Engineering to build prototype of transportable renewable power generating system

Sierra Nevada Corporation has provided a $1 million research project to the University to develop a transportable, renewable-energy, power-generating system that could produce enough power to supply a small village.

The College of Engineering is bringing together experts from multiple disciplines and integrating a number of technologies to develop a solar-thermal, power-generating system. The Desert Research Institute will assist with the project.

“We’re combining mechanical, thermal, electrical, advanced composites and materials and chemical engineering with renewable energy principles into the design and testing of a lab-scale system,” said Mano Misra, primary researcher on the project. Misra is also the University’s Renewable Energy Center director and a materials engineering professor.

“The test system will initially focus on storage to generate about 40 to 60 kilowatts,” he said. “The transportable system has a number of important applications since it produces both thermal and electric energy. Electricity and water production are crucial needs in remote and disaster locations.”

“Today, these needs are usually met with diesel generators. The transportation of diesel fuel is difficult and very expensive. This system will be inexpensive, efficient and renewable,” Misra said.

In disaster situations, such as that experienced in Haiti following a major earthquake, the system could be quickly transported to the area to provide life-saving power and water. Since the system operates on clean solar energy, relief efforts could dramatically reduce the fuel they transport and instead focus on more important food and medicine.

Mano Misra, University materials engineering professor and primary researcher on the renewable-power generator project, meets with Scott Hansen, Sierra Nevada Corporation project leader, and Roger Jacobsen, research professor with the Desert Research Institute.

“Projects such as these exemplify our mission of working with industry to advance engineering, address important challenges, and provide economic benefits to Nevada,” Manos Maragakis, dean of the College of Engineering, said. “This is a model of how the College of Engineering can play a major role in the diversification of our economy, working collaboratively and alongside industry to integrate advanced materials and systems.”

—Mike Wolterbeek ’02

SNC SIERRA NEVADA CORPORATION

Sierra Nevada Corporation is a diversified high-tech electronics, engineering, and manufacturing corporation based in Sparks, Nev. SNC has grown into one of the top federal contractors, employing approximately 2,000 people in 35 U.S. locations across 20 states. After joining SNC in 1988, Eren Ozmen ’85MBA and her husband, Fatih Ozmen ’81MS (electrical engineering), who joined SNC in 1981, acquired the corporation in 1994. Eren is president and chairwoman of the board and Fatih is the company’s CEO.

—Keiko Weil ’87
Whether rich or poor, from the United States or China, illiterate or college graduates, parents who have books in the home increase the level of education their children will attain, according to a 20-year study led by Mariah Evans, associate professor of sociology and resource economics. The study has garnered international attention, being featured in hundreds of media outlets, including USA Today, The Washington Post and The Chronicle of Higher Education.

The massive study of more than 70,000 cases in 27 countries showed the difference between being raised in a bookless home compared to being raised in a home with a 500-book library has as great an effect on the level of education a child will attain as having parents who are barely literate (three years of education) compared to having parents who have a university education (15 or 16 years of education). Both factors, having a 500-book library or having university-educated parents, propel a child 3.2 years further in education.

The study also showed that having books in the home is twice as important as the father’s education level, and more important than whether a child is reared in China or the United States.

Evans was particularly interested to find that children of lesser-educated parents benefit the most from having books in the home. She has been looking for ways to help Nevada’s rural communities, in terms of economic development and education.

“The results of this study indicate that getting some books into their homes is an inexpensive way that we can help these children succeed,” she said. “You get a lot of ‘bang for your book.’ It’s quite a good return-on-investment in a time of scarce resources.”

According to the U.S. Census Bureau, Americans who have some college or an associate’s degree earn an average of $7,213 more annually than those with just a high school education, and those with a bachelor’s degree earn $21,185 more annually than those with just high school diplomas.

The study by Evans and her colleagues at Nevada, UCLA and Australian National University is one of the largest and most comprehensive studies ever conducted on what influences the level of education a child will attain. It was partially funded by the Nevada Agricultural Experiment Station.

The study, “Family scholarly culture and educational success: Books and schooling in 27 nations,” was published in the journal, Research in Social Stratification and Mobility.

—Claudene Wharton ’86, ’99M.A.
Nevada professors providing literacy tools for U.S. teachers

College of Education’s Literacy Center also gives first-hand help to local teachers and children

As schools across the country look for ways to help teachers bolster students’ literacy skills, school districts in every state are turning to the work of two Nevada professors for help.

“They won’t tell you this, but Dr. Bear and Dr. Templeton are world-renowned; they are considered the gurus in the literacy field,” said Nevada doctoral student J-Lynn Van Pelt, who was a struggling eighth-grade literacy teacher in the metropolitan Washington D.C. area when she found the work of Donald Bear and Shane Templeton, Words Their Way, a textbook and materials on teaching phonics, vocabulary and spelling.

“Many of my eighth-graders were at a second- or third-grade reading level,” Van Pelt said. “I was not prepared for teaching literacy in a diverse, urban environment, so I started looking for ways I could help these students. I found Words Their Way and started implementing it in the classroom, and started seeing huge gains.”

Bear, professor of educational specialties and director of the University’s E.L. Cord Foundation Center for Learning and Literacy, is lead author of the Words Their Way textbook, which is used by most colleges to teach future teachers. Nevada colleague Professor Shane Templeton, University of Virginia Professor Marcia Invernizzi and University of North Carolina-Greensboro Professor Francine Johnston are co-authors of the popular series.

The Literacy Center also provides an on-campus tutoring program based on Words Their Way that serves local schoolchildren. Graduate and doctoral students, such as Van Pelt, work with upper-division, undergraduate students in the College of Education to tutor the children.

“The growth that we see each semester by both the K-8 students who are taught at the clinic and by the pre-service teachers (undergraduate students) is incredible,” Van Pelt said. “This is one of the harder jobs I have ever had, but it is one of the most rewarding because of the visible growth that we see each and every semester.”

The Words Their Way program is “an active way of learning,” Bear explained, “based on the child’s development. The most important thing is to be mindful of the student’s development and to teach to it.”

For students who can’t come to the center, Bear helps schools incorporate the program into their classrooms, and provides a tutoring program, “Reading Buddies,” on-site at three local elementary schools. Bear is also working with 40 local ESL teachers to help them incorporate Words Their Way into their curricula.

—Claudene Wharton ’86, ’99M.A.
University welcomes many of Nevada’s top graduates, including National Merit Scholars

Last year marked the first-ever “Nevada Scholars Signing Day” ceremonies recognizing National Merit and Presidential Scholars and their choice to attend the University of Nevada, Reno. In this second year, the University continued its partnership with area high schools and held its first event in Las Vegas, in a ceremony reminiscent of a high-school athlete’s “signing day.”

Several high-achieving, high school graduates signaled their choice to stay in Nevada for their college education. Scholars recognized for their success and achievements were from Wooster High, Reno High and Douglas High schools in northern Nevada. National Merit Scholars honored in Las Vegas represented Advanced Technologies Academy, Centennial High School, Clark High School, Green Valley High School and Northwest Career and Technical Academy.

University President Milt Glick noted these students will be “critical to our success and to the state’s future success.” He added that the ceremonies are one way the University celebrates the achievements of top students who clearly deserve the limelight just as much as outstanding student-athletes.

“We want to recognize these students the same way we recognize people who are 6’8” with soft hands,” he quipped.

The University received sponsorship status by the National Merit Scholarship Corporation last spring. Scholarships awarded through National Merit programs are regarded as some of the highest academic honors attainable by U.S. high school students. The University’s student body currently includes 38 National Merit Scholars, the largest number ever enrolled at the University. National Merit Scholars receive a $15,000 annual scholarship funded through the University’s scholarship and financial aid budget.

—Natalie Savidge ’04

Nevada Silver & Blue wins Nevada press awards

The Nevada Press Association honored Nevada Silver & Blue magazine with several awards, including an honorable mention for General Excellence, in its Better Newspapers Contest 2010, Magazines Category. Awards were announced during the association’s annual convention and awards banquet held Sept. 17-18 at the Pahrump Nugget in Pahrump.

In addition to garnering an award for general excellence, the magazine won second place for Best Overall Design; second (Jeff Dow) and third (Theresa Danna-Douglas) for Best Portrait, second (Milton Glick) and honorable mention (K-von) for Best Local Column, as well as third for Best Multi-Color Ad (Patrick McFarland).

Editor’s note: Full contest results expected after this issue is printed. Please check our Facebook page for update: Search for “Nevada Silver & Blue.”

—Melanie Robbins ’06 M.A.
An enhanced, online digital map data depository for Nevada has been launched by the W.M. Keck Earth Sciences and Mining Research Center. “The Nevada Geospatial Data Gateway,” developed by Zachary Newell, lead developer for the Keck website at the Mathewson-IGT Knowledge Center, and Tod Colegrove, head of the DeLaMare and Ansari Map Library, was unveiled at the 20th Annual Nevada Geographic Information Society Conference and selected best-of-show in the artistic/innovative category.

The Keck website, http://keck.library.unr.edu, has undergone a complete redesign to enhance usability and functionality and, according to Colegrove, the plan is for it to continue to develop into “a geographic gateway.”

The site abandons the standard practice for governments and institutions who share new geographic information system (GIS) data to use a one-to-one approach, matching a separate data set to a specific resource—typically a Web front-end to a FTP site—with an end result of creating multiple data “silos” across the Web, instead opting for a single, customizable interface.

“This is a denser, richer, faster, more versatile interface that users can customize and add any images to at any time,” Newell said. “In the past, you could only request one map at a time. Now you can click on a location to bring up or overlay multiple maps.”

The Keck Center team continues to work with local, regional and federal agencies to enhance digital mapping applications and availability.

—Natalie Savidge ’04
New guidebook explores scenic Highway 93

Joshua trees, roadrunners and Hualapai Mountain Park are just a few of the sights that tourists and travelers will find along Nevada’s Highway 93 using a new guidebook published by the Nevada Bureau of Mines and Geology. Anyone—an experienced geologist, a budding naturalist, or someone who just wants to see the sights—can use the spiral-bound guidebook when traveling north from Wickenburg, Ariz. to Jackpot, Nev.

The guidebook describes interesting points of geology, animal and plant life, natural history and cultural history. “The book is great from my perspective,” Jon Price, state geologist and bureau director, said. “It’s geared for the general public, not the typical geologist or engineer for whom most of the Nevada Bureau of Mines and Geology maps and publications are prepared. It’s written for people driving along the route.”

The route can be covered in three or four days, or longer for those who want to slow down and smell the sagebrush.

The book, A Geologic and Natural History Tour through Nevada and Arizona along U.S. Highway 93, with GPS Coordinates was published by the Nevada Bureau of Mines and Geology at the University of Nevada, Reno in partnership with the Arizona Geological Survey.

—Krystal Pyatt, Class of 2010

Video game project to help blind children exercise

The human-computer interaction research team in the University’s computer science and engineering department has developed motion-sensing-based tennis and bowling exergames that are adaptations of the popular Nintendo Wii Sports exercise games. Known as exergames, these new types of video games are considered powerful weapons in the fight against obesity.

VI Fit (with VI standing for visually impaired), a research project to develop exergames without visual feedback, helps children who are blind become more physically active and healthy through video games that use physical activity as input.

“Lack of vision forms a significant barrier to participating in physical activity, and consequently, children with visual impairments have much higher obesity rates and obesity-related illnesses such as diabetes,” Eelke Folmer, research team leader and assistant professor in the computer science and engineering department, said.

VI Tennis and VI Bowling are the first of several games to be made available. VI Tennis implements the game-play of Wii Sports Tennis providing audio and vibrotactile cues that indicate when to serve and when to return the ball. The game can be played against the computer or with a friend using two Wii remotes. VI Bowling allows players to find the direction in which to throw their ball using vibrotactile feedback. Audio and speech effects are used to indicate the result of each throw. “We found our games engage children into levels of active energy expenditure that were high enough to be considered healthy, which shows the feasibility of using video games as a health-intervention method,” Folmer said.

The games can be downloaded for free using instructions at www.vifit.org. The site also reviews the equipment needed. The games are not affiliated with or endorsed by Nintendo.

—Mike Wolterbeek ’02
ASUN Bookstore partners with online textbook-rental company

In an effort to go a little easier on students’ pocketbooks while benefiting the student-government organization, the University’s student-owned bookstore joined with Chegg.com to pilot a textbook-rental option. Renting textbooks often saves students money, and doing so through Chegg.com now means the campus bookstore, owned and operated by the Associated Students of the University of Nevada, also benefits through a revenue-sharing agreement.

“It’s smarter to bring this program to campus rather than students taking their business off campus,” said Marie Stewart, director of the ASUN Bookstore. “This program helps us to better manage our inventory and overall saves students money. It is our intent to continue to look into and have lower-cost alternatives for our students,” she said.

Chegg.com is sharing a portion of its revenue from its rentals by University students with the ASUN Bookstore, and as a part of the company’s ongoing environmental efforts, they plant a tree every time a student rents from Chegg.com. Chegg.com has also partnered with Fresno State and California State University at Long Beach.

—Natalie Savidge ’04

Swans welcome family of four

As the University said goodbye to almost 2,000 graduates at its largest Commencement ever, May 14 and 15, the campus community also welcomed some newcomers: four fuzzy, white cygnets were hatched. They joined the two beautiful, adult white swans, Olivia and Zeus, on the campus’ Manzanita Lake.

Swans have populated the campus lake off and on since the 1930s. They add to the beauty and character of the 256-acre Reno campus, which is designated as a state arboretum. The campus continues to be a living collection of plants, trees, shrubs, flowers, ornamentals and native flora. The Quad is listed as a “Jeffersonian academic village” on the National Register of Historic Places.

For more information on the campus’ plants and trees, including a campus tree-walk map and guide, go to www.unr.edu/arboretum.

—Claudene Wharton ’86, ’99M.A.

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Photo by Jean Dixon
Budget cuts: What they mean to the University

In response to a legislative mandate in early 2010 to cut 6.9 percent—$11 million—from the University’s state-funded budget, which had already been reduced by $33 million, for a total of $44 million, Provost Marc Johnson led an extensive curricular review that involved faculty, staff and students, as well external constituents.

In May, the provost forwarded to the Nevada System of Higher Education Board of Regents a proposal that cut departments, closed majors and degree programs, and slashed more than $3.1 million from administrative units. The Board of Regents approved the plan, as well as a reduction proposal from UNLV on June 3. The state and community colleges’ and DRI’s reduction proposal was approved in April.

Board of Regents Chair James Dean Leavitt said that although the actions the Board of Regents were forced to take were “painful” and said, “You still feel that there are limitless possibilities for the state of Nevada.”

Addressing a University of Nevada, Reno Foundation board meeting June 24, President Milton Glick praised the goodwill of all involved, noting that the curricular review was carried out in “an extraordinarily collegial atmosphere,” given that the cuts that had to be made “were almost unprecedented in higher education.”

Early on, Glick said, he and the provost made the decision to make vertical cuts, rather than horizontal, or across-the-board cuts, explaining that rather than weaken the entire University, they wanted to make strategic cuts that would preserve strengths, cause the least damage and best position the University for the future.

“This is very painful,” Glick said. “It’s not in the nature of what Universities do—especially when it meant that tenured professors would lose their positions, which is also almost unprecedented in higher education.” He noted that the professors and programs that were cut were “very good” and the work that was being done was sometimes a professor’s life’s work.

Of the total $44 million cut since the recession began in 2007, the University has reduced faculty and staff by approximately 350 positions, but will not limit student enrollment, as some universities across the nation have, Glick noted. Enrollment is up by several hundred students from last year, currently exceeding 17,000 in fall 2010, with the number of National Merit Scholars reaching 38 for the fall semester—up from just four, four years ago.

Despite the difficult economic times, Nevada has also increased retention of freshmen to 80 percent, the highest in the University’s history. During May’s Commencement ceremony, the University awarded 66 percent more undergraduate degrees than a decade ago.

—Melanie Robbins ’06M.A.

Specific changes from cuts include:

**College of Agriculture, Biotechnology and Natural Resources:** The Departments of Animal Biotechnology and Resource Economics close, as will the following degree programs: animal biotechnology B.S., animal science B.S. and M.S., agricultural and applied economics B.S., environmental and resource economics B.S., and resource and applied economics M.S.

**College of Business:** The major in supply chain management will close.

**College of Education:** The college will be consolidated into one unit without departmental boundaries and the following degree programs will close: counseling and educational psychology Ed.D., Ed.S., Ph.D.; educational leadership Ed.D. and Ph.D.; educational specialties Ed.D. and Ph.D.; literacy studies Ed.D. and Ph.D.; and special education and disabilities studies Ed.D. and Ph.D. The Teaching English to Speakers of Other Languages M.A. will go on hiatus for five years. The college will offer a single Ph.D. in education with a concentration in strong research areas.

**College of Liberal Arts, including the School of the Arts:** Lower-division language courses will continue as justified by demand. In the Department of Foreign Language and Literatures, the minor offered in Italian and the minor and major degree programs in German Studies will close. The master of arts degree in Foreign Languages and Literatures will continue with specialization offered only in Spanish and French. The bachelor’s degree in interior design will close. The master of arts degree in speech and communication will go on hiatus for five years.

**College of Science:** A study will be initiated to evaluate the University’s approach to teaching of statistics.

**School of Medicine:** The school’s Center for Nutrition and Metabolism will close. Degrees awarded in a program that is subsequently closed will remain quality degrees issued from an accredited university. Of the University’s 17,000 students, program reductions will impact approximately 30 graduate students and 275 undergraduate students. Additional budget reductions have been and are being made in administrative services and athletic programs.

—John Trent ’85/’87, ’00M.A.
Horses have played a major role in almost all aspects of Nevada's development—in mining, farming, ranching, transportation and the tourism industry. Controversies relating to the management of wild horses on public lands have also been part of Nevada's history for several decades, and stories and images of wild horses occupy a prominent place in popular culture.

The Mathewson-IGT Knowledge Center is hosting several exhibits running from Sept. 15 through March to honor the horses that have helped shape Nevada's history and image. Exhibits highlight the evolving roles that horses have played in Nevada, and the interplay between the sometimes-conflicting interests of rangeland stakeholders—ranchers, federal and state governments, conservationists, tourists and horse lovers—around the treatment and fate of Nevada's wild horses.

Materials on display include film and audio recordings of Reno’s Wild Horse Annie (Velma Johnston) advocating for the passage of federal legislation protecting wild horses and burros from inhumane treatment, along with the collection of Gus Bundy’s powerful 1951 photographs of wild horse round-ups that helped her make her case.

Additional exhibit items are selected from the rich, primary research materials in Special Collections including photographs, congressional papers, divorce ranch business records, book and movie research files, and literary manuscripts. Special Collections books about horses by Will James, Terri Farley, Anthony Amaral and others are also on display.

Fall 2010 is also the 50th anniversary of the filming of the movie *The Misfits* in Reno, Dayton and the Pyramid Lake area. The star-studded film, written by Arthur Miller, directed by John Huston, and starring Clark Gable, Marilyn Monroe, Montgomery Clift, Thelma Ritter and Eli Wallach, turned out to be the last movie appearance for both Monroe and Gable. The wild horses, rodeo horses, and trained movie horses that played prominent roles in the film will be suitably honored in the exhibits and with a discussion and showing of *The Misfits* in February.

Check the library website for more information: knowledgecenter.unr.edu/specoll.

—Donnelly Curtis
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