and fabrication, subcontracts, rentals, etc.).

Please note: At the point of submission, the funding source should be considered State of Wisconsin General Program Revenue (GPR) funds. *Campus indirect costs do not apply.* In the event a proposal from a UW System campus is selected for funding by the Department of Natural Resources (DNR), Department of Commerce, or Department of Agriculture, Trade & Consumer Protection (DATCP), the budget may need to be revised to include the campus' indirect costs, depending on the source of the funding the agency uses to fund the proposal.

Save the Excel budget file on your local computer or network as you work on it. When you submit your proposal package online you will be uploading this Excel file. The system requires that the budget be in Excel format (.xls).

STEP 3: Create an *iPropose* account. Developed by the UW Aquatic Sciences Center, *iPropose* is a user-friendly web tool for submitting your proposal. Investigators must register online (<https://aqua.wisc.edu/iPropose>) before submitting proposals. **Note:** *iPropose* will open for registration and submission after November 6, 2009. Instructions on the site will assist you in entering your proposal package.

Steps Four through Six (below) may be completed separately. *You do NOT need to upload your entire proposal package in a single session.* Your account will remain active through the submission deadline, and you may edit each section until your proposal is officially submitted (see Step 7). **Note:** Your proposal is not officially submitted until you click on the "Submit Proposal" button.

STEP 4: Enter information about your proposal into the online system:

- A. Title
- B. Abstract (condensed version of project summary (300 words maximum). It is recommended that the abstract is prepared in a word processing program, saved locally and then copied and pasted into the online form. This suggestion is for your protection in case there were problems with your submission.
- C. Location of field research.
- D. Principal and associate investigators.
- E. Ranking of agencies in order of preference or relevance for funding: University of Wisconsin System, DNR, DATCP and Commerce. (Note that this ranking does not exclude consideration of a proposal by any of the agencies, but it does assist the reviewers in evaluating the proposal.) DO NOT choose "UW-WRI Climate".
- F. The name of at least one financial contact and the department/entity where project will be administered if approved for funding.

- G. Names and email addresses of three qualified reviewers, including their areas of expertise (two of the reviewers must be from outside Wisconsin).

STEP 5: Upload the proposal PDF file into the online system. This is the file that you prepared in Step One.

STEP 6: Upload the budget information Excel file into the online system. This is the file that you prepared in Step Two.

STEP 7: Submit your proposal. Please review the accuracy of the information provided before submitting your proposal. To formally submit your proposal package, select the “Submit Proposal” button at the bottom of your screen. **This step MUST be done by 5:00 p.m. CST Wednesday, December 2, 2009.**

STEP 8. Provide administrative approval. All proposal submissions require administrative approvals and clearances before they can be considered. Please refer administrative staff reviewing your submission to Step 2 of these guidelines (Prepare budget information) for information on the source of funds used for this competition.

Campuses other than UW-Madison: An email stating that the proposal has received all required approvals and clearances must be sent to Dan Marklein (marklein@aquawisc.edu). This email must be from a campus official who is authorized to approve grant applications. Attachment of official transmittal documents or electronically routed authorization forms are also acceptable. This administrative approval must be sent by **5:00 p.m. C.D.T. on Wednesday, December 2, 2009.**

UW-Madison: An email stating that the proposal has received all required approvals and clearances must be sent to Dan Marklein (marklein@aquawisc.edu). This email must be from a division/dean-level official who is authorized to approve grant applications. Proposals should NOT be routed through UW-Madison Research and Sponsored Programs (RSP). The WISPER system is not required but may be used for informational and routing purposes. However, the record should not be routed to RSP; it should be routed to WISPER user DANIEL MARKLEIN instead. The record will not be routed any further. This administrative approval must be sent by **5:00 p.m. C.D.T. on Wednesday, December 2, 2009.**

D. Priorities of Agencies in the WGRMP

1. University of Wisconsin System

The University of Wisconsin System (UWS), through its Water Resources Institute (WRI) and its Groundwater Research Advisory Council (GRAC), seeks projects of a fundamental or applied nature on any aspect of groundwater research in the natural sciences, engineering, social sciences, economics, or law. For the purposes of this solicitation, “groundwater research” is defined as research that advances the understanding, protection or management of the groundwater resource. Projects that are primarily focused on wastewater or drinking water treatment technologies, surface water protection or soil science must make a clear link to current groundwater science. Projects funded in the current cycle are listed on the WRI website at <http://wri.wisc.edu>. The UWS will have up to \$155,000 to fund new projects in FY 11. Because the cost of fringe benefits will affect the amount of money available, the exact level of funding depends on the budgeted categories used in the selected proposals. The remaining funds for UWS groundwater research have been previously committed to ongoing projects.

Applicant Requirements: Most often the PI will be a faculty member on any campus in the UWS. However, academic staff members who have achieved nomination to PI status by endorsement of their relevant academic dean may serve in this capacity. Projects that appear to be continuations of previously funded projects with two years of UWS support and projects that have been twice rejected will not be considered. The UWS also strives to avoid funding situations where the name of a PI or co-PI appears on more than two UWS projects during any given fiscal year.

Budget Considerations: Projects will not be approved in any one budget cycle for a period of more than two years and then contingent on satisfactory progress. No capital equipment (more than \$5,000 per item) may be purchased. Travel for attendance at scientific meetings will not be accepted. Generally, faculty salaries and fringe benefits to be paid from any project should not exceed 10 percent of the total individual grant. Overhead costs are not allowed. Supplies should not exceed 20 percent of the total individual grant.

Review of Proposals: Two types of peer reviews will be conducted for proposals submitted for UWS consideration. First, WRI participates in the external peer review process for the Joint Solicitation. Reviews are solicited from national and international experts in the field, with a focus on the technical merits of the proposal. Second, the Research Subcommittee of the GCC assembles a panel of state experts to evaluate each proposal’s mission relevancy and consistency with UWS priorities.

Final Decision Making: The GRAC, which consists of university, state agency, and public representatives, meets as a body to discuss the results of the review process. The GRAC pays close attention to UWS priorities and direct relevance to groundwater issues in their deliberations. The GRAC recommends a priority list of projects that the UWS should strive to fund in accordance with budgetary resources. A suitable UWS Groundwater Research Program is then assembled by the WRI and submitted to the GCC, which advises the Department of Administration on the release of UWS research funds upon passage of a state budget.

Reporting: All applicants will be notified about the results of the review process by the end of March 2010. Principal Investigators on awarded projects shall submit a progress report at the end of each project year using the Water Resources Institute’s WEB-based reporting application, iPRO. Annual progress reports are due each year in July. A final report and a two-page project summary shall be submitted through the iPRO system within 90 days after the project end date.

UWS GROUNDWATER RESEARCH PRIORITIES FOR FY11

The UWS Groundwater Research Priorities for Wisconsin were developed by the UW Groundwater Research Advisory Council. The council members have statewide expertise on groundwater research and policy. UWS funding for groundwater research is administered through the UW Water Resources Institute, which is an active member of the National Institutes for Water Resources (NIWR). The National Institutes were established to implement the provisions of the Water Resources Research Act of 1984 (Public Law 98-242) through the collective activities of the 54 member agencies. The 2008 strategic plan for NIWR contains three objectives designed to “provide relevant and timely information that can assist the Nation’s water resource managers in their development and implementation of programs aimed at providing a sustainable water supply.” These national objectives align well with the UWS Groundwater Research Priorities and were used as a framework to organize the list below. This synergy between local and national goals highlights Wisconsin’s leadership in groundwater research and protection.

Objective A: Maintain or enhance *groundwater quantity*.

- Implications of the Great Lakes Basin Compact for groundwater use, high capacity wells, and the resulting economic impact on Wisconsin and the region.
- Assessments of water availability and the impacts of human water use on groundwater levels, groundwater storage, surface water features, and ecological features.
- Effects of climate change and variability on groundwater levels, flow patterns, and quantity.
- Impact of land-use practices on groundwater quantity including the effects of agricultural, industrial, municipal, residential, or waste management activities that recharge groundwater.
- Develop strategies for maintaining groundwater availability.

Objective B: Maintain or enhance *groundwater quality*

- Identification and characterization of chemical and biological pollutants in groundwater systems and their threats to ecosystems and human health, including the type, toxicity, and persistence of degradation products.
- Effects of climate change and variability on groundwater quality.
- Impact of land-use practices on groundwater quality including the effects of agricultural, industrial, municipal, residential, or waste management activities that contaminate groundwater.
- Interactions of groundwater and surface water including chemical transformations in the hyporheic zone; impacts of groundwater withdrawal on surface waters; influence of groundwater discharge on surface-water quality; and wetland impacts on groundwater.
- Impacts of alternative fuel production and use (including blends) on groundwater quality.
- Develop strategies for ensuring high quality groundwater in the face of climate change.

Objective C: Maintain or enhance *groundwater management*

- Investigations into the best methods for optimizing groundwater use for human and environmental needs in Wisconsin, including strategies for long-term management.
- Development & evaluation of tools or protocols for regulatory approval of high-capacity wells.
- Development and use of new technologies for groundwater characterization or management.
- Investigations that examine the controls on pollutant transport in groundwater, including the development or validation of predictive models.
- Economic impact of groundwater use.
- Impacts of contaminated groundwater on Wisconsin families, including human health effects on reproduction, development, and chronic disease; or on economic losses attributable to groundwater contamination.
- Implications of climate change on groundwater management.

2. Wisconsin Department of Natural Resources

The Wisconsin Department of Natural Resources (DNR) supports monitoring and research on drinking water and groundwater-related topics. Funding for these projects comes from a variety of state and federal sources and supports a wide variety of topics (see DNR's Groundwater Research and Monitoring Web page at <http://dnr.wi.gov/org/water/dwg/gw/research.htm>).

Currently, DNR monitoring and research is funded from the following four sources:

1. Management Practice Monitoring is state-supported groundwater monitoring or support activities, such as laboratory technique development or geologic resource characterization, for establishing or improving management practices necessary to meet the state groundwater quality standards of NR 140, Wisconsin Administrative Code.
2. 2003 Wisconsin Act 310 created funding for groundwater quantity monitoring and research related to (a) interaction of groundwater and surface water, (b) characterization of the groundwater resource, and (c) strategies for managing water.
3. Federal support for groundwater monitoring and research may be available through Section 106 Clean Water Act funding. Goals include maintaining groundwater quality standards, identifying impaired groundwater and its causes and sources, and implementing groundwater management programs.
4. Federal funds for groundwater monitoring and research related to protecting public well water may be available through the Wellhead Protection provisions of the Safe Drinking Water Act.

The DNR anticipates having approximately \$100,000 to \$200,000 to fund new monitoring and research projects in state FY 11 (July 1, 2010, through June 30, 2011). Specific research and monitoring needs are prioritized and listed after the application requirements.

Applicant Requirements

Eligibility: Funds are restricted to UWS and state agency contractors. Others may submit proposals if they include a state-affiliated co-PI. The DNR encourages applicants to include a UWS-eligible investigator to maximize funding options.

Budget Considerations: Proposals will be considered for a maximum of two years. Contracts will be approved on an annual basis. Project cost will be a factor in selection. Budget items should include personnel costs, supplies, equipment and necessary travel. State funds cannot support indirect costs or the purchase of capital equipment.

Contractual Requirements: Projects must meet all departmental requirements and guidelines related to groundwater monitoring wells (installation, documentation and abandonment/filling and sealing), sampling, laboratory analysis and data management. See chapters NR 141 and 149, Wis. Adm. Code, for more information.

Reporting: The PI shall submit quarterly project status reports to the DNR project manager within 30 days of the end of each quarter. A final report and a two-page project summary shall be submitted to the project manager within 60 days of the end of the contract period. The final report must contain thorough documentation of methods, all the data collected, and a discussion of how the results of the project can and should be used by decision makers.

Review of Proposals

All proposals will be reviewed and rated by DNR staff and members of the Groundwater Coordinating Council's Research and Monitoring & Data Management subcommittees. Three important criteria in evaluating each proposal are: (1) whether the proposal addresses a priority

issue as listed below; (2) whether the proposal addresses an ongoing need as listed below, and (3) whether the project fits one of the four funding categories specified above. Proposals should contain a clear discussion of the expected practical application of the project results. This will help the reviewer understand the importance of the proposed research and will ensure that the researcher designs the project with the practical application of results in mind.

In making final funding decisions, the Bureau of Drinking Water and Groundwater will formulate its recommendations based on input from all project reviewers and available funds. The Director of the DNR's Bureau of Drinking Water and Groundwater will make the final funding decisions.

Monitoring and Research Priorities

The DNR has identified the following priorities for groundwater monitoring and research for FY 11. These are specific ideas for projects for which state groundwater experts see an immediate need. Funding preference will be given to project proposals that address one or more of these priorities.

- a. Evaluation of Livestock Waste Management Practices for Protection of Groundwater and Drinking Water Wells.** Drinking water wells in Wisconsin have been contaminated by livestock waste. Research is needed to determine effective management practices and site characteristics for livestock waste handling that are protective of drinking water wells and groundwater. Projects should address acute and/or chronic impacts to groundwater from livestock waste management and may focus on one or more of the following:
 - Mechanisms, pathways and timing of movement into groundwater and private drinking water wells
 - Methods for evaluating sites for suitability for livestock waste application
 - Influence of landscape settings
 - New analytical tools (microbial source tracking, isotopic methods, etc.)
 - Methods of assessing the vulnerability of private water supply wells
 - Associated contaminants (bacteria, nitrate, pharmaceuticals, viruses, other pathogens, etc.)
 - Tools/Mapping to help landowners in areas that are susceptible to groundwater contamination determine best management practices
 - Best management practices
 - Influence of climatic effects (droughts, floods, climate change)

- b. Information to Support Implementation of 2003 Wisconsin Act 310.** In May 2004, state statutes were modified, setting new standards and conditions for protection of surface waters as part of the process in evaluating applications for high-capacity wells (see summary at <http://www.legis.state.wi.us/2003/data/acts/03Act310.pdf>). To help implement the new law, the DNR needs additional data and information on the following topics:
 - *Identification and mapping of springs* – DNR is required to review proposed wells that may impact a spring, which is statutorily defined as “an area of concentrated groundwater discharge occurring at the surface of the land that results in a flow of at least one cubic foot per second [cfs] at least 80 percent of the time.” While historic records pertaining to springs have recently been compiled into a single database, current information is generally lacking throughout the state. DNR is committed to updating the existing springs information. In addition to the basic information collected by DNR, better information about spring hydrology is needed to assess the impacts of high capacity wells on spring flow rates and characterize the susceptibility of certain spring types or size categories to impacts as a result of groundwater drawdown.

- *Impacts of high capacity wells on surface waters* - The DNR is directed to evaluate whether proposed high-capacity wells in the vicinity of certain high-quality surface water resources (Outstanding and Exceptional Resource Waters, trout streams, large springs) will have a significant adverse impact upon those resources. The Groundwater Advisory Committee recommended a scientific approach to expanding groundwater protection areas in its 2007 report (<http://dnr.wi.gov/org/water/dwg/gac/GACFinalReport1207.pdf>, section 2.2.3 p. 15). There is a need to further evaluate the proposed methodology and its specific numerical criteria. Additionally, more information is needed for evaluating proposed wells, including methods for estimating stream flow rates in areas where stream gaging data is sparse, how a reduction in baseflow affects water quality, temperature, fish and other biota, habitat, and how to best evaluate these impacts. There is a need for the development of advanced screening and assessment tools useful in areas where there are significant numbers of both agricultural high-capacity wells and high-quality surface water resources. There is also a need for more surface water/groundwater interaction research (e.g. streambed conductance, recharge area identification, assessment of irrigation practices and consumptive use coefficients for agricultural applications, characterization of wetland and lake hydrology).
- *Predicting cumulative pumping impacts* – The legislation directs the DNR to establish Groundwater Management Areas around Brown and Waukesha counties, where significant drawdown is creating water quality and quantity concerns. The DNR is interested in predicting, evaluating, and mitigating cumulative impacts of pumping on water resources in these areas.
- *Impacts of groundwater withdrawals* – A better understanding of the implications of groundwater use on groundwater quality, quantity and surface waters is needed. Examples include estimates of current and projected water use rates; basin-scale groundwater budgets; impacts of economic factors such as higher grain prices and demand for ethanol, and quantification of environmental, social and economic impacts of groundwater withdrawals.

Other groundwater quantity goals needing support from monitoring and research include:

- Identification of groundwater recharge areas
- Identification of water-dependent environmentally sensitive resources (e.g. calcareous fens)
- Reduced water demand through conservation, reuse and irrigation efficiencies
- Efficient and accurate water use reporting
- Enhancement of natural recharge
- Identification and evaluation of multi-aquifer wells
- Assessing how well construction requirements affect groundwater quantity concerns
- Improved hard surface infiltration technologies

- c. **Implementation of Statewide Groundwater Monitoring Strategy.** A GCC-facilitated statewide groundwater monitoring strategy has been incorporated into the DNR Water Division’s Monitoring Strategy (<http://dnr.wi.gov/org/water/monitoring/strategy.htm>). Its purpose is to provide a common state and federal agency framework to coordinate groundwater monitoring programs. Modernization of the State Observation Well Network is a key component of the Strategy. Another component of the strategy that needs to be addressed is taking a comprehensive look at existing data for parameters of concern. Existing databases (Groundwater Retrieval Network, DATCP, Wisconsin Groundwater Center and others) can be evaluated for public, private, and monitoring well data on nitrate, chloride, other major anions and cations, arsenic, radon, VOCs, pesticides, etc.

- d. Wellhead Protection Implementation.** The DNR has delineated source water areas, mapped potential sources of contamination, and assessed the susceptibility to contamination for all public water wells in Wisconsin. Research is needed to assist communities in the following areas:
- *Hydrogeologic studies to support characterization of the vulnerability of municipal drinking water systems to viruses and other emerging contaminants* – More information on the occurrence, transport and fate of viruses, pharmaceuticals, personal care products and other emerging contaminants is needed to help understand the threat they pose to drinking water systems, and ways to manage contaminant sources within a source water area.
 - *Land use impacts on the groundwater resource* – A better understanding is needed of the effect of various land uses (e.g., urbanization and agriculture) and management practices (e.g. stormwater) on groundwater quality and quantity. Simple tools should be developed for communities evaluating how land use decisions impact groundwater.
 - *Identifying abandoned wells in wellhead protection areas for filling and sealing* – Open wells can be a conduit for groundwater contamination. There is a need to assess the extent of the problem (e.g., an area-wide pilot project).
- e. Evaluation of impacts to groundwater by wastewater treatment methods.** The effectiveness of wastewater seepage cells in preventing nitrogen and other contaminants from entering groundwater is poorly understood. There is a need to study these impacts to develop innovative techniques to enhance their effectiveness.
- f. Protecting groundwater from impacts by stormwater infiltration.** There is a need to study impacts of stormwater infiltration practices within recharge areas and develop innovative techniques to enhance their effectiveness.
- g. Evaluation of potential virus contamination of groundwater from landspreading of waste.**

Ongoing Needs

The following topics are the result of input by the Research and Monitoring & Data Management subcommittees of the Wisconsin GCC, state agency staff and university researchers. While the department will give precedence to proposals that meet its priorities above, the following needs will be considered.

Viruses and Other Microbial Contaminants – Well water monitoring has shown the presence of viruses in public and private groundwater supplies. US EPA's Groundwater Rule will be requiring small public systems to install treatment for microbial control. Private wells in many parts of the state are also at risk. Areas where work is needed most include: 1) evaluation of existing treatment systems effectiveness; 2) development of new treatment system technology that would be effective, feasible for smaller systems, with minimal owner maintenance and chemical use, and easy to install; and 3) adenovirus research - genotypes, affects, routes of exposure, what people are impacted, and drinking water implications.

Emerging Groundwater Contaminants – Research is needed to determine whether certain emerging substances (pharmaceuticals, antibiotics and hormones, pesticide breakdown products, viruses prions, and other microbial agents) pose a threat to our groundwater resource and to human health.

Occurrence of Groundwater Contaminants – The department needs more information about the extent and causes of elevated nitrate, arsenic, sulfate, total dissolved solids (TDS), low pH, radium, molybdenum, and VOCs from construction and demolition landfills and other water quality problems in order to give advice to homeowners, municipalities and well drilling contractors.

Health Effects of Groundwater Contaminants – Research is needed to better characterize the impact of contaminated groundwater on public health. Pathogenic microorganisms, radionuclides, toxic chemicals (both naturally occurring and synthetic) and their metabolites are of interest. In addition, the synergistic impacts of contaminant mixtures are of concern to the department.

Resource Definition – The DNR supports studies that propose to better describe the geologic, hydrogeologic and geochemical conditions that affect groundwater quality and quantity in a specific aquifer or area of the state (e.g., contaminant transport in karst areas).

New Water Treatment Devices – Technology to treat contaminated water for drinking water purposes is constantly evolving. New technologies need to be evaluated for their effectiveness.

Contact Jeff Helmuth at (608) 266-5234 for more information if you have questions about the DNR's Groundwater Monitoring and Research Program.

3. Department of Agriculture, Trade and Consumer Protection Pesticide Research Program

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) Pesticide Research Program is administered by the Agricultural Resource Management Division. Due to budget constraints, DATCP will not have money to fund any new projects in FY 11. DATCP will, however, take part in the proposal review process and recommend funding for projects that meet their research objectives. Contact Jeff Postle (608-224-4503) for more information about DATCP research priorities if you intend to submit a pesticide-related proposal to another funding agency. Investigators should note that the focus of the DATCP program is on pesticide and nutrient research, which includes but is not limited to groundwater issues.

DATCP Research Priorities

a. Evaluation of Nutrient Management Practices on Water Quality.

This research should focus on the effects of nitrogen and phosphorus management practices on groundwater or surface water quality, evaluate models for predicting nutrient impacts on water resources, or evaluate the success of nutrient management planning.

b. Evaluation of the Environmental Fate Investigation Strategies and Remediation Alternatives for Contaminated Soil and Water at Pesticide Spill Sites.

Research should investigate the degradation and movement of pesticides at spill sites, develop criteria on the need for and appropriate extent of remedial actions, and evaluate various methods for investigation and remediation of contaminated soil and water.

c. Evaluation of Factors Influencing the Patterns of Groundwater Contamination by Pesticides and Pesticide Metabolites in Wisconsin.

This topic involves examining factors which influence pesticide leaching to determine areas of the state that are susceptible to groundwater contamination by specific pesticides.

d. Use Related Monitoring of Pesticides and Pesticide Metabolites in Groundwater.

This project should study groundwater contamination by field application of pesticides in key environmental settings such as fractured bedrock areas.

e. Use Related Monitoring of Pesticides in Surface Water and the Effect of Management Practices on Contaminant Levels.

Projects on this topic should determine the impacts of pesticide use practices on surface water quality and evaluate the ability of various management practices, such as stream setbacks, to reduce contamination.

f. Evaluation of the Effect of Pesticide Use on Endangered Species and their Habitat.

This topic should explore how the use of specific pesticides affects the habitat and survival of endangered species in Wisconsin and how alternative pest control methods could reduce problems.

4. Department of Commerce, On-Site Wastewater Treatment Research Objectives

The Department of Commerce supports research focused on the performance of onsite sewage system designs, products, and management practices that can be incorporated into the administrative rules regulating onsite sewage systems. These designs, products, or management practices must be:

- Directed toward protecting public health, groundwater and surface water quality;
- Result in onsite sewage treatment that is consistent with the provisions of the Groundwater Protection Law;
- Affordable by the average owner of an onsite sewage system; and
- Practical for the climate and soils of Wisconsin.

The department also intends to monitor, on an ongoing basis, the performance of various on-site sewage system methods and technologies. The purpose of the performance monitoring is to provide additional information on the long-term performance of the various on-site sewage system methods and technologies to confirm their reliability, to provide data for improvements and to monitor long-term compliance with the groundwater standards.

Due to budget constraints, the Department of Commerce will not have money available to fund projects in FY 11. However, the department will actively participate in the review of proposals and make recommendations to the other agencies participating in the solicitation to help meet department priorities.

Department of Commerce Research Priorities

- a. Developing a correlation between dry and wet unit measurements for monitoring treatment in soil absorption units (e.g. fecal count per gram of dry soil versus fecal count in cfu's/100ml).
- b. Research on treatment efficiency of traditional septic tank/septic absorption systems.

II. University of Wisconsin Water Resources Institute, USGS 104(B) Research Grants Program

Special Focus for 2010: Climate Change and Wisconsin's Water Resources

A. Overview

Important Dates

Full proposal deadline: Wednesday, December 2, 2009.

Project Period: March 1, 2010 to February 28, 2011.

Project Report: June 1, 2011.

Important Note – All projects must be completed by February 28, 2011. Due to federal authorization deadlines, there will be no extensions granted.

This request for proposals from the University of Wisconsin Water Research Resources Institute (UW-WRI) constitutes the Fiscal Year 2010 (FY10) Wisconsin Water Resources Grants Program as authorized by the federal Water Resources Research Act of 1984 as amended. This request for proposals, funded through the U.S. Geological Survey's 104(B) Water Resources Research Institute Program, is for research and information transfer projects in areas associated with climate change impacts on water resources (see Priorities for Funding below). Projects involving these topics will be given priority, subject to peer review. Approximately \$70,000 (depending on Congressional appropriations) will be awarded following peer review and selection by a panel of Wisconsin climate and water resources specialists and researchers.

Proposals will be considered for projects up to 12 months in duration to occur in a project period of March 1, 2010 through February 28, 2011. Since this is the final year of our authorization cycle, there will be no extensions beyond February 28, 2011. All projects must be completed by that date. In the USGS FY11 call for proposals, WRI will begin a new authorization cycle and will allow requests for multi-year grants.

Please note that the match required by USGS for this program is two (2) non-federal dollars for each federal dollar requested, **however UW-WRI requests a 1:1 match for these proposals**. Match should be clearly identified in all proposals responding to this RFP. Questions about meeting or documenting this match should be directed to the UW-WRI financial manager, Dan Marklein (dmarklein@aqua.wisc.edu).

Federal program guidelines require that all projects should demonstrate student training. Investigators must have their full proposals reviewed by their sponsored research office for compliance with applicable rules, regulations, and agreements.

Deliverables

Required deliverables for projects funded under this program include:

- An annual report in the USGS format as specified by the WRI
- Interaction with UW Aquatic Sciences Center (WRI and UW Sea Grant Institute) outreach staff
- Final report. Also, we strongly encourage publishing the results in peer-reviewed literature.

Program Objectives

This program supports research projects that respond to high priority state research issues in freshwater environments as outlined in the priorities section below.

Priorities for Funding

The Wisconsin Initiative on Climate Change Impacts (WICCI) assesses and projects climate change impacts on specific Wisconsin natural resources, ecosystems and regions; evaluates potential effects on industry, agriculture, tourism and other human activities; and develops adaptation strategies that can be implemented by businesses, farmers, public health officials, municipalities, resource managers and other stakeholders. WICCI represents a partnership between state and federal agencies and the colleges and universities in Wisconsin. It combines cutting-edge climate modeling capabilities with field expertise to assess impacts at focused and relevant measures of time and space. It fosters collaboration among units across the university system and with agencies and partners across the state. It develops practical information that can be used at all levels of decision making, both public and private. It is driven by stakeholder input to ensure that WICCI assessments meet the informational needs of Wisconsin citizens, businesses and institutions.

In September 2009, the Climate Working Group WICCI released their first historical analysis and future projections of Wisconsin's climate (<http://www.wicci.wisc.edu>). The primary purpose of these analyses is to enable other WICCI working groups to move ahead on impact assessments based on a clear and consistent set of climate data specific to Wisconsin. The WICCI Water Resources Working Group (WRWG) in turn, identified major research areas that should be explored **using the new downscaled data**. It is the following priorities that define this call for proposals:

1. Enhancing or refining existing hydrologic models (working with downscaled WICCI climate data) to address:
 - Geochemical responses to climate change
 - Implications for lake levels, stream flows and groundwater recharge
 - Linkages between climate and ecological models
 - Improvement of water-resources model parameters most sensitive to climate change
2. Compiling and analyzing spatial/temporal trends in long-term hydrologic information (e.g., statewide stream gauging, groundwater levels, lake water temperature, water clarity, etc.)
3. Compiling and analyzing hydrologic parameters that are used by managers and regulators that may be affected by climate change (e.g., ordinary high water mark, $Q_{7,10}$ flow statistics, wetland delineation guidelines, 100-year flood frequency interval, etc., hydrologic risk analysis for infrastructure design).
4. Initial design of a climate response monitoring network (water levels and flows monitoring approach, critical ecological-flow thresholds,).
5. Physical/hydrodynamic responses of lakes to climate change.
6. Thermal impacts to lakes and streams and the effects on biological communities and/or nutrient and carbon cycling.

7. Innovative outreach or education projects that address climate change and Wisconsin's water resources.
8. Evaluating costs and benefits of adaptation strategies related to water-resource management

Eligibility

1. Federal guidelines for this USGS program require that principal investigators (PI) be faculty or regular staff of a four-year institution of higher education in Wisconsin. Co-investigators are not required to meet this criterion.
2. All PIs and co-PIs must be current on deliverables from prior UW-WRI grants.
3. Federal employees cannot be Principal Investigators, but are encouraged as co-investigators. Federal employees may not be supported by funds from these grants, but federal agencies are encouraged to provide fiscal support for the project. Federal support cannot be counted as match.
4. This program supports water resource-related research. Projects primarily focusing on human health, or specific biological organisms or communities (unless to be used as an indicator or wider application) are not eligible for this program under federal rules. Additional consideration is given to new researchers, junior faculty, and graduate student projects.

Fiscal Guidelines

Proposal budgets must reflect a \$1 non-federal match for each federal dollar requested. This means that a federal request of \$20,000 will result in a research project with at least a \$40,000 total project cost. The match may include fringe benefits and indirect costs, as well as direct costs. Contact Dan Marklein (dmarklein@aqu.wisc.edu) for specific guidance on match. Overhead costs are not permitted to be charged on the federal funding request in this program, although the match may include the indirect costs that are not charged on federal dollars. An Excel budget template is available.

Notification and Award Period

Proposed projects may be up to 12 months in duration and may begin as early as March 1, 2010. Project funding must be completed by February 28, 2011. No extensions will be granted. Successful PI's will be notified by mid-January 2010.

Proposal Guidelines

UW-WRI/USGS proposal format differs from WGRMP (groundwater) proposals. Please use the following format:

STEP 1: Prepare the main body of the proposal. Please use the Microsoft Word or Corel WordPerfect templates that can be downloaded from the UW Water Resources Institute website (<http://wri.wisc.edu>). The proposal will consist of the following items:

This format and numbering scheme for sections conforms to USGS 104B guidelines. UW-WRI will provide information necessary for sections 1 through 11 if the project is selected for funding and needs to be transmitted to a federal grant site.

Main body of proposal (numbered starting with page 1; First section is numbered “12”)

Note: Sections 12 through 21 must fit on 10 pages.

12. Title, Investigators
13. Statement of critical regional or state water problem or anticipated problem(s)
14. Statement of expected results and benefits
15. Nature, scope, and objectives
16. Methods, procedures, and facilities available
17. Summary of closely related research or outreach
18. Student training potential
19. Statement of government involvement (if applicable)
20. Expected deliverables (including information dissemination plan)
21. References cited
-
22. Narrative statement of investigators qualifications
23. CVs/Resumes (maximum two pages per investigator)
24. Letters of participation from stakeholders (if applicable)

After the full proposal (Sections numbered 12 through 24) is prepared, convert it to an Adobe PDF file and save it on your local computer or network. When you submit your proposal package online you will be uploading this PDF file. The system requires that the proposal be in Adobe Acrobat PDF format (.pdf).

STEP 2: Prepare budget information. Please use the Microsoft Excel budget spreadsheet that can be downloaded from the UW Water Resources Institute website (<http://wri.wisc.edu>). Use the Excel template titled “**UW_WRI_Climate_Budget.xls**”. The budget will consist of the following items:

- A. Salaries and Wages.
- B. Fringe Benefits.
- C. Supplies.
- D. Equipment.
- E. Services or Consultants.
- F. Travel.
- G. Other Costs (e.g., tuition remission, maintenance and fabrication, rentals, etc.).

Please note: Save the Excel budget file on your local computer or network as you work on it. When you submit your proposal package online you will be uploading this Excel file. The system requires that the budget be in Excel format (.xls).

The funds provided by the University of Wisconsin Water Resources Institute, USGS 104(B) Research Grants Program are federal funds. **This program does not allow indirect costs on the federal request.** However, the value of indirect costs that would have been applied to the federal request can be used toward the matching requirement.

STEP 3: Create an *iPropose* account. Developed by the UW Aquatic Sciences Center, *iPropose* is a user-friendly web tool for submitting your proposal. Investigators must register online (<https://aqua.wisc.edu/iPropose>) before submitting proposals. **Note:** *iPropose* will open for registration and submission after November 6, 2009. Instructions on the site will assist you in entering your proposal package.

Steps Four through Six (below) may be completed separately. *You do NOT need to upload your entire proposal package in a single session.* Your account will remain active through the submission deadline (5 p.m. December 2, 2009), and you may edit each section until your proposal is officially submitted (see Step 7). **Note:** Your proposal is not officially submitted until you click on the “Submit Proposal” button.

STEP 4: Enter information about your proposal into the online system:

- A. Title
- B. Abstract (condensed version of project summary (300 words maximum). It is recommended that the abstract is prepared in a word processing program, saved locally and then copied and pasted into the online form. This suggestion is for your protection in case there were problems with your submission.
- C. Location of field research.
- D. Principal and associate investigators.
- E. Ranking of agencies in order of preference or relevance for funding: For this competition, choose only “**UW-WRI Climate**”.
- F. The name of at least one financial contact and the department/entity where project will be administered if approved for funding.
- G. Names and email addresses of three qualified reviewers, including their areas of expertise (two of the reviewers must be from outside Wisconsin).

STEP 5: Upload the proposal PDF file into the online system. This is the file that you prepared in Step One.

STEP 6: Upload the budget information Excel file into the online system. This is the file that you prepared in Step Two.

STEP 7: Submit your proposal. Please review the accuracy of the information provided before submitting your proposal. To formally submit your proposal package, select the “Submit Proposal” button at the bottom of your screen. **This step MUST be done by 5:00 p.m. CST Wednesday, December 2, 2009.**

STEP 8: Provide proof of administrative approval. All proposal submissions require administrative approvals and clearances before they can be considered. Please refer administrative staff reviewing your submission to Step 2 of these guidelines (Prepare budget information) for information on the source of funds used for this competition.

Campuses other than UW-Madison: An email stating that the proposal has received all required approvals and clearances must be sent to Dan Marklein (marklein@aqu.wisc.edu). This email must be from a campus official who is authorized to approve grant applications. Attachment of official transmittal documents or electronically routed authorization forms are also acceptable. This administrative approval must be sent by **5:00 p.m. C.D.T. on Wednesday, December 2, 2009.**

UW-Madison: An email stating that the proposal has received all required approvals and clearances must be sent to Dan Marklein (marklein@aqu.wisc.edu). This email must be from a division/dean-level official who is authorized to approve grant applications. Proposals should NOT be routed through UW-Madison Research and Sponsored Programs (RSP). The WISPER system is not required but may be used for informational and routing purposes. However, the record should not be routed to RSP; it should be routed to WISPER user DANIEL MARKLEIN instead. The record will not be routed any further. This administrative approval must be sent by **5:00 p.m. C.D.T. on Wednesday, December 2, 2009.**