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Prestigious Professors

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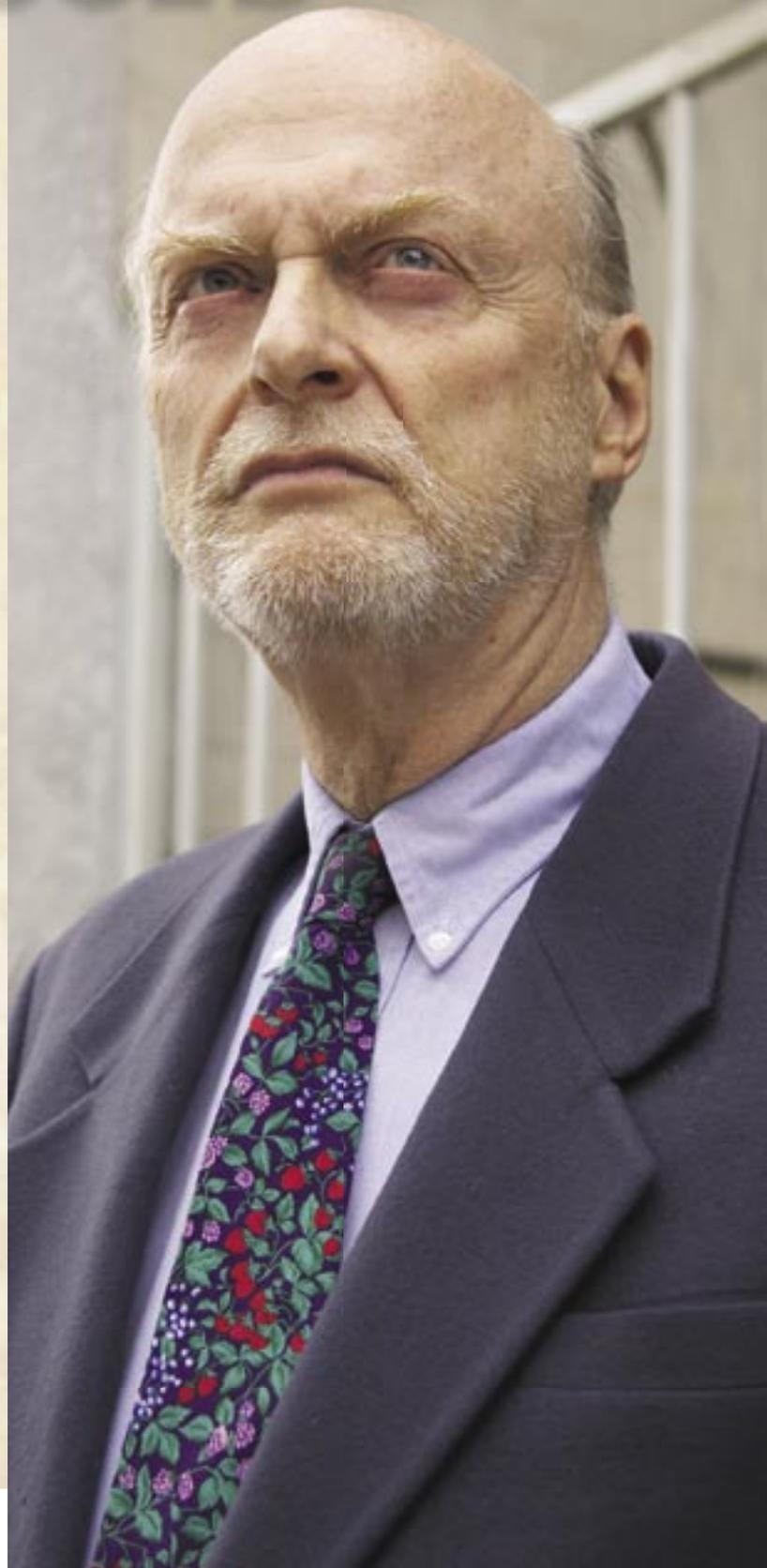
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Prestigious Professors

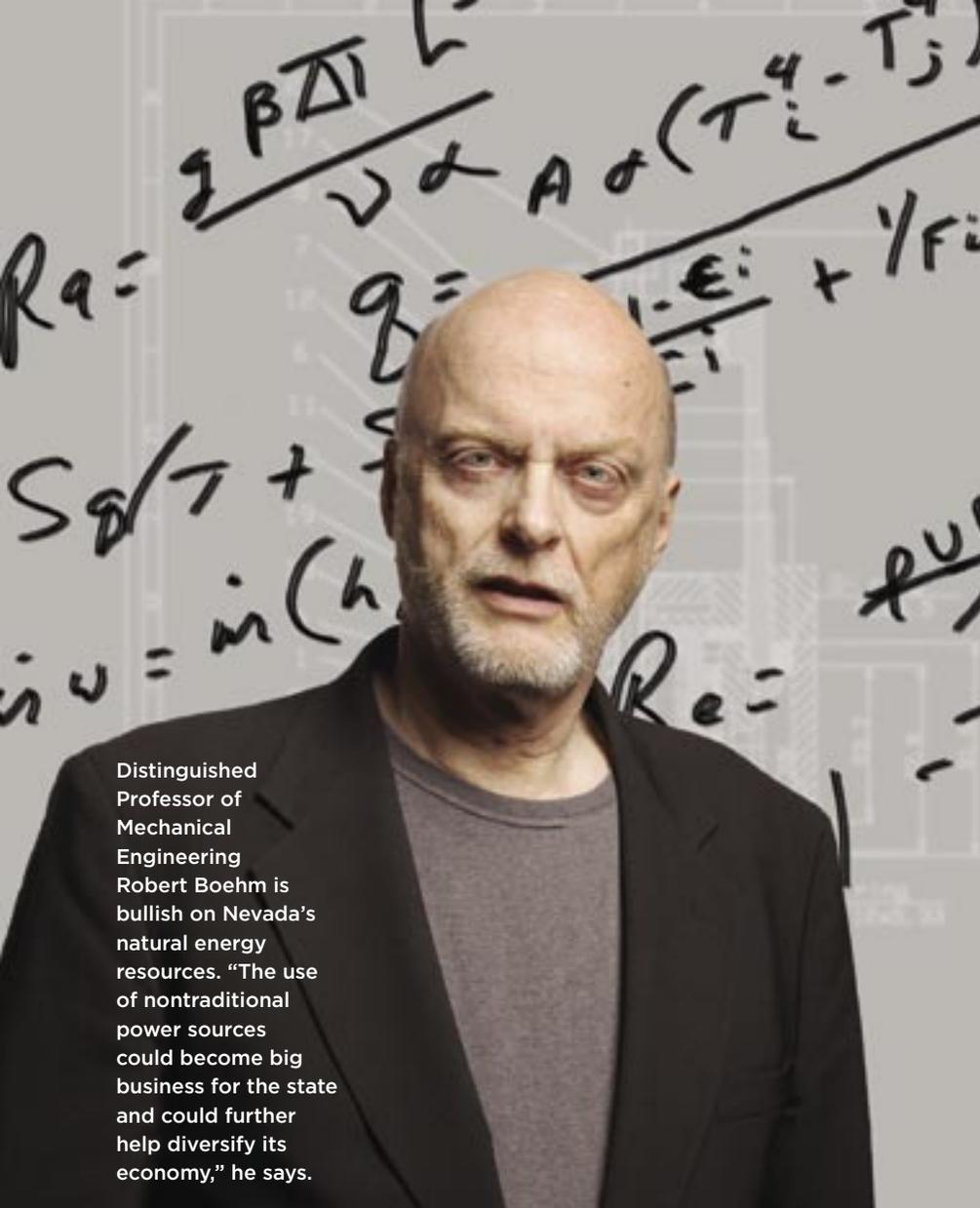
**The Harry Reid Silver State
Research Award winners
share a passion for research,
but on distinctly different
aspects of the state and region**

UNLV's most distinguished research award — the Harry Reid Silver State Research Award — was created in 2001 with two goals in mind: honoring the U.S. senator who has been an outstanding supporter of UNLV, and recognizing faculty who have performed research that is both highly regarded and responsive to the needs of the community and state. In the following pages, *Fusion* profiles the first three recipients of this honor — Robert Boehm, Stanley Smith, and Hal Rothman — who represent the exceptional research and scholarship being performed at UNLV.





PRESTIGIOUS PROFESSORS: From left, mechanical engineering professor Robert Boehm, biological sciences professor Stanley Smith, and history professor Hal Rothman



Distinguished Professor of Mechanical Engineering Robert Boehm is bullish on Nevada's natural energy resources. "The use of nontraditional power sources could become big business for the state and could further help diversify its economy," he says.

PHOTO BY AARON MAYES

Robert F. Boehm [2002 Recipient]
Distinguished Professor, Department of Mechanical Engineering
Director, UNLV Center for Energy Research

Many believe that by tapping into Nevada's plentiful solar, wind, and geothermal resources, the state could become a major supplier of the nation's energy.

UNLV Distinguished Professor of Mechanical Engineering Robert Boehm not only believes this is possible, but is working to make it happen.

Boehm, the university's first recipient of the Harry Reid Silver State Research Award, maintains that in the not-too-distant future, he and his UNLV colleagues could help provide ecologically sound power sources that will also help stimulate new jobs and tax revenue for this region.

"The use of nontraditional power sources could become big business for the state and could further help diversify its economy," Boehm says. "We have the ability to solve the country's energy problems within Nevada's borders."

Since joining the UNLV faculty in 1990, Boehm continues to both teach and explore the potential of solar energy utilization, radiation heat transfer, and the design of thermal systems. In 1995, he established the Center for Energy Research, an interdisciplinary entity that focuses on the application of solar and renewable energy and the development of energy-efficient technologies. Currently, 10 graduate students, five faculty

members, and numerous research partners are actively involved in a number of major projects, including:

- Developing energy conservation design criteria for buildings constructed in the desert Southwest.
- Constructing a zero-energy home with numerous energy-conserving features.
- Developing a remote monitoring system for the new 50 megawatt solar-power system being constructed near Boulder City.
- Analyzing the effects of adding thermal storage to trough-type solar thermal power plants.
- Monitoring environmental conditions in remote locations at the Nevada Test Site using a photovoltaic power generation system.
- Evaluating the economic viability of solar-powered water heaters.
- Building a renewable hydrogen refueling station to install and analyze the performance of a hydrogen fueling system powered by the sun's energy.
- Working with developers of concentrating photovoltaic solar power systems.

Boehm has authored several books on the design of thermal systems and heat transfer, has written more than 400 articles in a variety of publications, and has been a featured presenter at conferences and workshops around the nation and the world. He currently serves as associate editor for several international journals and is a member of the American Society of Mechanical Engineers International Energy Committee, which is charged with making recommendations on energy issues to Congress.

Boehm received his bachelor's and master's degrees in mechanical engineering from Washington State University and his doctorate from the University of California, Berkeley. He has been the principal investigator or co-principal investigator on more than 40 research projects during his 14 years at UNLV. Over the past five years, his grants and contracts have totaled nearly \$4.5 million.



PHOTO BY GERI KODEY

Stanley D. Smith [2003 Recipient]
Professor, Department of Biological Sciences
Coordinator of UNLV's Arid Lands Macrotheme

Arid land ecosystems cover up to 30 percent of the Earth's terrestrial surface and affect nearly 20 percent of the world's population. These regions are growing faster than any other part of the United States. A lack of water and low plant productivity make arid lands among the most environmentally sensitive areas on the globe, and with climatic change and encroaching population centers, they are

also becoming increasingly threatened.

Of critical importance to the world's ecological future is discovering how the Earth's ecosystems will respond to elevated carbon dioxide concentrations as well as other global-change phenomena expected to occur in the next century. Biological sciences professor Stanley Smith has spent the last 20 years at UNLV researching the unique plant life of Nevada's deserts in order to help

society better prepare for the impending effects of changing climate conditions.

"Global climate change is of imminent concern worldwide, and I am gratified to contribute to a greater understanding of its impact on arid regions, which are increasing in importance to the human enterprise," Smith says.

Currently, Smith is working as UNLV's lead principal investigator with the Nevada Desert Research Center (NDRC), located at the Nevada Test Site some 65 miles north of Las Vegas. The NDRC is an EPSCoR-supported collaborative effort between UNLV, the Desert Research Institute, and the »»»

University of Nevada, Reno; it includes two major research units: the Nevada Desert Free-Air CO₂ Enrichment Facility and the Mojave Global Change Facility. The NDRC has earned a reputation as a leading contributor to both the National Science Foundation and the Department of Energy's global change research programs.

Recognized as an international authority on the ecology of the Mojave Desert, Smith has produced a body of work that includes more than 90 publications in the fields of plant water use, photosynthesis, high temperature responses, invasive species, and global change. He has several recent publications in *Nature*, one of the most prestigious scientific journals in the world. In addition, he serves on the editorial boards of *Ecology* and *Ecological Monographs* and is the author of a book on the physiological ecology of North American desert plants.

Smith received his bachelor's and master's degrees in biology from New Mexico State University and his doctorate in ecology from Arizona State University. He was awarded a two-year post-doctoral fellowship at UCLA. He has also been a visiting fellow at the Australian National University in Canberra. Since 1998, Smith has brought more than \$5 million in research funding to UNLV and has directed the work of five Ph.D. candidates, eight master's degree students, and seven postdoctoral associates.



Hal Rothman [2004 Recipient]

Professor and Chair, Department of History

Not only is Las Vegas one of the world's premier resort destinations but, for the last two decades, it has also been part of the fastest-growing metropolitan area in the country. The town's unique history and continuing explosive growth make it an extremely interesting location for social historians to study and observe, according to UNLV history professor Hal Rothman, who is also department chair, author, editor, and resident expert on the history and culture of Las Vegas.

Rothman is perhaps the city's most quoted source on the people, infrastructure, and politics of what *Time Magazine* recently called the "new American city." To date, Rothman has authored several books about tourism and related culture, including *Neon Metropolis: How Las Vegas Started the Twenty-First Century* as well as *Devil's Bargains: Tourism in the Twentieth Century West*, which received a starred review in *Publishers Weekly* and also won the Spur Award for Best Contemporary Nonfiction from the Western Writers of America. He is also co-editor of a recent collection of essays entitled *The Grit Beneath the Glitter: Tales from the Real Las Vegas*, which offers additional insights and original analysis of the Southern Nevada experience.

While Rothman has compiled an impressive record of scholarly works, his writings are well received by general audiences; three of his books on western environmental and tourism history are being reissued in paperback. His public appeal can be traced to a

populist orientation.

"I don't believe you write history for your fellow scholars," Rothman says. "You write it for people so they will know, understand, and care about the issues affecting their lives."

In addition to his many public talks, Rothman has written for several nationally syndicated outlets, has consulted on major television network programs, and has been featured on National Public Radio, the Arts & Entertainment Network, and, most recently, CNN's "NewsNight" with Aaron Brown. He is increasingly a favorite of the international media and has narrated feature films in France and Germany.

Prior to coming to Southern Nevada in 1992 to help UNLV build a Ph.D. program in western history, Rothman's primary areas of research focused on national parks and social/cultural environmentalism. Although his writings about Southern Nevada have garnered the most public attention, Rothman continues to produce important works in other fields and recently completed a book about new urban parks using the Golden Gate National Recreation Area as a model.

Rothman, who was elected to the Nevada Writer's Hall of Fame in 2004, received his bachelor's degree in history from the University of Illinois at Urbana-Champaign, and his master's and doctoral degrees from the University of Texas at Austin. He also served a 10-year term as the editor of *Environmental History*, a leading international journal for scholars, scientists, and historians.

About Senator Harry Reid The highest-ranking Democrat in the U.S. Senate and Nevada's senior senator, Senate Minority Leader Harry Reid has worked actively through the years to support many of UNLV's major research projects. He has been instrumental in identifying significant resources to allow faculty to engage in a variety of investigative studies, particularly those related to the efficient use of alternative energy and the management of spent nuclear fuel. His support of the scholarly pursuits of UNLV faculty, especially as they relate to environmental studies, has been substantive. The Harry Reid Center for Environmental Studies and the Harry Reid Silver State Research Award have been named to honor his long-standing commitment to the university. Plans are also under way to develop the Harry Reid UNLV Research and Technology Park, expected to begin construction soon.



History professor Hal Rothman seeks to make history accessible. "I don't believe you write history for your fellow scholars; you write it for people so they will know, understand, and care about the issues affecting their lives," he says.

PHOTO BY GERI KODEY



In the next issue of *Fusion* ... Readers will meet Dr. Shashi Nambisan, the 2005 recipient of the Harry Reid Silver State Research Award. Nambisan, a civil and environmental engineering professor, is the director of UNLV's Transportation Research Center, a highly regarded research entity that examines critical local, regional, and national transportation issues. (He received this year's award just before *Fusion* went to press.) Please join us in congratulating him on receiving this prestigious award, and look for more details on his work in the next issue of *Fusion*.