



UNIVERSITY OF CALIFORNIA CENTER FOR WATER RESOURCES

2008 CALL FOR RESEARCH PROPOSALS



Water Resources Research Salinity/Drainage Irrigation Management (Prosser Trust)



Due Date: December 3, 2007

The Center for Water Resources, a multi-campus research program of the University of California, invites submission of research proposals for consideration of funding beginning on July 1, 2008. Three separate programs of different emphasis are offered: Water Resources Research; Salinity/Drainage; and Irrigation Management (Prosser Trust).

Research Agenda

Projects are awarded on the basis of technical merits, relevance to issues in California, and availability of funds. Proposals that focus on phenomena of ocean and oceanic water are not considered.

A recommended resource for prospective applicants is the UC Division of Agriculture and Natural Resources Core Issues and Target Opportunities document which outlines and describes the current core issues targeted for ANR resource allocation (<http://ucanr.org/PDFs/ANR%20Core%20Issues%2009-05.pdf>).

A list of previously and currently funded research projects and annual reports may be found at the Center's web site (<http://www.waterresources.ucr.edu>).

Water Resources Research Program

The Water Resources Research Program supports fundamental and applied research that promotes understanding, development, protection, and effective management of water resources.

Studies on surface and underground waters, the vadose zone, and estuaries are covered. Studies with anticipated outcomes that will have immediate and direct impacts critical to water issues in California are especially welcomed. The research subject matter for the Water Resources Center Research Program grants include the following five general categories (additional detail on each category is provided on page 6):

- Hydrology, climatology and hydraulics
- Aquatic ecosystems
- Water quality
- Water development and management alternatives
- Water law, institutions and policy

The emphases will be on:

- Identification of new water resources and better management of water supply and water quality
- Resolutions to water supply and water quality problems
- Exploration of new ideas that address water problems or expand understanding of water and water-related phenomena

The mission of this program is on training and education of future water scientists, engineers, and technicians through scientific research. Unless specifically justified, the requests should be focused on supporting graduate student research.

Salinity/Drainage Program

The Salinity/Drainage Program supports research and/or extension activities that address and contribute to the resolution of the salinity-drainage-toxic trace elements problem in the western San Joaquin Valley and elsewhere in California. Proposed projects should be problem-solving oriented. A great deal has been learned to deal with salinity and drainage issues of the western San Joaquin Valley since 1986. Interested parties are encouraged to consult the salinity drainage program annual reports posted at the Center's web site for findings of the previously supported projects. There nevertheless is no single satisfactory solution and no easy answer to the multifaceted drainage problems. The program continues to seek innovative and creative application of the science, technology, and policy approaches to understand the nature and to find solutions. Potential issues include (but are not limited to):

- Policy and Management Systems
Optimization, policy analysis, cost/benefit analysis, and institutional framework to address the sustainable salinity and drainage management options for the western San Joaquin Valley.
- Trace Elements
Understanding the biogeochemistry of agricultural drainage-related trace elements in the terrestrial and aquatic environment and their implications on aquatic eco-toxicities.
- Land Retirement
Increasing acreages of irrigated agricultural lands are projected for retirement. Proposals addressing issues of land retirement are encouraged, such as long-term management issues of retired lands, economic and environmental consequences of land retirement, etc.
- Drainage Water Disposal
Methodologies for improving water quality, drain water reuse (impacts on soils, plants, and groundwater), cost/benefit analysis, and other disposal options.
- Monitoring
Real time salinity and water monitoring for optimizing water, soil salinity, and drainage management.

Irrigation Management Program (Prosser Trust)

The Irrigation Management Program is supported through revenues from the Prosser Family Trust. The program is open to a broad spectrum of topics related to crop irrigation management, focusing on optimizing yields, conserving water and improving irrigation efficiency. Emphasis should be placed on research outputs that improve current practices, and on dissemination of information. Proposals should specify the research product to be delivered and address potential impacts of that product.

Eligibility

Eligibility requirements are the same for all three programs.

Faculty members and individuals holding University of California PI status and UC Cooperative Extension (CE) specialists and advisors are eligible.

A principal investigator (or research team) may submit only one proposal to each program and the same proposal may not be considered in more than one program.

Proposals from principal investigators of currently funded projects will be considered, only if the current project will be completed by the commencement of the 2007 funding cycle (July 1, 2008).

PROPOSAL SUBMISSION DETAILS

Deadline: December 3, 2007

Submit: Proposals should be submitted electronically as an MS Word (preferred) or Word Perfect document in the format listed below. Additionally, *two* original copies verifying campus approval of the grant application, in accordance with the administrative procedure for grants and contracts at the originating campus, must be received by January 31, 2008.

Electronic Submission Address: cwres@ucr.edu

Mailing Address:

US MAIL

Director
University of California
Center for Water Resources
Rubidoux Hall – 094
Riverside, CA 92521

PHYSICAL ADDRESS (FedEx, UPS, etc.)

Director
University of California
Center for Water Resources
4501 Glenwood Drive
Riverside, CA 92501

Questions and Correspondence:

Phone: 951-827-4327
Fax: 951-827-5295
E-mail: cwres@ucr.edu

PROPOSAL FORMAT

Cover Page:

Project Title – Concise and descriptive title of the proposed study

Research Program and Category (WRC Only) – State whether the proposal is being submitted for the Water Resources Center Research Program; Salinity/Drainage Program; or Irrigation Management Program (Prosser Trust). Categories for the Water Resources Center Research Program are listed on page 6; please select the most appropriate one for your study.

Project Duration – not to exceed two years

Contact Information – Name, department, complete mailing address, email, phone, and fax for each of the following:

Principal Investigator(s)
Department Head
Department Accounting Contact
Campus Research Office Contact

(The UC Center for Water Resources will work with appropriate contacts to facilitate grant acceptance and fund transfers for proposals selected for funding.)

Executive Summary:

The summary should be able to be extracted as a stand-alone document, not longer than two pages, describing the research problem(s) to be addressed and its relevance, the research approach, anticipated outcome(s), and benefits expected from completion of the proposed project. The executive summary will be read by members of the Center's advisory bodies, who may not be experts of the proposed subject matter; thus, writers are encouraged to describe the proposed work, research methods, anticipated results, and potential benefits in non-technical terms.

Proposal Body:

Information to be included in the body of the proposal is outlined below. Information provided in sections 1 – 7 (combined) should not exceed 15 pages.

- 1. Introduction and Objectives:** Provide background on the nature of the problem(s) to be addressed, justification of the proposed work, importance to water resources issues in California and research objectives.
- 2. Related Research:** Provide a review of relevant literature on the subject to be studied. For recent recipients of the Center's research grants, please briefly describe the outcomes of the funded work, and if appropriate, their relationship to the current proposal.
- 3. Methods and Procedures:** Outline plans for achieving the stated objectives. Provide sufficient information to permit evaluation of the technical adequacy of the research approaches and facilities.
- 4. Anticipated Results:** Describe the expected outcomes of the proposed study; give tangible examples of how the outcomes may help resolve the issues addressed by the study as well as possible products from the research.
- 5. Investigator's Overall Research:** Describe how the proposed work relates to the overall research program of the principle investigator(s), particularly in relationship to completed projects and potential future funding. Articulate the potential development of larger scale projects upon the conclusion of the proposed study. Indicate if this research is being supported by other sources of funds, and if so, the source, amount and duration.
- 6. Investigator Qualifications:** Provide biographical information to illustrate the qualifications of principal investigators and co-investigators. Resume for each principle investigator should not exceed 2 pages or list more than 15 pertinent publications.
- 7. Student Training:** The UC Center for Water Resources encourages the use of funds from its research programs to support student research training whenever feasible. Please state whether or not a student training opportunity is encompassed in this proposal, and if so, describe the opportunity. If a student has already been identified to participate should the research proposal be funded, list the name and describe the academic background, degree program enrolled, and expected completion date of the student to be supported.
- 8. Budget:** Itemize details for each year of the proposal (see Format for Budget Request). Research grant awards may be for either one or two years with annual budgets between \$15,000 and \$30,000; this norm is exceeded only where there are compelling justifications. No indirect cost is allowed. Requests for purchasing equipment are discouraged; approvals for equipment purchase (\$1,000 and more) are rare and must be deemed as essential to conduct the research. Funds will not be allowed for the purchase of computers and/or printers. Itemized expense justification needs to be detailed in the budget narrative.
- 9. Budget Narrative:** Provide detail and individual itemized justifications for proposed expenditures, and identify other sources of funding, if any, which will be used to achieve the research objectives. The budget narrative will need to be specific and include all expenses, individual staffing details and fringe benefits respectively.

Water Resources Center

RESEARCH CATEGORIES

CATEGORY I: HYDROLOGY, CLIMATOLOGY AND HYDRAULICS

Encompasses the physical processes governing water transformations through the atmosphere, over land, in the vadose zone, and in natural water bodies, aquifers and man-made conduits. Examples of investigations include studies of precipitation and stream flow; influence of weather patterns and/or climate modification on the hydrologic cycle and water supplies; micrometeorological processes linking atmospheric water, solar energy, water use by plants, and available soil moisture; modeling of hydrologic and hydraulic processes; and the development of hydrological databases for water resources management.

CATEGORY II: AQUATIC ECOSYSTEMS

Encompasses basic observational, analytical and theoretical assessments of aquatic environments and ecosystems leading to knowledge that enhances effective utilization of water resources. Research areas of interest include biological, chemical and physical mechanisms that govern the behavior of aquatic ecosystems, including the classification, transport and impact of pollutants. Also included are constructed ecosystems for water reclamation; wetland management; impacts of land use practices and water resources utilization and development on aquatic habitats; role and effect of non-native species; and reconstruction ecology.

CATEGORY III: WATER QUALITY

Encompasses all aspects of water quality management. Topics include sources and the nature of contamination; effects of contamination on human health, plant and wildlife; wastewater treatment and reclamation processes; and retrospective evaluations of the effectiveness and impacts of different strategies utilized in California for improving water quality, in particular water reuse, and for preventing water quality degradation.

CATEGORY IV: WATER DEVELOPMENT AND MANAGEMENT ALTERNATIVES

Encompasses economic and systems analyses approaches for formulating and evaluating water resources planning, development, and management alternatives. Topics include policies and programs directed at increased water conservation and water reuse; development of models for use in planning and operating water supply systems; conjunctive use of surface and subsurface storage; water markets and water pricing; and development of improved criteria for water project planning.

CATEGORY V: WATER LAW, INSTITUTIONS, AND POLICY

Encompasses all aspects of institutional framework (policies, laws, administrative processes, and regulations) for developing and managing water resources. Topics include: understanding and assessing institutional management of water scarcity and ground water; taxes, fees and user charges for watershed management or related objectives; potential institutional conflicts associated with specific water development and management alternatives; and the evolution of water management institutions in California. There is an especially compelling need for studies that involve analytical investigations of alternative policies for managing California's limited water resources.

FORMAT FOR BUDGET REQUEST

(Budget narrative should be provided separately.)

TITLE: _____

Primary Investigator/Team Leader: _____

COST CATEGORY ITEMS	Year One	Year Two
SALARIES & WAGES		
Principal Investigator(s)	\$	\$
Student Research Assistant(s)	\$	\$
Other Professional/PGRA	\$	\$
Fringe Benefits (Show rate and base)	\$	\$
<i>SUBTOTAL</i>	\$	\$
EXPENSES		
Supplies & Expenses	\$	\$
Travel	\$	\$
Other (Specify)	\$	\$
<i>SUBTOTAL</i>	\$	\$
<i>TOTAL</i>	\$	\$