NM STATE UNIVERSITY

Live, Learn and Thrive.™

New Mexico State University
College of Engineering
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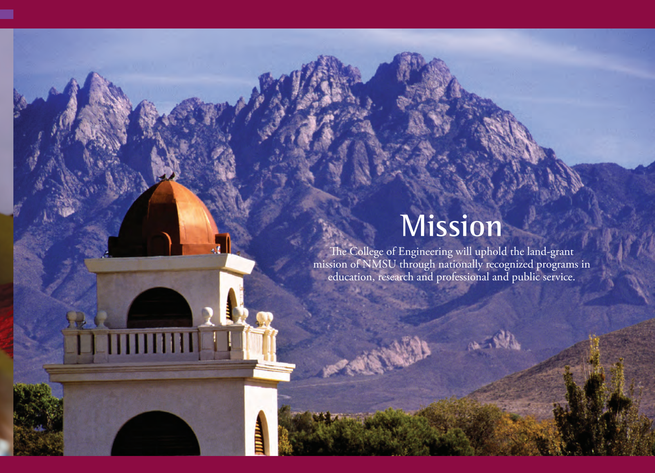
Las Cruces, NM 88003-8001

575-646-2911
engr.nmsu.edu

2007-2008
A Year in Review

NM STATE UNIVERSITY College of Engineering



Mission

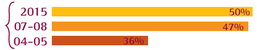
The College of Engineering will uphold the land-grant mission of NMSU through nationally recognized programs in education, research and professional and public service.

Freshman enrollment

Freshman retention

Total enrollment

Six-year graduation rate



Fall 2007 student gender

Fall 2007 student ethnicity

College Profile

Degrees Offered

Aerospace Engineering (BS, MS and Ph.D. pending)
Chemical Engineering (BS, MS and Ph.D.)
Civil Engineering (BS, MS and Ph.D.)
Electrical and Computer Engineering (BS, MS and Ph.D.)
Engineering Physics (BS)
Engineering Technology (BS, emphasis on Civil, Electronics and . Computer, or Mechanical)
Industrial Engineering (BS, MS and Ph.D.)
Information and Communication Technology (bachelor's in ICT)
Information Engineering Technology (bachelor's in IET)
Mechanical Engineering (BS, MS and Ph.D.)
Surveying Engineering (BS)

Staff

Tenured Faculty	47
Tenure-Track Faculty	24
National Science Foundation Career Awardees	5
Endowed Chairs	3
Endowed Professorships	16
Research Faculty and Staff	116

Research Centers

Bridge Evaluation Research Center

For more than 35 years, the program has been an important resource for bridge evaluation, bridge inspection training, smart-bridge technology development and broad-based research and development. The center offers the only Bridge Safety Inspection training program in the nation.

Center for Space Telemetering and Telecommunications

NMSU was designated as the first Telemetering Center of Excellence by the International Foundation for Telemetering for the study of telemetry systems, advanced communications, advanced modulation, coding, data transport and equalization techniques.

Institute for Energy and the Environment

The Institute for Energy and the Environment is a multidisciplinary research organization focusing on issues related to energy, water and the environment. Combining the resources of the Carlsbad Environmental Monitoring and Research Center, the Southwest Technology Development Institute, and the WERC Consortium for Environmental Education and Technology Development, IEE activities encompass research, analytical services, technology development and deployment, and dissemination of information through public outreach.

Manufacturing Technology and Engineering Center

M-TEC supports economic development in New Mexico by providing education, engineering, technical and other extension services to constituents at NMSU and throughout the state.

Research expenditures

(in millions)

College Leadership

Steven P. Castillo, Dean
Krist Petersen, Associate Dean of Academics
Rudi Schoenmackers, Associate Dean of Research
Patricia A. Sullivan, Assistant Dean of Advancement and External Relations
Martha Mitchell, Chemical Engineering Department Head
Ricardo Jacquez, Interim Civil Engineering Department Head
Stephen Horan, Electrical and Computer Engineering Department Head
Sonya Cooper, Engineering Technology and Surveying Department Head
Edward Pines, Industrial Engineering Department Head
Thomas Burton, Mechanical and Aerospace Engineering Department Head
Jim Conca, Director, Carlsbad Environmental Monitoring and Research Center
Anthony M. Hyde, Director, Manufacturing Technology and Engineering Center
Abbas Ghassemi, Director, Institute for Energy and the Environment

College Advisory Council

Floyde Adams
Adelmo E. Archuleta, Molzen-Corbin and Associates
Dan E. Arvizu, National Renewable Energy Laboratory, U.S. Department of Energy
Thomas M. Beall, V-F Petroleum Inc.
Joe Bechtol (retired), Northrop Grumman Corp./Vought Aircraft Company
John Burkstaller, Daniel B. Stephens & Associates Inc.
Christopher Scott Croshaw, Wilson & Co. Inc., Engineers & Architects
Robert W. Davis (retired), Chevron Chemical Co.
David L. Durgin, Verge Fund/Valley Ventures
Erika Edgerly, Intel Fab 11
John Galassini, Phelps Dodge Mining Co.
Timothy Gantick, Honeywell
Enrique Gomez, IBM Global Services
Sylvia Grace, Gilbert Unified School District
Keven Groenewold, New Mexico Rural Electric Cooperative Association
Walter Hines, CH2M Hill
Arthur D. Hurtado, Invertix Corp.
Carl O. Johnson, Northrop Grumman Corp.
Gen. Lester L. Lyles, The Lyles Group
Margaret S. Morse, The Boeing Co.
Robert G. Myers (retired), Northrop Grumman
Orlando T. Padilla, General Motors Corp.
Michael M. Reischman, National Science Foundation
J. Stephen Rottler, Sandia National Laboratories
Daniel M. Sachs, Team Technologies Inc./ Team Specialty Products Corp.
John E. Scruggs
Jerome Shaw, VOLT Information Sciences Inc.
Juan Silva, Raytheon Missile Systems Electronics Center
Samuel R. Skaggs (retired), Los Alamos National Laboratory
Jerry W. Strange (retired), El Paso Natural Gas Co.
Robert D.M. Tachau, Sandia National Laboratories
Eloy J. Torrez, SEI Group Inc.
Jeffrey L. Weiner, IBM Corp.
Karen Wells, Los Alamos National Laboratory
Allyson D. Yarbrough, Aerospace Corp.

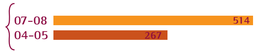
College endowment

(in millions)

Total gifts received

(in millions)

Number of scholarships awarded



Total value of scholarships awarded

(in thousands)

Accreditation

Baccalaureate programs in civil, chemical, electrical and computer, engineering physics, industrial, mechanical, and surveying engineering are accredited by the Engineering Accreditation Commission of ABET Inc. Baccalaureate programs in civil, electronics and computer, and mechanical engineering technology are accredited by the Technology Accreditation Commission of ABET Inc.

Commission of the Accreditation Board for Engineering and Technology, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012. Phone: 410-347-7700

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A Message from the Dean

In 2006, we set a goal of becoming one of the top 25 public engineering programs by 2015. This report outlines our progress toward many of the individual objectives in our strategic plan as well as other noteworthy achievements for the college; I believe that we are making great strides.

In the area of enrollment we've seen substantial improvement, with 2007 bringing in the largest freshman class in a decade. Our freshmen retention rates have increased substantially, thanks in large part to the positive impact of Integrated Learning Communities, which help retain students who are under-prepared in mathematics. As I write this, 2008 enrollment is exceeding our goals, putting us on track to another record freshman class. I'm proud to report that the incoming class includes several national merit finalists.

We've made significant progress toward increasing endowments. Over the past year, we added five professorships and raised our total endowment by some $2 million.

One of our greatest strengths lies in strategic research programs addressing aerospace, energy, information sciences, transportation and water. This report provides an overview of major projects in these important areas.

I would like to share some of the public recognition we've received. *US News and World Report's* ranking of best engineering graduate schools places us 69th. *Hispanic Business Magazine* singled us out as one of the 10 best engineering graduate programs for Hispanics.

As always, our focus remains on providing students with a top-notch education, even as we deliver solutions to societal challenges through research. Our success is due in large part to the strong support of friends, alumni and corporate partners. We are sincerely grateful to those who recognize the value of providing an excellent education to tomorrow's engineers.

I close on a somber note, reporting with great sadness the loss of James John Allen, assistant professor of mechanical engineering, and Russell Paul Jedlicka, associate professor of computer and electrical engineering. Russ Jedlicka's association with NMSU began in 1977 as a graduate student, and he joined the faculty in 1999. James Allen joined our faculty in 2004. Students, friends and colleagues from all over the world are deeply saddened by the loss of these two outstanding people. Our thoughts are with their friends and families.

Sincerely,

Steven P. Castillo
Dean, College of Engineering
NMSU Regents' Professor

Big computers help develop tiny planes

Researchers are harnessing the power of the Army's supercomputers to help develop tiny airplanes with large potential for military applications.

Mechanical engineers completed the first year of Micro Air Vehicle (MAV) research as part of a consortium that received a $215 million, five-year contract from the Army Research Laboratory to manage the Army's High-Performance Computing Research Center (AHPCRC). NMSU receives $660,000 a year as part of this contract.

Engineers are working on the development of hand-sized MAVs that soldiers could carry into the battlefield and launch on military missions.

Mingjun Wei, assistant professor of mechanical engineering, is developing a high-performance computing (HPC) code to simulate the flapping and twisting motion of three-dimensional flexible wings.

"Flapping wings can be more energy efficient, flexible wings can be more energy efficient," said Wei. "This is very important because of the small size of MAVs – they are limited to the power provided by a battery."

Wei and graduate student Tao Yang are using a method that solves the fluid equations (air flow) and the solid equations (wing structure) simultaneously in simple computational grids. This method is faster and more accurate than an alternative method that computes the flow and structure separately and gets the solution by iterations.

The computing power necessary to conduct Wei's three-dimensional numerical simulations is beyond the capability of most computers. Wei must rely on the Army's high-performance supercomputers to perform his simulations.

Banavara Sashikanth, assistant professor of mechanical engineering, is developing mathematical models to describe this complex interaction between the moving wings and the surrounding air flows. The model system can be solved very fast on a laptop computer, providing the possibility for "real-time" control and design. The model results will be used in the comparison with numerical simulations and experiments.

Validation experiments on scaled hummingbird models, flapping plate models and vortex ring-sphere interactions are being conducted by mechanical engineering graduate students. They are using a scale model that can mimic the wing motion of an actual hummingbird, allowing accurate measurements and observations of how air flows around the wings as they flap. The experiments will provide verification and validation studies for Wei's HPC simulations.

The AHPCRC conducts fundamental research in computational science and high-performance scientific computing. The program focuses on the research and modeling of battlefield environments, sensor networks, enabling technologies, lightweight combat systems, survivability and nano- and bio-sciences. The consortium managing the AHPCRC comprises NMSU, Morgan State University, the University of Texas at El Paso, NASA Ames Research Center and High Performance Technologies Inc. Stanford University leads the group.

Aerospace:

Rocket science in the U.S. had its beginnings in New Mexico. NMSU, already heavily involved in aerospace research, will be leading its future with the only degree-granting aerospace program in the state. Some current projects include systems that monitor materials behavior, biomimetrics to understand the mechanisms that allow birds and fish to generate thrust, computer simulation of structural vibrations, nanosatellites, unmanned aerial vehicles and the development of robotics to control aerospace vehicle maneuvers. Mechanical and electrical engineering students are working on an autonomous blimp as a senior capstone project.

Institute for Energy and the Environment leads development of solar codes, standards

The Institute for Energy and the Environment is currently in its second year as the lead agency for the Solar America Board for Codes and Standards (Solar ABCs), a five-year, $4.2 million program funded by the U.S. Department of Energy to consolidate, prioritize and implement national codes and standards that promote safe and reliable deployment of solar technologies in the U.S.

The Solar ABCs is a 10-member consortium that includes Arizona State University, BEW Engineering, the Interstate Renewable Energy Council, the Florida Solar Energy Center, Underwriters Laboratories, North Carolina State University, PowerMark, Sunset Technologies and Brooks Engineering

During the past year, the Solar ABCs have produced eight major study reports for policy makers, utility planners, engineers and solar designers to use in their decision-making processes. Each report examines a different concern or barrier posed by current codes, standards or policies and outlines specific actions that can be taken to effectively reduce or eliminate the problem.

The Solar ABCs also completed a year-long gap analysis, during which they obtained information from hundreds of solar energy stakeholders to define their highest perceived needs for reducing barriers to the use of photovoltaics in the U.S.

"The gap analysis was critical to planning the Solar ABCs' activities for the remaining four years of this program. The issues we identified include concerns with advanced metering, building and electrical codes, and fire safety and performance ratings, among others," said Andrew Rosenthal, IEE program manager.

"We obtained information from hundreds of major photovoltaic stakeholders throughout the United States, including private industry, utilities and municipalities, to find out what they think are the shortcomings in existing standards and barriers to the deployment of photovoltaics," said Rosenthal. "We distilled their responses to the 10 most pressing needs, and that constitutes our marching orders for the next few years."

Solar ABCs grew out of the Solar America Initiative, a technology and market transformation program to accelerate widespread commercialization of clean solar energy technologies by 2015.

"Implementation of effective codes and standards is essential to the growth of solar power in the U.S.," said IEE Director Abbas Ghassemi. "NMSU's role in this area serves the interests of the people of New Mexico and the country."

Learn more about Solar ABCs at www.solarabcs.org.

Energy:

The College of Engineering continues to build on its expertise in fuel-cell technology, renewable resources and electric power systems engineering to address the growing nationwide demand for power. We are examining ways to develop alternative sources of energy and utilize traditional fossil resources to provide cost-effective, distributed electricity to our communities. IEE provides innovative research in alternative energy and water, and our Electric Utility Management Program has a 40-year history of producing students with the engineering skills and business acumen to serve as leaders in this complex industry.

Free ride for BalloonSat yields big success

No aimless wanderer, NMSU's latest student satellite was a hitchhiker with a purpose. Catching a ride on a test flight of a new NASA experimental balloon in late May, the little "BalloonSat" proved itself viable, sending photographs from on high, taking measurements that will further cosmic-ray research and validating engineering technologies for an orbital satellite flight sometime in the future.

The project had its roots in 1999 as part of an Air Force-funded project to design and build three nanosatellites that would fly in a constellation. The current nanosatellite project began in 2003 with a scientific payload important to NASA's program to search for ultra-high-energy cosmic rays. The satellite project has involved more than 100 electrical and mechanical engineering students in their senior design courses.

"NASA wants to build a large space-based detector to look for ionization tracks made in the atmosphere as the highest energy cosmic rays pass through," said Steve Stochaj, leader of the university's aerospace research cluster.

The cosmic ray satellite was funded by the Air Force in its highly competitive university nanosatellite program, but it was not selected for launch aboard a rocket. Additional funding to ready the satellite for a balloon launch was obtained from the International Foundation for Telemetering, thereby ensuring that the science mission would be conducted.

To support the data collection for the cosmic ray studies, the NMSU team needed to develop the means to control the satellite and receive data over a radio link. To make this happen, ground stations using laptop computers were developed for placement at the New Mexico launch point in Fort Sumner and the Arizona down-range stations. The laptop computers controlled the satellite either directly through an operator interface or over the Internet with a control operator on campus. The onboard flight computer processed operator commands; it is also capable of controlling the satellite on its own.

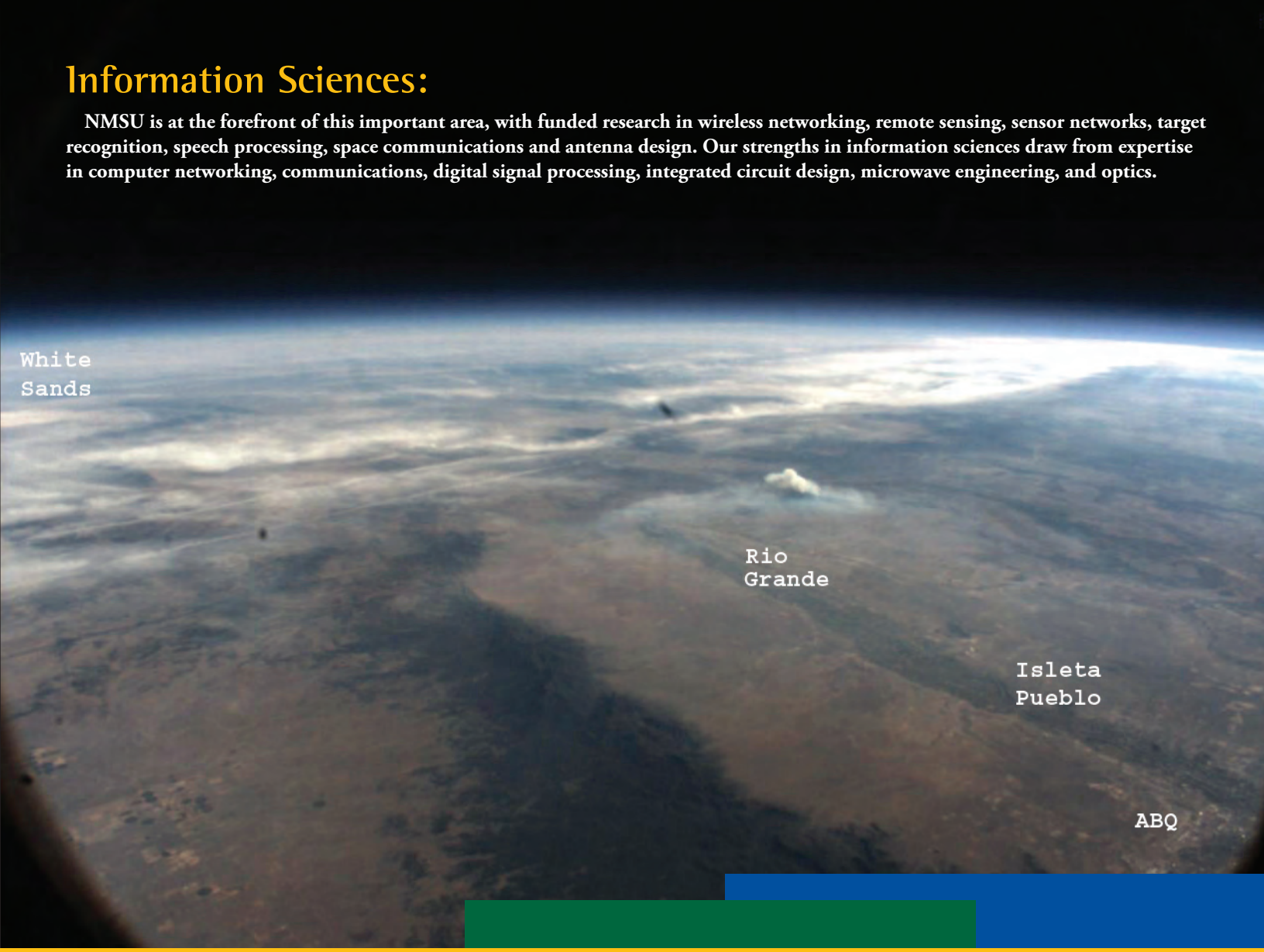
NMSU's Physical Science Laboratory, which launches scientific balloons for NASA, provided an opportunity for the payload to hitch a ride with an experimental flight that was planned to test a new NASA balloon to support scientific research flights.

The balloon was launched from NASA's facility in Fort Sumner on May 31, and was aloft for approximately 30 hours. The payload was powered for some 21 hours, giving the instruments ample opportunity above the earth's atmosphere to get the desired ultraviolet measurements and ensure that the hardware, software and sensors were all operating properly. The payload was also equipped with a camera that was operated via computer to take random shots of Earth. Google Earth was used to identify locations on the photographs.

"It served as a dry run for an actual orbit and proved that it will work. We were able to test our instruments, gather science data and even remotely control the operations over the Internet from campus," said Stephen Horan, head of the Klipsch School of Electrical and Computer Engineering. "This will help us gain other opportunities to launch payloads."

Information Sciences:

NMSU is at the forefront of this important area, with funded research in wireless networking, remote sensing, sensor networks, target recognition, speech processing, space communications and antenna design. Our strengths in information sciences draw from expertise in computer networking, communications, digital signal processing, integrated circuit design, microwave engineering, and optics.



Civil engineers raise bridge evaluation

State-of-the-art procedures in bridge evaluation have shown that several New Mexico bridges can handle load capacities that are up to 20 percent higher than originally thought.

Greater bridge load capacities could lead to savings for the trucking industry, eliminating the need for detours around bridges with low-load capacities. The new evaluation methods could lead to reduced costs in bridge refurbishment and new construction.

David Jáuregui, associate professor of civil engineering, recently concluded research for the New Mexico Department of Transportation, and is currently conducting research for the Federal Highway Administration utilizing new methods to evaluate load capacities of bridges.

Load ratings determine the level of load a bridge can routinely handle over its service life and also the maximum occasional overload (those exceeding the legal limit, usually 80,000 pounds) that the bridge can safely accommodate.

The new procedures have been used in New Mexico to evaluate two Las Cruces bridges along with a bridge near Lordsburg and another near Hatch.

The bridge research team uses field testing and computer analysis methods that capture the three-dimensional behavior of bridges. First, sensors attached to various points collect strain measurements as a loaded vehicle travels over the bridge. The data is compared to a finite-element computer model of the bridge to determine if the actual behavior of the bridge recorded by the sensors is similar to that of the model.

Normally, bridge load capacities are based on the design assumptions of a bridge, and typically these estimates are conservative.

Jáuregui said the new evaluation techniques could be used starting with the construction of a new bridge to create a baseline and track bridge behavior over its service life to help engineers inspect, evaluate and develop better construction methods.

"This is a cost-effective application of technology to evaluate bridge performance and supplement visual data gathered during inspections," said Jáuregui. "It's a good investment to ensure the safety and serviceability of our bridges in the long term."

Transportation:

NMSU has a 35-year history of research and collaboration with industry through the Bridge Evaluation Research Center, working to improve the safety and performance of our nation's bridges. This program fostered our world-renowned research in "smart bridge" technology that incorporates fiber optics to monitor bridge performance. Our research also extends to new technologies for improving highway safety, evaluation methods and performance.


DELL

Research to tap into saltwater reservoirs

An interdisciplinary team of water researchers from NMSU will soon take steps toward making saltwater reservoirs that lie underneath most of the state of New Mexico usable for human consumption.

The Institute for Energy and the Environment received a two-year award totaling $929,000 from the Office of Naval Research for investigating desalination processes.

IEE, in partnership with the Water Resources Research Institute and General Electric Water and Process Technologies, will conduct research to improve current desalination processes while reducing the associated costs.

The project will take place at the Brackish Groundwater National Desalination Research Facility, located in the Tularosa Basin in Alamogordo, N.M. The basin has extensive saltwater resources; within a five-mile radius, water ranges in salinity from 2,000 to more than 100,000 parts-per-million based on total dissolved solids.

"The only source of new water for New Mexico in the near future will come from treating our abundant saline groundwater," said Karl Wood, director of WRRI.

Researchers will evaluate a General Electric-developed system that can recover up to 94 percent of fresh water. It is capable of desalting up to 12,000 PPM, which is adequate to treat the water chemistries available at the planned test site.

Researchers will also consider other technologies that are currently used for brackish water desalination, such as thermal treatments, concentrate management, membranes and reuse/recycling technologies.

Information gathered through the course of the project will be used to build a web-based cost-benefit model designed to be user friendly. It will allow users to input site-specific information about water chemistry and usage and will recommend options for desalination technologies that might be used in that environment, along with the costs for utilizing those technologies. The model, anticipated to be complete next year, will be available at no cost to all who wish to use it.

The grant will give students the chance to participate in a number of applied-science opportunities. Along with NMSU researchers, GE engineering personnel will be at the site to serve as mentors to students working on the project.

"We will also be investigating ways to use renewable energy to power the process. One of the biggest barriers to producing affordable water is the cost of the energy used in processing," said Abbas Ghassemi, IEE executive director.

Water:

Our expertise in ensuring water quality and quantity crosses a number of disciplines that address local issues for our arid region but have worldwide application. Such research includes novel methods of desalination, cost-effective methods to remove arsenic and other contaminants from drinking water, and the use of satellite data to measure agricultural crop evapotranspiration. Our goal is to combine innovation and technology to provide clean, affordable water today and in the future.

$1.5 million to establish water laboratory

The College of Engineering received a gift of $1.5 million from the Freeport-McMoRan Copper & Gold Foundation to establish the Freeport-McMoRan Copper & Gold Water Quality Laboratory.

"We are very pleased to be a partner with NMSU to ensure that the academic and research needs of the state and region are met in an effective manner," said John Galassini, senior vice president of Freeport-McMoRan Americas and NMSU engineering alumnus.

"The establishment of this water quality lab represents cutting-edge research capability that does not currently exist within the state or the region. The lab will also be an important addition to the campus-wide natural resources research cluster initiative, which supports the development and implementation of strategies that build sustainable water, energy and land resources," he added.

The gift will be used for the development of a full-service analytical laboratory. The facility will be equipped to identify the chemical and colloidal characteristics of a water/particle system.

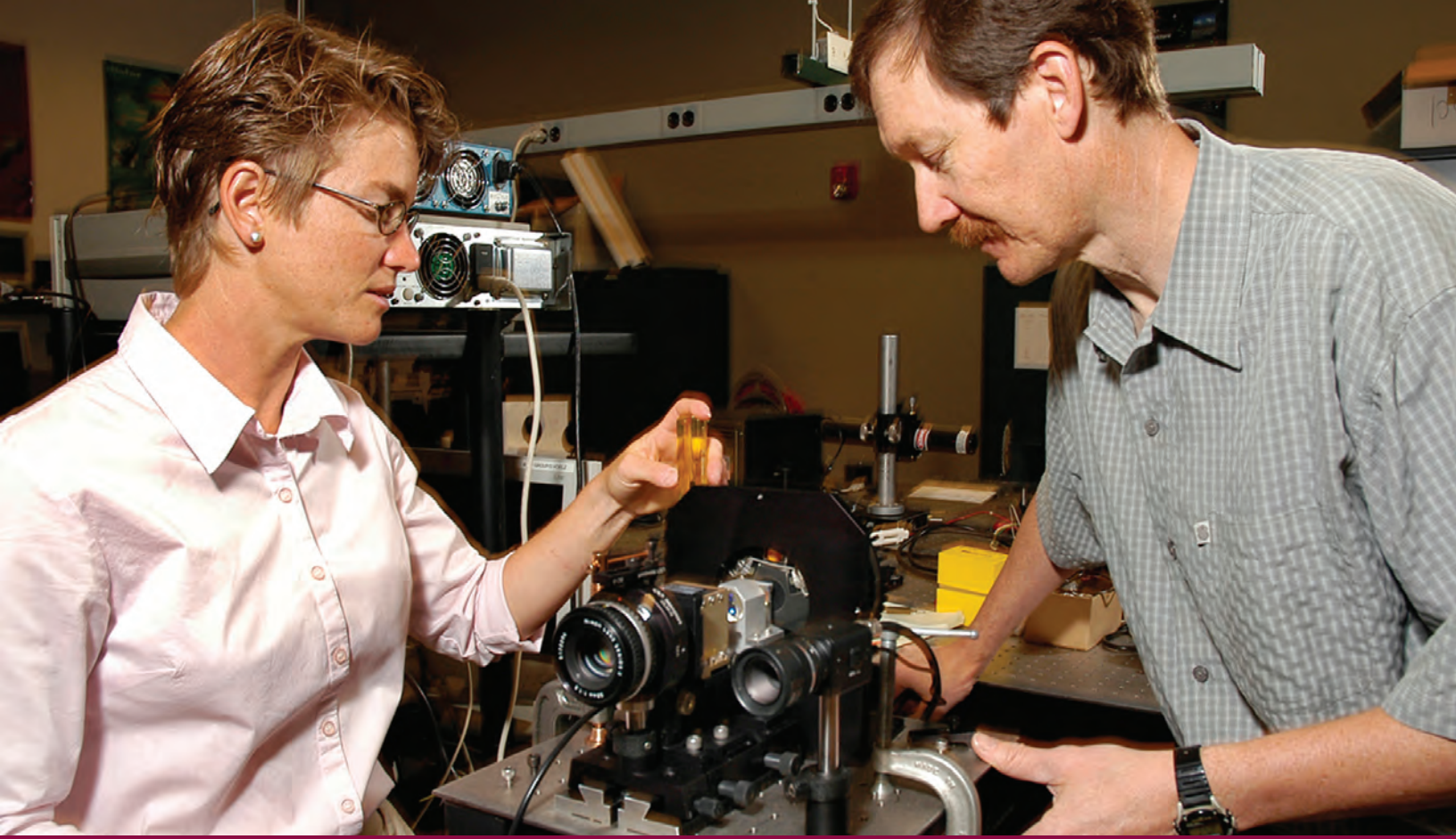
An estimated $1 million will be used to acquire analytical equipment to support the laboratory. The remaining $500,000 will be placed in an endowment with the NMSU Foundation, with annual earnings used to support and maintain the laboratory.

The College of Engineering has identified water as a strategic research area and is conducting numerous research projects in the civil and chemical engineering departments as well as through the Institute for Energy and the Environment.

Water research at NMSU has gained federal support through the efforts of the state's Congressional delegation. U.S. Sen. Pete Domenici secured federal funding to support an NMSU-General Electric partnership to investigate technologies to treat New Mexico's large reservoir of saltwater. U.S. Sen. Jeff Bingaman, chair of the Energy and Natural Resources Committee, introduced a comprehensive water resources bill to address a range of issues that fall within the committee's jurisdiction.

Significant gifts to the college:

- Tektronix Inc. equipped a state-of-the-art electronics laboratory with a gift valued at $211,000.
- Mechanical engineering alumnus C. Gerald "Jerry" King donated $50,000 to establish endowed scholarships for students from rural schools.
- Western Refining Inc. donated $50,000 to provide scholarships, support recruiting and retention, and fund student research projects.
- Engineering alumnus Robert "Bob" Myers donated $250,000 to establish an endowed department head professorship.
- Civil engineering alumnus William "Bill" C. Wells, Jr. established the Wells-Hatch Family endowed professorship in civil engineering, with a $125,000 gift that was matched by the state of New Mexico.
- Robert "Bob" Davis donated $125,000 for a new professorship in chemical engineering; his gift was matched by the state of New Mexico.
- El Paso Electric contributed $50,000 toward the establishment of the William Kersting Endowed Chair in Power Systems Engineering.
- Arizona Public Service Co. made the second of three $50,000 donations toward the establishment of the William Kersting Endowed Chair in Power Systems Engineering.



Philanthropy:

Gifts to the college truly make a difference to students, who are able to achieve their dreams of an engineering degree, and to faculty, who gain learning and research opportunities that result in beneficial discoveries. David G. Voelz, associate professor of electrical and computer engineering, teamed with NMSU astronomer Nancy Chanover to build a portable version of a hyperspectral imaging system that can be used in a wide range of applications, from remote sensing of agricultural crops to the study of weather phenomena. Voelz is the recipient of the Paul W. and Valerie Klipsch Professorship in the Klipsch School of Electrical and Computer Engineering.

Presidential honors awarded to civil engineering professor Jacquez

Civil engineering professor Ricardo B. Jacquez received a Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring, a program supported and administered by the National Science Foundation.

For more than two decades, Jacquez has mentored and served as a role model for hundreds of students throughout the state. He is co-founder and director of the Louis Stokes Alliance for Minority Participation, established in 1993. From 1992 to 2004, STEM degree awards more than doubled and baccalaureate degrees awarded to underrepresented students increased from 24 to 42 percent.

"Undergraduates conducting research is the 'gelling agent' of an undergraduate education. These students not only apply what they are learning, but they also learn to formulate questions that lead to new discoveries," Jacquez said.

"Mentoring in this context is a balance of nurturing their development while providing authoritative direction. Most important in the process is the observation of the individual student – recognizing who and where they are and what they need," he added.

Jacquez recalls the role that mentoring played in his own path: "I remember the day that John Hernandez (emeritus professor of civil engineering) asked me if I'd ever considered graduate school. I hadn't – but in that single incident he sent the message that I was capable, and I made the decision to follow his example."

Faculty honors:

• A. Salim Bawazir, assistant professor of civil engineering, was recognized as the Outstanding Conservationist for 2007 by the Sierra Soil and Water Conservation District of New Mexico.

• College of Engineering Dean Steven P. Castillo was appointed to serve on the National Science Foundation Directorate for Engineering Advisory Committee.

• James L. Conca, Abbas Ghassemi, Ricardo B. Jacquez and Andrew L. Rosenthal were honored for winning research awards that received funding of $1 million or more during the 2006-2007 fiscal year.

• J. Phillip King, associate professor of civil engineering, was awarded the NMSU Donald C. Roush Excellence in Teaching Award.

• David G. Voelz, associate professor of electrical and computer engineering, received the Paul W. and Valerie Klipsch Professorship.

• Dean Castillo was named one of the most important Hispanics in technology by *Hispanic Engineer and Information Technology* magazine.

• Shuguang Deng, associate professor of chemical engineering, was presented with the University Research Council Award for exceptional achievement in creative scholarly activity.

• Paola Bandini, associate professor of civil engineering, received the NMSU Patricia Christmore Teaching Award, which recognizes and rewards superb junior tenure-track faculty members for excellence in teaching.

• John Wiles, program manager for IEE, was elected to be a Fellow of the American Solar Energy Society in recognition of his service in the advancement of solar energy.

RODNEY CHOICE, CHOICE PHOTOGRAPHY

"There is no greater impact on the technological future of this country than retaining freshmen and sophomore science, technology, engineering and mathematics majors."

Dr. Ricardo Jacquez

Engineering students rewarded with honors, scholarships

Students continued to gain recognition from both inside and outside the university. Alumnus Marzyeh Ghassemi was named a British Marshall Scholar and is now studying bionanotechnology at Oxford University's Life Sciences Interface Doctoral Training Centre.

Ghassemi is no stranger to success. She earned degrees in electrical engineering, computer science and mathematics. As an undergraduate she was named to *USA Today's* All-USA College Academic Team, garnered the esteemed Goldwater Scholarship and was chosen as outstanding senior in the College of Engineering and the College of Arts and Sciences.

She is the second NMSU graduate to receive the Marshall award, among the most prestigious offered and considered comparable to the Rhodes scholarship.

Student achievements:

- Fall 2007 Graduation Honors: Outstanding Senior Jose Alanis, Outstanding Master's Student Sri Raga Sudha Garimella, Outstanding Doctoral Student Xiumin Diao, Highest Honors Student Andrew N. Daumueller.
- Spring 2008 Graduation Honors: Outstanding Senior Mohammad Ghassemi, Outstanding International Student and Engineering Honors Student Arely Torres.
- Gamma Chi chapter of Eta Kappa Nu, the national electrical and computer engineering honor society, was awarded the Outstanding Chapter Award for the second year in a row.
- Eric Rodriguez, president of the NMSU Student Chapter of the Society of Hispanic Professional Engineers, was honored by the national organization for his leadership.
- A team of six surveying engineering students won second place overall in the 2008 National Surveying Engineering Competition.
- For the second consecutive year, the Concrete Canoe team won first place overall in the American Society of Civil Engineers Rocky Mountain Regional Competition.