An assistant professor of environmental studies with 20 years' experience as an environmental consultant, Krantz is the director of the Salton Sea Database Program run by the University of Redlands Center for Environmental Management and Policy.

Funded with a $2 million grant from the U.S. Environmental Protection Agency, the database program serves as a clearinghouse for Salton Sea ecological data. A staff of six headed by Krantz gathers, analyzes and then re-distributes to scientists and policy-makers a wide variety of information about the sea and its 8,000-square-mile watershed area.

The information is available in a traditional hard-copy library housed on the third floor of Duke Hall but will also be posted on the Web by this summer at www.cemp.uor.edu/saltonsea.

By being part of the effort to rescue this troubled resource and the life that depends on it, the University of Redlands joins a national group of agencies and organizations in what has become a highly visible project.

"We are key to the effort," says Krantz. "There is so much information out there that exists in so many different places, but we are the only ones who can bring it all together. We're the pit crew. We keep the car going." And quite a car it is.

The late U.S. Rep. Sonny Bono (R-Palm Springs) had been a strong supporter of state and federal efforts to determine how to save the sea, located only about 40 miles from Palm Springs. His unexpected death in January galvanized attention on the sea and gave new life to a 1997 initiative by the U.S. Department of Interior to develop a rescue plan.

Three bills were introduced in Congress in February. The most far-reaching are the Senate and House bills called the Sonny Bono Memorial Salton Sea Reclamation bills, which are supported by all California legislators as well as political heavyweights such as House Speaker Newt Gingrich (R-Georgia).

Besides renaming the existing national wildlife refuge in honor of Bono, the bills authorize $327 million for a project to clean up the lake and, if possible, stabilize its water levels.

There are a few people who think the Salton Sea should not be cleaned up because of the costs involved, but the vast majority of the public and the government think that the only thing comparable to the Salton Sea's problems is its worth.

It helps support a $1 billion-a-year agricultural and commercial fishery industry, and it is the key Pacific migratory stopover for 1 million birds a year—384 different species, including four that are endangered. The death of many of these birds is expected if the Salton Sea were to become unable to sustain life.

Various clean-up methods have been discussed. They include building water treatment plants, diking off part of the sea that would then become an evaporation pool while treating the rest, and building pumping systems to pump in fresh water and pump out contaminated water. Estimates of costs have ranged from a low of $60 million to a high of $1 billion.

Since each solution will have its own side-effects on the environment as well as on land owners, water users and commercial interests, determining the solution—and who will pay—has become complicated.

"We were appointed to ensure that political agendas did not dictate the engineering solutions. It isn't so much that people have a reason to prefer one method over another as it is that their views may be limited by what they believe is possible and affordable," says subcommittee chair Friend.

There are four major groups represented on the science subcommittee: state agencies, local water interests, federal agencies and a tribal government, which owns some of the land under the sea and around it. Taking the lead for the state is the Department of Water Resources, while the U.S. government's lead agency is the Department of Interior's Bureau of Reclamation.

Right now, it's unclear how a decision will be made after the subcommittee submits its scientific findings to the Department of Interior in summer 1999.

"That's a good question," says Richard Thiery, biologist for the Coachella Water Valley District. Thiery is a member of the science subcommittee as well as the Salton Sea Authority, a consortium of county governments and various water agencies.

"I think they are planning on the fact that during the process a clear alternative will arise and we will all know the best way to proceed."

For its part, the University of Redlands will provide information in a new way to aid scientists and government officials as they study the issues and make their decisions.

The Salton Sea Database Program was created after U.S. Rep. Jerry Lewis (R-Redlands) sponsored legislation to give the University of Redlands an Environmental Protection Agency grant to study the Salton Sea through its Environmental Studies Program.

"We are beginning a very exciting and environmentally challenging project that may lead to the restoration of the single-largest body of water in California," said Lewis. "University-based

Center takes on contracts

The University of Redlands Center for Environmental Management and Policy is a non-profit arm of the university that will contract with businesses, government agencies and other organizations to conduct natural resources management services using Geographic Information Systems (GIS) technology.

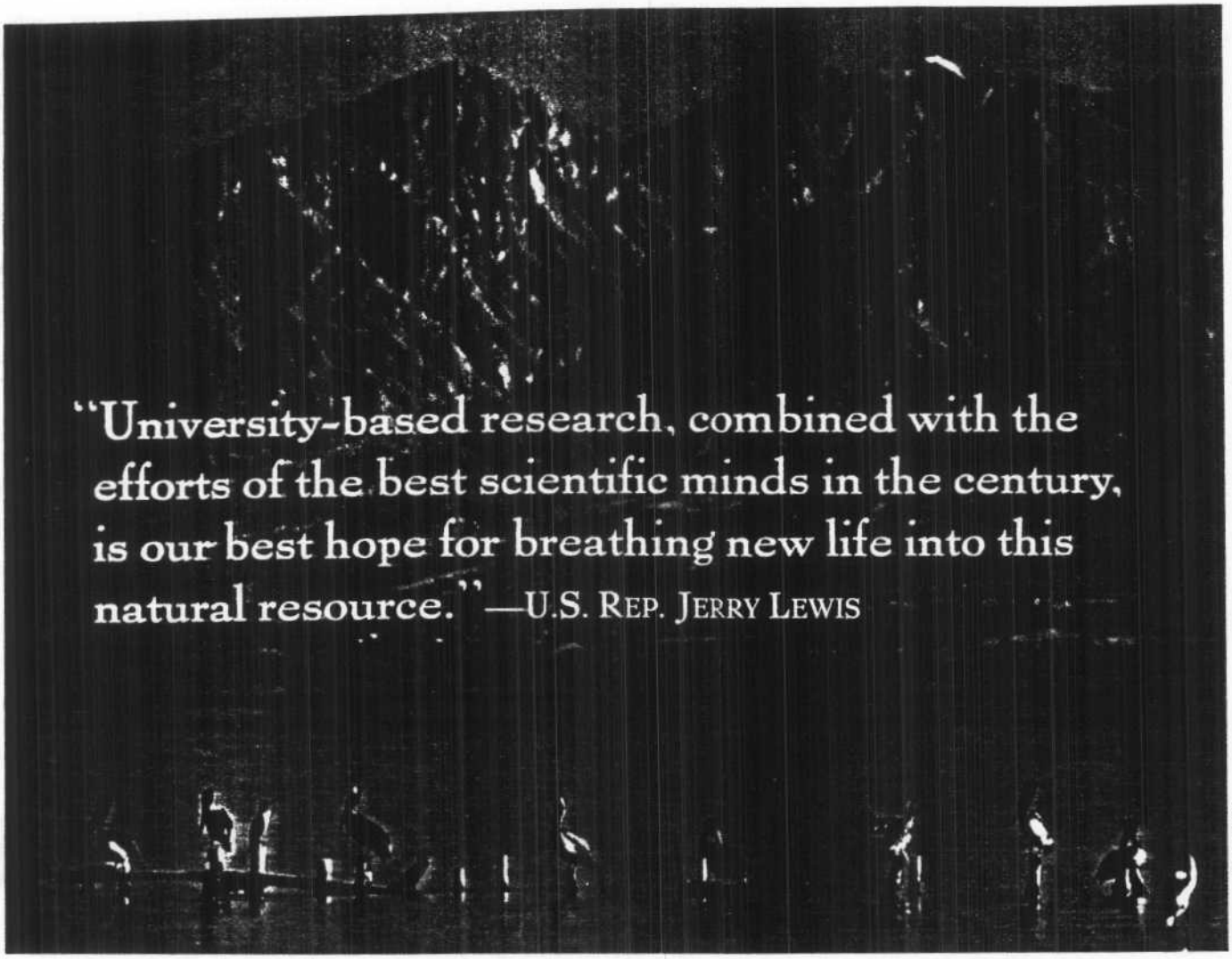
The $2 million Salton Sea Database Program funded by the EPA is only the first in what Assistant Professor Tim Krantz '77 (JC), director of the center, foresees as a healthy number of projects to keep environmental studies faculty—as well as six or more student researchers a year—busy.

"They're knocking on our doors," he says. "I don't have to do anything to get these projects here."

Krantz is in discussions or negotiations for several more GIS projects, including one on behalf of a state agency to develop maps and a database of all the state's archaeological, historical landmark and Native American tribal sites.

Another potential project involves working with a corporate concern that owns land that is home to an endangered frog. In addition, a county entity is looking into using the center to help it decide how to manage development or other land management issues in an area that is home to the endangered kangaroo rat.

"There are private companies that do what we are doing, but for a lot more money," says Krantz, explaining that the non-profit center can bid the projects at cost. "That makes us attractive. We also have good technical expertise in our faculty and also in terms of our students."



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research, combined with the efforts of the best scientific minds in the country, is our best hope for breathing new life into this natural resource."

The EPA authorized funding in 1997 after Redlands submitted a proposal that underwent a thorough review of the agency (and received the support of all five House members from the Salton Sea districts of Riverside and Imperial counties).

The program will gather all currently available data about the sea and its water basin, including historical and cultural information, water quality measurements, water levels, geography, water uses and resources, land ownership and uses, soil analyses, climate data and vegetation and animal life in the area.

Then the information will be converted to Geographic Information Systems (GIS) files that allow data to be represented spatially. For example, GIS files can indicate where in the lake the largest amounts of selenium have been found. Or they can indicate the concentrations of fish and birds with botulism over the years.

While most of the information on the Web in the Duke Hall library will be unrestricted, the primary audience will be subcommittee members, university consortium members and other governmental representatives charged with developing proposals to solve the sea's problems.

The second phase of the program calls for identifying data still needed and, where appropriate for an undergraduate liberal arts university, conducting research to gather it. About $1 million in EPA funding will pay for University of Redlands faculty and students to map the wetlands around the sea.

The federally funded project fits well with Redlands' academic goals, says Dean of the College of Arts & Sciences Philip Glotzbach.

"A major reason we're here is to provide this generation of students with ways to understand and then make smart decisions about the real issues affecting them and the people around them," Glotzbach says. "This project provides a valuable opportunity for our students to learn about the complexity of environmental problems, to put the program's interdisciplinary nature to work in the real world and to participate in a very practical way in developing solutions."

Assisting in the Redlands' project as consultants will be employees of Environmental Systems Research Institute. One of the nation's largest GIS systems designers, Redlands-based ESRI has provided funding, computer equipment and software, and staff to assist the university since it formed its Environmental Studies Program in 1993. ESRI will provide technical support to the database group as needed.

"I am absolutely confident that we will save the sea," says Krantz, "and that five years from now there will be a engineering project under construction if not already finished."—*by Lisa Dunlap*