University of Nevada, Reno engineer and researcher Gokhan Pekcan arrived safely back in his office after nine days in early March of surveying damaged public buildings in earthquake-devastated Chile as a member of a reconnaissance team for the Earthquake Engineering Research Institute.

“The three of us had to move fast and report back to EERI in advance of a large team that just arrived in Chile,” he said. The large team will use his observations and directions to more thoroughly document the effects of the 8.8 earthquake.

Pekcan and his two colleagues were in Chile through funding by EERI and Nevada’s College of Engineering to document damage to structures such as hospitals, post offices and other public buildings in an effort to see what can be learned about how buildings can be engineered to withstand earthquakes.

He flew into Santiago and traveled south to Angol for a 1,000-mile round trip through areas with no running water, but surprisingly not as much damage as he expected. He said many resources had been restored, so water and gasoline were available in many areas, but they went for four days without running water.

“We were there to survey the interior of the buildings and how the nonstructural elements, such as partition walls, ceilings and pipes, were impacted by the earthquake,” Pekcan said. “We visited nine hospitals, wharfs and other facilities. I expected to see entire cities collapsed, but reinforced concrete structures with shear walls designed according to the modern design codes held up. The older adobe-type buildings collapsed as one would expect, but not totally collapsed, so occupants were able to exit.”

In the general scouting survey, he found that the buildings with design flaws, such as one four-story apartment he observed, fell down, as one would expect. Yet, a properly designed 24-story apartment building next to it didn’t collapse. Pekcan, a faculty member in the University’s civil and environmental engineering department, described one hospital that showed the benefits of new Chilean building codes and the evolution of improved earthquake-resistant design.

“The older sections of the hospital received a large amount of damage, the more recent additions had less damage, and the new sections of hospital expansion showed only minor damage,” he said.

While he was there, Pekcan experienced two large earthquakes, a 7.2 and a 6.9.
“During the first we were in a small Zodiac boat surveying wharf damage and had to get to shore and scramble to high ground after tsunami warnings were posted. The second happened when we were surveying a moderately damaged paper plant,” he said.

Recovery efforts for the public buildings, especially in the interiors of the buildings, were happening quickly, so he and his colleagues, Eduardo Miranda from Stanford University and Gilberto Mosqueda of the State University of New York at Buffalo, had to move fast to document the damage.

“Our surveys have produced a lot of data and will likely feed into our research here at the University, and possibly even redirect our research progress, on the seismic performance of nonstructural systems,” he said.

The project, headed at the University of Nevada, Reno by the dean of the College of Engineering, Manos Maragakis, is part of a multi-institution effort funded by the National Science Foundation.

Another faculty member, Professor Ian Buckle, has been selected to lead an EERI team to study bridges in Chile. He is a faculty member in the civil and environmental engineering department and director of the Center for Civil Engineering Earthquake Research and the large-scale structures laboratory.

The Earthquake Engineering Research Institute is a national, nonprofit, technical society of engineers, geoscientists, architects, planners, public officials and social scientists. EERI members include researchers, practicing professionals, educators, government officials and building-code regulators.

—Mike Wolterbeek ’02

Gokhan Pekcan next to a fishing boat in Talcahuano, Chile that had been carried 1,000 feet from shore, damaging houses and shops along the way as the 8-foot tsunami wave generated by the earthquake washed through the port town.

Solar pond distillation system to protect aquatic habitats

Ecosystems of terminus lakes around the world could benefit from a new system being studied at the University to desalinate water using a distillation system driven by a specialized low-cost solar pond.

University researchers are using their newly patented, low-temperature membrane distillation system to study ways to reduce excess salinity in terminus lakes, such as Walker Lake, to make them more sustainable for aquatic habitats.

The project is under the leadership of Amy Childress, professor and chair of the civil and environmental engineering department, and Scott Tyler, professor in the geological sciences and engineering department.

“The proposed research is the first to provide an in-lake mitigation strategy for the salinity issues at Walker Lake,” Childress said.

Doctoral candidate Francisco Suarez, with the assistance of undergraduate student researcher Jeff Ruskowitz, has carried out theoretical and experimental investigations of the system. The laboratory system traps radiant heat within a 400-gallon tank, with collected energy powering the removal of salts. One of the biggest advantages of the system is its use of solar energy, which is plentiful in Nevada. Other desalination systems typically operate at high pressures, requiring a lot of electricity to purify the water. The system can operate 24 hours a day using the energy stored in the solar pond, with very little electricity use.

The process has been successful in the laboratory. Researchers are hoping to obtain funding needed to test the system at a closed-basin lake such as Walker Lake, where water levels have decreased 140 feet in the past 100 years, leading to high levels of salinity, which are dangerous and unsustainable for aquatic life.

—Skyler Dillon, Class of 2010
Nevada ranks among top 25 universities for Peace Corps

With 20 alumni now serving as Peace Corps Volunteers, the University of Nevada, Reno made its debut on the annual Peace Corps Top Colleges list for 2010.

The University ranks 25th among mid-size universities for the number of alumni in service — just behind Yale and tied with Brown and Emory Universities. This is the first appearance on the annual rankings for Nevada, which had 11 alumni in service last year.

“Why are so many Nevada graduates drawn to the Peace Corps?” asked Daniel Holman of Reno, who earned a degree in marketing from the University of Nevada in 2007. “I think it is a reflection on how well the University prepares students for today’s world.” Holman departs April 7 to begin training for a Peace Corps assignment in Botswana in organizational development.

“The curriculum includes an international and cross-cultural component that every student must complete, regardless of his or her major,” Holman said. “I feel this exposes students to issues they would not normally deal with and equips them with a mindset that they can make an impact.”

Fellow Nevada graduate Emilie Chapter of Las Vegas agrees. “Nevada cultivates an environment in which college students learn to be part of something bigger than themselves,” Chapter said. Chapter, who earned a degree in history in 2008, departed Feb. 2 to train as a rural health educator with the Peace Corps in El Salvador.

“Every club or society I was a part of or interacted with — fraternities, sororities, international clubs and social groups — all in some way contributed to community growth,” she said. The 20 University alumni in service span every Peace Corps assignment area and region, including agricultural work in Honduras, education in Jordan and business development in Niger.

Peace Corps is a 27-month commitment. More than 7,600 Americans are serving as Peace Corps Volunteers in 76 countries around the world. Volunteers assist local communities with projects that are designed to educate students, encourage economic development, protect and restore the environment, increase the agricultural capabilities of farming communities, expand access to basic health care for families and address HIV/AIDS prevention and care. Peace Corps Volunteers make lasting contributions to the United States and the international community by promoting mutual understanding between the peoples of the United States and other nations, responding to humanitarian crises and natural disasters, developing leadership skills among host-country nationals, and preparing America’s workforce with overseas experience.

Peace Corps Volunteers must be skilled U.S. citizens, at least 18 years old, and in good health. There is no upper age limit to serve. Peace Corps service includes training, transportation, a living stipend and medical care.

More information, including the annual Top Colleges ranking and online applications, is available at www.peacecorps.gov.

—Natalie Savidge ’04

Nevada universities collaborate to offer new Doctor of Nursing Practice degree

Next fall, the University of Nevada, Las Vegas and the University of Nevada, Reno will join the ranks of other prominent universities, such as Purdue, Duke and Johns Hopkins, in offering the Doctor of Nursing Practice degree. The unique collaboration of Nevada’s two universities will be offered entirely online to accommodate working professionals’ schedules.

“The Doctor of Nursing Practice program is essential to provide nurse practitioners with the increased skill set to provide the best health care for Nevadans, in partnership with physicians and hospitals,” said Carolyn Yucha, dean of UNLV’s School of Nursing.

Patsy Ruchala, director of University of Nevada, Reno’s Orvis School of Nursing, added that the new degree will also provide education in evaluation of practice and care delivery models and other administrative skills.

“The profession needs a higher level of preparation for leaders who can design and assess care, especially with the shortage of nursing personnel and the national concerns about the quality of care and patient safety,” Ruchala said. “The program will also help fill that need.”

Ruchala noted that students in the program who choose to take additional education courses will also be prepared to become nurse educators.

Students can choose the “Advanced Practice” or the “Nurse Executive” track for the second year of the two-year, 39-credit program. Each school plans to admit 14 students this fall. Faculty at each university will share the teaching load.

“At this time of economic crisis, this is a collaborative program that will better use resources within Nevada’s university system,” Ruchala said. “We are thrilled to be working with Dr. Yucha and UNLV to offer this collaborative degree that will benefit the entire state.”

—Claudene Wharton ’86, ’99M.A.
Fourth shake table unveiled at 25-year anniversary of earthquake simulation lab

The office swayed and jolted from side to side and the floor heaved upwards, as the “earthquake” shook from below, sending books off shelves and pictures off the walls.

It was the inaugural run of the latest addition to the University of Nevada, Reno’s earthquake simulation engineering lab: a fourth, 50-ton shake table. The shaking was part of a celebration of 25 successful years of constructing and destroying large-scale buildings and bridges in the name of science. The “office” was subjected to three separate ground motions, ending with an extremely violent seismic motion used to qualify industrial equipment. There was damage.

“The new, fourth shake table will greatly enhance our ability to more accurately represent the motions of an earthquake,” Ian Buckle, director of the Large Scale Structures Laboratory said. The 14-foot-by-14-foot, triaxial 50-ton-capacity table will be used individually and with the other three large shake tables for various experiments, such as a four-span bridge test to be conducted in the near future.

Buckle and his crew designed and assembled the innovative, $2.5 million table with monetary support from the National Science Foundation and the Federal Highway Administration.

“The earthquake research done here at the University and in this laboratory has discovered new knowledge, stretched intellectual boundaries and at the same time provided useful research,” University President Milton Glick said.

The Large-Scale Structures Laboratory is a member of the National Science Foundations’ George E. Brown Jr. Network for Earthquake Engineering Simulation. The lab, equipped with four large-scale, high-performance shake tables, is the only one of its kind in the world.

—Mike Wolterbeek ’02

University engineer
Ahmad Itani consults on Bay Bridge repairs

After a failed repair closed the San Francisco-Oakland Bay Bridge in October, who’d they call? They called Ahmad Itani, bridge engineer and professor in the University’s civil and environmental engineering department.

The California Department of Transportation asked Itani to serve on a panel to review and approve the department’s repairs on the Depression-era bridge.

Itani said the bridge’s age, combined with the volume of vehicle weight it must withstand each day as a key roadway into San Francisco, brings the bridge closer to the end of its lifespan and reduces its ability to withstand an earthquake.

“If I gave you a paper clip and told you to break it, it would just bend back and forth and eventually break,” he said in a Reno Gazette-Journal news article. “So with age, it is only a matter of time, which is why you replace a bridge after 70 years.”

As anxious commuters waited for the Bay Bridge to reopen, Itani worked with other members of the advisory panel throughout the Nevada Day weekend before the group gave their approval to Federal Highway Administration officials to reopen the bridge.

Itani’s prior experience with the bridge proved valuable, as he previously spent hours in meetings about it, as well as on the bridge itself. "One time, I spent most of the night on the bridge," he said. "I tell you, it was really cold up there at 4 a.m."

—Mike Wolterbeek ’02
Imagine packing skis into a suitcase, skis that never need wax or skis that hold a perfect line in all snow conditions. That’s just what students in Kam K. Leang’s mechanical engineering senior design course do. They imagine the possibilities of design, using nanotechnology.

Leang, assistant professor of mechanical engineering, is the principal investigator for the National Science Foundation-funded project to build a new curriculum that incorporates the department’s nanotechnology expertise. He aims to prepare 21st century mechanical engineers at the University to meet the emerging challenges of nanotechnology. The first step is to excite them about it.

“We want students to get enthused about mechanical engineering, to see the possibilities and potential of nanotechnology,” Leang said. “We’ve built a ski press and a couple pairs of prototype skis. I expect students will have something remarkable to ski on before the end of the ski season.”

“We’ll integrate nanomaterials into the construction of skis to improve performance and use the students’ skills in mechanical engineering to be inventive with ski design.”

The first class, last fall, designed two sets of skis. One uses a honeycomb-type box containing tiny metal balls, called a particle dampener, on the end of the ski to help dissipate energy and lessen the vibrations of the ski. The other set of skis folds to a convenient size that can fit in a car trunk or even in carry-on luggage at airports.

“It’s fun to see your accomplishments transfer from paper to an actual physical project,” student Stephen Greene said.

“I envision a competition like the annual concrete canoe races where we will all design and manufacture our skis under a set of rigorous, yet creative parameters, and then race them,” Leang said.

Teaching modules are being developed for dissemination to other snow-country universities, such as those in Vermont, Colorado and Utah.

As fun as it may be, the curriculum isn’t just for building skis. Practical, easy-to-relate-to macroscale applications for nanomaterials, such as aerospace structures and wind-energy turbine blades, have also been introduced into sophomore- and junior-level courses.

“The opportunities are endless,” Leang said. “It could be tennis rackets, racing car components or even accessories on wheelchairs.”

Two of his colleagues at the University, Jonghwan Suhr, director of the Multifunctional Nano-Composite Laboratory, and John Cannon, elementary science education professor in the College of Education, are helping to develop the new mechanical engineering curriculum.

—Mike Wolterbeek ’02

**Curriculum mixes nanotechnology and skiing**
Nevada business students study in Macau over winter break

Twelve students took advantage of their winter break to study in Macau and Hong Kong, as part of a new course offered by the College of Business, “Global Gaming: A Case Study of Business, Culture and Politics in Macau, China.” The graduate and undergraduate students studied the economic, political and cultural complexities of Macau, the gaming destination that has surpassed Las Vegas in total gaming revenues. They attended lectures by faculty, including Joseph Bozsik from the college’s Institute for the Study of Gambling & Commercial Gaming, and Gregory Mosier, dean of the College of Business. In addition to lectures held at Macau Polytechnic Institute, the students studied the operations of many of the lavish casino properties that have transformed Macau.

This course is part of the college’s international initiative that includes courses in London, Toronto and New York. However, this is the first time that the Macau opportunity has been offered to its gaming and business students. The University’s College of Business and Institute for the Study of Gambling & Commercial Gaming are world leaders in broadening the understanding of gambling and the commercial gaming industry.

—Claudene Wharton ’86, ’99M.A.

StoryCorps lifts Nevada’s oral history to national level

A Nevadan’s oral history is as much about the individual as it is about the state.

StoryCorps, an independent nonprofit project to record the stories of everyday Americans, will arrive in Reno on April 22 with an Airstream trailer outfitted with a recording studio to collect the stories of northern Nevadans as part of its 2010 cross-country tour. The StoryCorps visit is sponsored by KUNR 88.7, the region’s public radio station that broadcasts from the University campus.

“Some of the most powerful stories come from the people just down the street,” said David Stipech, KUNR general manager. “That’s the beauty of what StoryCorps is going to do—facilitate the conversation to get stories told that wouldn’t be told otherwise and that build the fabric of our community.”

StoryCorps is best known for its selected segments that air nationally on National Public Radio’s Morning Edition. StoryCorps interviews are conducted between two people who know and care about each other. With the participants’ permission, the interviews become part of an archive at the American Folklife Center at the Library of Congress for future generations to hear.

The University’s Oral History Program, which publishes and archives interviews of Nevada residents, appreciates that the StoryCorps visit will shine a spotlight on the concept of oral histories. The Oral History Program will sponsor a series of public workshops in April and May on how to conduct and record an oral history interview.

The StoryCorps visit is supported by the University, City of Reno and Nevada Humanities. For more information or to listen to stories online, visit www.kunr.org.

A long-time benefactor of the University of Nevada, Reno, the John Ben Snow Memorial Trust, has contributed $185,000 to the Oral History Program since 1995, including a $25,000 gift in 2009. See article page 71.

—Kathie Taylor, Class of 2011
Reynolds National Center for Courts and Media names names director

Ben Holden, a lawyer and long-time journalist, was named director of the Donald W. Reynolds National Center for Courts and Media, part of the Reynolds School of Journalism. The center, which also works closely with the University-based National Judicial College, is the only organization devoted to resolving conflicts between sometimes dueling constitutional rights guaranteeing both freedom of the press and fair trials.

“To date,” Holden said, “no clear voice has emerged on the American policy landscape to articulate the proper balance between our constitutional guarantees to open courts on the one hand and fair criminal trials on the other. This center can become that voice.”

Holden is a former reporter for The Wall Street Journal, who wrote law-related articles ranging from a profile of the prosecutor in the 1996 murder trial of rapper Snoop Dogg to sentencing issues arising from the Rodney King beating case, to a co-bylined piece on jury nullification in the 1995 O.J. Simpson double-murder trial. The Journal reported the story, Caesar confronted ethical issues daily, and at times hourly. His decisions have withstood industry scrutiny and received journalism's highest honor.”

“Technology has confused those First and Sixth Amendment guarantees even more, said Jerry Ceppos, dean of the Reynolds School of Journalism. "It seems every week a judge has to decide whether a blogger should get press credentials or whether a mainstream journalist can tweet from a courtroom, issues that didn’t even exist five years ago," he said. "These issues are perfect for a journalism school that specializes in issues surrounding innovation.”

Holden is a former reporter for The Wall Street Journal, who wrote law-related articles ranging from a profile of the prosecutor in the 1996 murder trial of rapper Snoop Dogg to sentencing issues arising from the Rodney King beating case, to a co-bylined piece on jury nullification in the 1995 O.J. Simpson double-murder trial. The Journal reported the story, Caesar confronted ethical issues daily, and at times hourly. His decisions have withstood industry scrutiny and received journalism's highest honor.”

Former Detroit Free Press executive editor winner expands journalism school’s area of emphasis

The Reynolds School of Journalism and Center for Advanced Media Studies has hired Caesar Andrews, whose editorial leadership at daily newspapers spans 30 years, as the Paul A. Leonard Distinguished Visiting Chair for Ethics and Writing in Journalism. Andrews will teach undergraduate courses in media ethics and multimedia reporting during spring semester.

“The relentless pressure for profit and new ideas has increased the ethical challenges for reporters, editors and publishers,” said Rosmary McCarthy, Reynolds School academic chair. "In initiating the signing of an ethics pledge in 2008, our students have demonstrated a desire to understand and apply ethical practices in all forms of journalism. Caesar brings extensive experience to the position to link theory with practical application.”

Andrews was executive editor of the Detroit Free Press when the paper published an investigative series that exposed illegal activity and sexual indiscretions in the mayor’s office. The subsequent scandal forced the resignation of Kwame Kilpatrick, one of the city’s most popular mayors. Kilpatrick later was jailed for perjury and obstruction-of-justice convictions.

The Detroit Free Press staff was awarded the Pulitzer Prize last year for best local reporting. Andrews retired in 2009.

“The political and legal scandals in the Kilpatrick story are only a fraction of the issues involved in investigative journalism,” said Jerry Ceppos, Reynolds School dean. “As executive editor of the team that researched and reported the story, Caesar confronted ethical issues daily, and at times hourly. His decisions have withstood industry scrutiny and received journalism’s highest honor.”

Andrews brings experience in academia to the Reynolds School. He has served on the board of the national Student Press Law Center, Council for Higher Education Accreditation, and on the Accrediting Council on Education in Journalism and Mass Communications.

“There is a role to be defined for us as journalists and others who publish content. If there is going to be a distinction between ‘us’ and ‘them,’ it is the ethical barrier,” Andrews said. “More enduring will be the foundation of trust and credibility that we must earn in the market for information. Journalists must get it right or die,” he said.

—Zanny Marsh ‘09MJM
Student use marketing skills to ‘integrate’ statewide earthquake drill

A dozen University marketing students spent much of their winter break not taking a break at all. Bob Alessandrelli, local business professional and University adjunct professor, taught an accelerated course in marketing communications during Wintermester in which students learned about the development and evaluation of integrated communications programs, management of brand messages and importance of building relationships with customers and other stakeholders.

Alessandrelli assigned the students a real-life client, the University’s Nevada Seismological Laboratory, and asked them to prepare an integrated marketing communications plan for a statewide earthquake drill held during Nevada Earthquake Awareness Week Feb. 21-27. The group met with their clients on the second day of class to get familiar with the specific marketing needs for the project.

The students were then divided into four smaller agency teams, with each team preparing a situation analysis, a copy platform and a media plan. At the end of the term, the teams presented their plans to a panel including members from the Seismological Laboratory, Nevada Bureau of Mines and Geology, and University Media Relations.

The student plans suggested ways to increase earthquake awareness and education through community and school participation. Some ideas included creating a dynamic and interactive Web site with the use of social media, partnering with local hardware stores for discounts on supplies, inviting local media personalities to become spokespeople, and throwing a pizza party for the winner of a classroom contest for creating the “Safest 72-hour Safety Kit.”

Director of the Nevada Seismological Laboratory Graham Kent answers earthquake questions from the third-grade class at St. Albert the Great Catholic School on Feb. 24 during Earthquake Awareness Week.

“Knowledge is power,” said marketing student Sierra Williams. “The key benefit to the statewide earthquake drill is the knowledge gained in order to act upon the hardships that occur during earthquakes, as well as implement skills learned in order to survive.”

“We are excited to partner with many organizations, especially students, in helping the state know what to do during an earthquake,” said Graham Kent, director of the Seismological Laboratory and professor in the Department of Geological Sciences and Engineering.

Earthquake Awareness Week was sponsored by the Nevada Earthquake Safety Council and coordinated by the University of Nevada, Reno. University seismologists, the Nevada State seismologist, Washoe County's emergency manager, and school staff all participated in a media briefing and drill for elementary school students at St. Albert the Great Catholic School on Feb. 24, using materials from the online program found at www.unr.edu/earthquake.

“With the recent earthquakes in Haiti and Chile, awareness is up and interest is high, making this an ideal time to impart important information to Nevada residents,” Kent said.

—Natalie Savidge, '04

Nevada’s part-time MBA program ranked in top 25 of the nation

According to indicators listed in BusinessWeek’s 2009 Top Part-Time MBA Programs report published this month, students who choose the University of Nevada, Reno to pursue their MBA already show some pretty good business savvy, just by choosing to attend Nevada. Notably, the report indicated:

- Nevada’s part-time MBA program ranked 21st in the country and fifth in the West.
- Nevada’s cost-per-credit-hour is only one-third of the cost-per-credit-hour of the next most affordable school ranked in the top 25.
- The Nevada program had a 99 percent completion rate. Only one school on the list, which included the nation’s top 69 part-time MBA programs, had a better completion rate (100 percent).
- Only four of the 69 programs that made the list had a lower cost-per-credit-hour than Nevada.
- The Nevada program ranked 10th in the nation in the academic quality category.
- In the eight-state Western region, Nevada was the only school outside of California to rank in the West’s top five.
- Graduates of the Nevada program report an average salary increase of 21.7 percent.

“We are very pleased to once again be ranked in the top 25 by BusinessWeek,” said Kambiz Raffiee, director of the program and associate dean of Nevada’s College of Business. BusinessWeek has issued the rankings twice now, and Nevada’s program has ranked in the top 25 each time. Raffiee said he is very pleased that the program fared so well.

“When you see that nationally, we ranked just two below USC, and two above NYU, that’s pretty good company,” he said.

—Claudene Wharton ’86, ’99M.A.