

HOWARD R. HUGHES COLLEGE OF ENGINEERING

university of nevada, las vegas

SUMMER
2008

The rotating stage at Cirque du Soleil's "KÀ" is an impressive feat of engineering. Dan Cook, a faculty member in the college, worked with the "KÀ" production team.



FIRST Team 987, from Cimarron-Memorial High School celebrates their championship with Calum Pearson (far left) of Cirque du Soleil and Dean Eric Sandgren (far right).

Cirque du Soleil Partnership Provides Unique Training for Students

Amazing performers, rotating stages, and elaborate productions come to mind when one thinks about Cirque du Soleil. In addition to its theatrical productions in Las Vegas, Cirque du Soleil is also working with the Howard R. Hughes College of Engineering to support several programs to educate the next generation of entertainment engineers.

Cirque du Soleil is a partner with UNLV in the entertainment engineering and design program, which is an interdisciplinary degree jointly managed by the Colleges of Engineering and Fine Arts. Tony Ricotta, chair of the entertainment engineering and design advisory board and the director of production for Cirque du Soleil's performance "O," says that the program at UNLV benefits because of Cirque du Soleil's high-profile name and resources.

"UNLV can build on Cirque's commitment to the newest and latest trends," said Ricotta. "The students in this program will have both the engineer's mind and the designer's mind to create something that's functional for the entertainment industry."

Cirque du Soleil has recently established a scholarship endowment for students in the entertainment engineering and design

program. This scholarship, in addition to the opportunities for students to gain hands on experience through internships, class tours, and access to resources, will help to recruit and retain talented students in this field.

"This program breaks the traditional mold of engineering education," said Eric Sandgren, dean of the Howard R. Hughes College of Engineering. "It represents a fresh approach, combining engineering technical expertise with the creativity of fine arts and the production of the shows on the Las Vegas Strip."

Joe Aldridge and Dan Cook, coordinators of the program for the College of Fine Arts and the College of Engineering, respectively, appreciate Cirque du Soleil's continued involvement with UNLV.

"Individual creativity is on the rise in this country and it's time we created a focal point for it. With Cirque du Soleil's help, we have the opportunity to expose our students to an excellent theater," said Cook.

Cirque du Soleil sponsored a team in this year's *FIRST* FRC Robotics Competition and allowed the students participating to get a behind-the-scenes tour of a show. The

Cimarron-Memorial High School team had the opportunity to work with Cirque du Soleil technicians on their robot.

"The team brought their robot to workshops at the Cirque du Soleil shows to get help and advice from our engineers in a type of mentorship," said Calum Pearson, director of technical and show support for resident shows with Cirque du Soleil. "Hopefully, offering our technicians and engineers to help the Cimarron team helped them learn something new and share that with other teams."

Cirque du Soleil, through support of the interdisciplinary entertainment engineering and design program, *FIRST* FRC Robotics, the Senior Design Competition, and numerous volunteer support efforts, helps to bring the latest industry trends to the students the College of Engineering.

Ricotta feels that the opportunity to work with UNLV is a natural fit for him. "For myself and others on the advisory board, we have been successful and are reaching peaks in our careers," he said. "We want to help the next generation start off on the right foot and continue to build the industry that we love." ●

MESSAGE FROM THE DEAN



Ah...the closing of a successful academic year. A year filled with accolades with which I am proud to be associated. Just a few examples of our success include:

- The resurgence of pride shown by our students in the form of painted green footprints leading from the science buildings on campus to the College of Engineering complex shows engineering's inherent connection to the sciences.
- A remarkable 219 students earned Dean's List recognition – 139 received scholarships.
- Three of our graduates – Valerian Kwigizile, Ph.D., Jacob Ludwig, B.S., and Lillian Ratliff, B.S., were honored by UNLV President David Ashley as Outstanding Graduates.
- The college has achieved a seven percent increase in applications from prospective students, including 14 top students from Clark County who participated in the *FIRST* FRC Robotics competition in March.

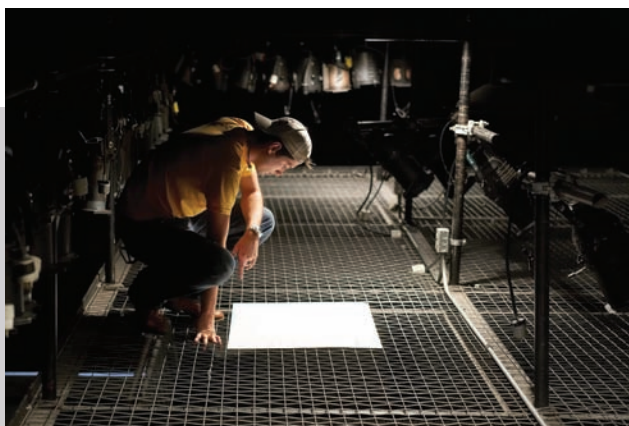
None of this could have been achieved without the commitment of those we serve – the community, future employers, our students, and our colleagues. I'm reminded of messages delivered by Regent Schofield and Regent Alden at our Senior Design Dinner. They called us to action and exemplified why we do what we do – for the pride of the profession and for our country.

What we experienced this year is the tip of the iceberg of what we will become if we collectively continue to work together. We will advance, we will evolve, and the result will be innovation at its finest. In the face of the toughest budget cycle the university has encountered, we continue to rise to the occasion. We offer hands-on experience and a multitude of undergraduate and graduate research opportunities; we're adjusting our programs to meet the needs of industry; and, by collaborating with industry leaders like Fred and Harriet Cox, Bob Mendenhall, and Cirque du Soleil, we're providing students with an opportunity to make an immediate and long lasting impact on the community we serve.

As we celebrate this year's achievements, I point us in the direction of next year – the fifth anniversary of the *FIRST* FRC Robotics Las Vegas Competition, the inaugural celebration of the Army ROTC unit joining the college and the opening of the new Science and Engineering Building. We'll also proudly host the National Steel Bridge Competition and the National Society of Black Engineers National Conference. As impressive as our success in research areas like renewable energy, nanotechnology, and unmanned aerial vehicles is, I take just as much pride in watching our students evolve into great engineers.

Thank you to all who have contributed to our success; together we engineer a difference.

*Eric Sandgren, Ph.D.
Dean, Howard R. Hughes
College of Engineering*



Membership in the Dean's Associates Program. This gift club recognizes donors who give \$1,000 or more to support emerging opportunities in the college. Members will receive UNLV Magazine and invitations to campus and community events.

Invent the future, leave a legacy. Charitable giving can play an important role in planning for your family's and your estate's future. Your gift through a charitable gift annuity, bequest, pooled income fund, or other means can have a meaningful impact on the College of Engineering.

"How Can I Help the Howard R. Hughes College of Engineering?"

For more information about giving to the Howard R. Hughes College of Engineering, please contact Shaun Sommerer at (702) 895-5614 or shaun.sommerer@unlv.edu.

Every gift counts. Your annual gift – no matter the amount – to your program of choice in the College of Engineering helps support student endeavors and academic excellence. Plus, your donation today is part of Invent the Future, UNLV's 50th anniversary campaign. Give online at foundation.unlv.edu.

2008 College Alumna of the Year Receives Nobel Peace Prize Award



Traci Newton (front) and her research team are the recipients of a Nobel Peace Prize for their work on the peaceful use of nuclear energy.

Traci Newton, '97, '00, has been named the 2008 College Alumnus of the Year. Newton has been a nuclear safeguards inspector with the International Atomic Energy Agency (IAEA) since September 2000. She and her colleagues received the Nobel Peace Prize for their work towards ensuring the peaceful use of nuclear energy. Newton is the first College of Engineering graduate to be recognized with a Nobel Peace Prize.

Prior to working for the IAEA, Newton worked locally as a civil engineer at the Las Vegas Valley Water District where she managed an ozone pilot plant for data collection and analysis in support of the new ozone water treatment system. The Environmental Protection Agency Radiochemistry Monitoring Laboratory in Las Vegas also recognized her talents as she was involved in the analysis of actinide and tritium in environmental samples.

Newton earned a bachelor's degree in civil engineering and a master's degree in mechanical engineering from UNLV. This fall, she will begin the doctoral program in nuclear physics at the Technische Universität Wien in Vienna, Austria. Newton credits much of her success to mentor William Culbreth, Ph.D., associate dean for the college, "not only for everything he taught me but for the faith he showed in me and my abilities," said Newton. ●

UNLV Student Chapter Earns Right to Host 2009 National Competition

The student chapter of the American Society for Civil Engineers will host the 2009 National Steel Bridge Competition on May 21-23, 2009.

The competition allows students to apply their classroom knowledge to the design, fabrication, and construction of a scaled model bridge. Winners from the regional competitions will travel to Las Vegas to compete for next year's national bragging rights.

Eric Sandgren, dean of the College of Engineering, is pleased to host the competition. "It is a deserving manner to showcase the talent of our students while spotlighting the excellent engineering program at UNLV," he said.

To become involved in the competition as a sponsor or to volunteer, contact the competition director, Vik Sehdev at 702-429-2443. ●

Two New Advisors Bring Expertise to the Advising Center

The College of Engineering welcomed two new advisors to the advising center this year, Diona Williams and Linda Vaughn.

Williams leads the advising center and came to UNLV from Michigan State University, where she had the opportunity to work with a diverse population of students and helped them achieve academic success. Throughout her academic career, she has worked on numerous committees that concentrated on issues such as enhancing the first year experience, retention/recruitment efforts and the overall development of success strategies for students.

Williams chose UNLV because of the opportunities for her to challenge students to take advantage of resources that will not only help them feel connected to the university but ultimately assist them as they evolve and grow in their academics.

"At UNLV, I believe that I will be able to continue my endeavors of providing quality advising for engineering students," said Williams. "It's extremely refreshing to work in a department where such a great team of professionals have a mutual enjoyment for providing an educational experience that inspires students reach the highest level of accomplishments and personal growth throughout their lives."

Also bringing a fresh perspective to the advising office is Linda Vaughn, who completed her bachelor of arts degree in psychology at UNLV. Using her education and previous work experience in the UNLV liberal arts advising center, Vaughn assists our entering students with their transitional questions and concerns. Vaughn is pursuing her graduate degree in school counseling. ●

Robotic Revolution Combines Engineering, Math, and Motivated High School Students

To address the nationwide shortage of science and engineering professionals, the Howard R. Hughes College of Engineering at UNLV is using robots to connect with high school students and show them that careers in engineering can be both rewarding and within their reach.

This spring, the college hosted more than 1,200 high school students on 42 teams from Southern Nevada and across the nation for the fourth annual *FIRST* (For Inspiration and Recognition of Science and Technology) FRC Robotics Competition, Las Vegas Regional. *FIRST* FRC Robotics combines elements of sport with science and technology in a team-driven contest during which students – with the help of UNLV and engineering industry mentors

– design and build unique robots from an identical kit of parts. Students also engage in computer animation, web site design, and marketing and fundraising activities.

When UNLV initially hosted a *FIRST* FRC Robotics regional in 2005, only three local high school teams competed. This year, 14 Clark County School District high schools competed.

“High school students are developing professional engineering skills through *FIRST* by learning to think critically and adapt to pressure situations on a moment’s notice – skills that just can’t be replicated in a typical classroom setting,” said Eric Sandgren, dean of UNLV’s College of Engineering.



Clark High School, Team 988, with a check for \$50,000 from National Securities Technologies, which donated the funds to the *FIRST* FRC Robotics event for team and event support and costs.

Among the participants was 2007 national champion Cimarron-Memorial High School of Las Vegas, who took home the top two

Sponsors Promote Visibility and Recruitment

The *FIRST* FRC Robotics Competition teams professionals and high school students, who work together to solve engineering problems through designing and building robots. The competition is a high-tech spectator event, the result of focused brainstorming, real-world teamwork, and dedicated mentoring. The intense and competitive process inspires students to pursue further opportunities in science, engineering, and technology.

The competition reaches more than 28,000 U.S. and international students. The Las Vegas Regional at UNLV hosted almost 50 teams from around the country and drew a crowd of thousands, increasing the visibility of the College of Engineering and promoting future recruitment of the most talented high school students.

Sponsors of *FIRST* FRC Robotics help to make this event a success through their commitment to the program and the quality of programs at UNLV. ●

Thank you to our sponsors:

American Pacific Corporation
Bechtel Foundation/Bechtel SAIC Co. LLC
Cirque du Soleil
FIRST NV
Howard R. Hughes College of Engineering
Dr. Robert Mendenhall & Las Vegas Paving Corporation
National Security Technologies LLC
Southwest Gas Corporation
TIMET
Tronox LLC
UNLV, Office of the President



Rodd Buckle

“Blue Man Group was proud to have the opportunity to work with the UNLV College of Engineering and be a part of the *FIRST* Robotics event. Watching those amazing students create robots and compete with such teamwork is truly inspiring,” said Cory Brooks Malstrom (right) of Blue Man Group.

awards at this year’s Las Vegas Regional. Newcomers from Valley High School made it to the quarterfinals and were presented with the Highest Rookie Seed Award.

Recent studies suggest that *FIRST* FRC Robotics is more than just a spirited competition.

According to a study conducted by Brandeis University nearly 90 percent of *FIRST* FRC Robotics alumni attend college, and more than 40 percent have selected engineering as their major in college.

The theme of this year’s event was “Overdrive,” during which robots raced around a 54’ by 27’ track knocking down giant inflated Trackballs and moving them around the track and over or under a 6’6” overpass.

“The competition is not only providing students the knowledge and motivation to pursue science and engineering careers; it’s also giving them the confidence needed to succeed,” said Sandgren. ●

-- Tony Allen

Mechanical Engineering Associate Professor Named Volunteer of the Year

Mechanical engineering associate professor Brendan O’Toole was recently named the 2008 *FIRST* FRC Robotics Las Vegas Volunteer of the Year. He was also honored by the College of Engineering as this year’s outstanding teacher.

O’Toole designed and teaches an engineering course that requires UNLV students to mentor one of the local *FIRST* Robotics teams. The experience allows the university’s students to apply their engineering knowledge to real-world situations while encouraging high school students to pursue their engineering degrees.

His dedication to the program extends to include both student mentoring and volunteering at several *FIRST* FRC Robotics events. His volunteer efforts are shaping the lives of future UNLV students. Several of the students he has mentored are now enrolled in the college and guiding future generations of engineers.

“Dr. O’Toole has exhibited a strong commitment to volunteerism. Over the years, he was instrumental in moving various projects ahead,” said Mohammed Trabia, chair of the department of mechanical engineering. “His demeanor and willingness to help our students is reflected in their admiration and respect of him.” ●

Team Award Highlights

The 2008 Las Vegas Regional Woodie Flowers Finalist Award, which celebrates effective communication in the art and science of engineering design, was awarded to Marc Rogers, advisor of Team 987 Cimarron-Memorial High School, Las Vegas, Nev.

The Rookie All-Star Award celebrates the success of a first-year team. Team 2520 “Robotics 9000” from Valley High School in Las Vegas, Nev. received this honor. Team 2520 also received the Highest Rookie Seed Award for ranking the highest amongst all rookie teams at the competition.

Regional Finalists:

- Team 842 “Falcon Robotics”
- Team 973 “Greybots”
- Team 1724 “Weber Fever”

Las Vegas Regional Competition

Champions:

- Team 39 “39th Aero Squadron,” from Arizona
- Team 987 “The Highrollers” from Cimarron-Memorial High School in Las Vegas
- Team 1013 “Queen Creek Robotics” from Arizona

The Regional Chairman’s Award celebrates and rewards the team that transforms our culture in a manner that inspires others to pursue a degree in engineering, science or technology. This award went to Team 987 “The Highrollers” from Las Vegas. Five of this team’s members will begin studies at UNLV in the fall 2008 semester. ●

Senior Design Sponsors and Judges

The Senior Design Competition, the College of Engineering's annual signature event, brings hundreds of community supporters to encourage UNLV's most talented and entrepreneurial engineering students. The college is grateful for their dedication, and would like to recognize these individuals and corporations for their commitment to the Senior Design Competition.

Event Sponsors

Fred and Harriet Cox

Table Sponsors

Emulex Corporation

JT3 LLC

Las Vegas Paving Corporation

National Security Technologies LLC

American Pacific Corporation

Bally Technologies Inc.

Bank of Nevada

Bechtel SAIC Co. LLC

Cirque du Soleil

Nicholas F. and Sylvia M. Fiore

Howard Hughes Corporation

PBS&J

Southwest Gas Corporation

Terracon Consultants Inc.

Tronox LLC

VentureCatalysts LLC

G. C. Wallace Inc.

Xtreme Manufacturing

Fall 2007 Judges

Ron Gross, P.E., Special Programs Remote

Sensing Labs-Nellis AFB

Lee Kramer, Xtreme Manufacturing

David Peterson, Lochsa Engineering

Spring 2008 Judges

Bradford Colton, American Pacific Corporation

William O'Donnell, UNLV Physics and

Astronomy Research Associate

Samuel D. Palmer, P.E., C.E.M., Terracon

Consultants Inc.

Senior Design Dinner Highlights Innovation in Engineering

The annual Senior Design Dinner marked the conclusion of a year-long effort by the senior engineering students to design and implement solutions to real-world engineering challenges. The dinner was also the venue for the official announcement of the Harriet and Fred Cox Engineering Design Awards. The winners were determined by a panel of industry partners who serve as judges for the two competitions held during the academic year. Honorees received a monetary award, certificates of recognition from national and state elected officials, and a commemorative plaque. In addition, a tradition began this year to also recognize the faculty instructors, team advisors, and community mentors for each award-winning team.

The event showcased posters from the 37 team projects that participated in the fall and

spring competitions. To further emphasize the event theme of innovation, 40 design projects from engineering undergraduates served as table centerpieces.

A Senior Design Experience DVD was featured which illustrated the parallels between football and Senior Design – a connection to guest speaker Tom Mack's football and engineering careers. The production showed the experience from a student's perspective and thanked Fred and Harriet Cox for their commitment to the Senior Design Competition.

NSHE Regents Mark Alden and Jack Schofield both provided complimentary remarks about the college's success in the Senior Design Competition and encouraged the audience to celebrate the students' accomplishments. ●



Rodd Buckle

From left, Harriet Cox, Calleen Johnson, and Selma and Troy Bartlett celebrate the success of Senior Design.

Prominent Community Member Encourages Engineering Students

Tom Mack, a mechanical engineer with more than 35 years of experience with Jacobs Engineering and the Bechtel Group of Companies addressed guests at the 2008 Senior Design Dinner and Awards Program held May 9 at the Cox Pavilion.

Mack has served as the vice president and manager of sales and marketing for Jacobs Civil Inc., western region since 2004. Before becoming an engineer, Mack was a professional football player for the Los Angeles Rams, and was inducted into

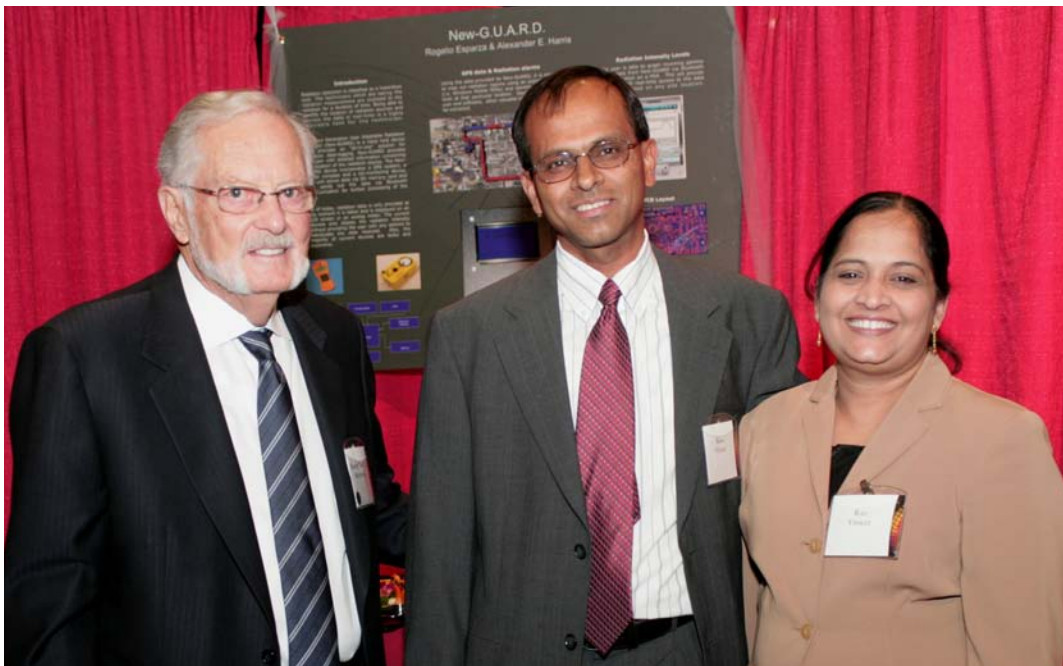
the Professional Football Hall of Fame in 1999. His diverse career as an engineer includes field engineering, cost and schedule engineering, design engineering, business development, project management, and political program management.

Mack, who holds a bachelor's degree in mechanical engineering from the University of Michigan, and certificates from Harvard and Stanford, had some encouraging words for graduating seniors, "Your engineering degree should broaden your horizons. Use it well." ●



Rodd Buckle

Dean Eric Sandgren (left), Fred and Harriet Cox, and alumni Larry Ruggieri, George Ladkany and Kent Nakata – who designed the spring 2006 Senior Design project for the Next Generation Football Helmet – honor guest speaker Tom Mack (center).



Bob Mendenhall with Rama Venkat, the associate director of the Mendenhall Innovation Center, and his wife Raji Venkat. The Mendenhall Innovation Center is the next step in the Senior Design experience and will expose all engineering students to the design and innovation experience.

Rodd Buckle

Senior Design Winners

Fall 2007

Grand Prize

Cool Alternatives-Mechanical Engineering
Team Participants: Christopher Helda,
Justin Leany, and Denney Shinn
Faculty advisor: Samir Moujaes

Civil Engineering: First Place

Reverse Osmosis Design
Team participants: Christopher Bolton,
Donald Maxfield, and Ty Nelson
Faculty advisor: Jaci Batista

Civil Engineering: Second Place

Brine Evaporation Pond System
Team participants: Kayli Barber,
Ivana Barrajas, Cassandra Watson
Faculty advisor: Barbara Luke

Electrical and Computer Engineering: First Place

New Generation User-Adaptable Radiation
Team participants: Rogelio Esparza and
Alexander E. Harris
Faculty advisor: Shahram Latifi

Electrical and Computer Engineering: Second Place

Electronic Door Lock
Team participants: Joanne DeLellis,
Nathan Lehman, and Dustin Pike
Faculty advisor: Paolo Ginobbi

Mechanical Engineering: First Place

Automatic Solar Sunshade
Team participants: Solomon Alemayehu and
Frederic Tessfay
Faculty advisor: Kammal Hossain

Mechanical Engineering: Second Place

Miniature Aerial Vehicle
Team participants: Thomas Higgins and
Rico Picone
Faculty advisor: William Culbreth

Spring 2008 Winners

Grand Prize: Tie

Rubik's Cube
Team participants: Fiacadie Engida,
Frank Scarpa Jr., Thomas D. Wood
Faculty advisor: Paolo Ginobbi

Mechanical Torque Limiter

Team participants: Kevin Murphy and
Jesse Roll
Faculty advisors: Mohamed Trabia and
Woosoon Yim

Civil and Environmental Engineering: First Place

Grassroots Irrigation Solutions
Team participants: Steven Bise, Kevin Bross,
Michael Cunningham, Chad Nikaïdo,
Robert Olds
Faculty advisor: Barbara Luke

Civil and Environmental Engineering: Second Place

Team Green
Team participants: Sarah Cole,
Dianne Espinoza, Steven Letus,
Erin Nelson, Kyra Okazaki
Faculty advisor: Edward Neumann

Electrical and Computer Engineering: First Place

Speedboat Cruise Control
Team participants: Itai Leshniak and
Derek Martinec
Faculty advisor: Paolo Ginobbi

Electrical and Computer Engineering: Second Place

Livestock Monitoring System
Team participants: Gavin Burke and
Dalton Turnbow
Faculty advisor: Paolo Ginobbi

Mechanical Engineering: First Place

Motorize Palm Tree Cutter
Team participants: Michael Morgan,
Hilary Shyface, and Daniel Skoblar
Faculty advisor: Mohamed Trabia

Mechanical Engineering: Second Place

UAV Variable Wing
Team participants: Donald Borchardt,
Luis Durani, Ray Poyaoan
Faculty advisor: Brendan O'Toole

Interdisciplinary Project: First Place

Gas Heat Pump Water Heater
Team participants: David Carey,
Matthew Fagin, Kevin Hinderliter,
Lillian J. Ratliff
Faculty advisors: Bob Boehm and Paolo
Ginobbi

Science and Engineering Building Opening This Fall



UNLV Photo Services

The Science and Engineering Building is nearing completion and will open this fall.



The new Science and Engineering Building will be about 200,000 square feet, which is almost twice the size of the Thomas Beam Engineering Complex. William Culbreth, associate dean in the College of Engineering, notes that the building was designed to foster interdisciplinary research in the sciences, engineering, and fine arts.

The building will also be the new home of the National Supercomputing Center for Energy and the Environment, which is currently housed in the Thomas T. Beam Engineering Complex. The NSCEE provides supercomputing training and services to academic and research institutions, government, and private industry for research and development related to energy, the

environment, medical informatics, and health care delivery.

The building will also include several laboratories, four classrooms, a 200-seat auditorium and numerous faculty and graduate student offices. Among the areas that will gain laboratory space are arid lands research, radiochemistry, nanotechnology, entertainment engineering, organic chemistry, high-speed gas guns, renewable energy research, and information technology.

The nanotechnology laboratory will be the first lab on campus that can be used for the fabrication of nanostructures, which include new sensors, solar cells, and micromachines. The laboratory is also the first scientific clean

room in the state. The building will also have an imaging laboratory, bringing together several of the most powerful scanning electron microscopes on campus into one laboratory. The radiochemistry program, which is new to UNLV and one of only a handful of such programs in the U.S., will have dedicated space for research in the new facility.

Additionally, an experimental black box theater for the entertainment engineering and design program will serve as a space for students to develop sets and new techniques for live performances in the Performing Arts Center's Black Box Theatre. The space will house a very large 3-D foam cutter that can shape large blocks of foam to be used in theatrical sets. ●

Honors Convocation Celebrates Achievements



Rodd Buckle

Three hundred students and their family members, donors, faculty, and other friends of the college participated in the annual Honors Convocation on April 30, as the college celebrated the students' academic achievements, including honoring student scholarship recipients and Dean's List members. Calum Pearson, director of technical and show support, resident shows division, Cirque du Soleil (US), Inc. was the keynote speaker.

The convocation also featured the presentation of community, Nevada System of Higher Education, university, and department awards. Students named to the Dean's List received a lapel pin to wear during the university's commencement ceremonies. Students in the college also surprised Dean Eric Sandgren

with a special award honoring his commitment to serving the students.

Faculty and Staff Award Highlights

2008 Outstanding College Teacher:
Brendan O'Toole, Ph.D.

2008 Distinguished Researcher:
Mei Yang, Ph.D.

Service to the College:
Rama Venkat, electrical and
computer engineering chair
Mohamed Trabia, mechanical engineering chair

Eight years as Director of Development:
Caleen Norrod Johnson

Classified Staff Service Award:
Bettie McRae

UNLV Recognized as NSA Center of Academic Excellence

The National Security Agency and the Department of Homeland Security have designated UNLV as a Center of Academic Excellence in information assurance education. This designation is a nationwide recognition that UNLV is a leader in cyber security education and research.

Recognizing the importance of information assurance education and research, a large number of U.S. institutions have been developing the curriculum on information security. However, only 93 institutions from 37

states have received the designation. UNLV is the only university in Nevada to receive the designation.

The School of Informatics in the Howard R. Hughes College of Engineering provides an academic path for students who are interested in a cyber security career. The designation makes students eligible to apply for scholarships and grants through the Department of Defense Information Assurance Scholarship Program and the Federal Cyber Service Scholarship for Service Program. ●

College of Engineering Advisory Board

Jim Whitcraft
Chair
Bechtel SAIC

Jack Huber
Aspen
Communications

Frederick R. Stater
Tronox LLC

Alan B. Hunter
JT3 LLC

Calvin Black
G.C. Wallace Inc.

Randy Innis
Independent
Consultant

David Bonnesar
Bonn Corporation

Marcus Jensen
SNWA

Denis Cederburg
Department of Public
Works

Bob Knudsen
National Security
Technologies LLC

Fred Cox
Emulex Network
Systems

Greg Korte
The Korte Company

Gred DeSart
Geotechnical &
Environmental
Services Inc.

David LeGrand
Fennemore Craig P.C.

P. Joseph Maffey, P.E.
Lucchesi Galati

Judi Dohn
VentureCatalysts LLC

Clark McCarrell
Nevada Power

Jon Fondy
Do-It-Yourself
Marketing

Alexander Marquez
Intel Capital

Jim Foss
CH2M Hill

Hank Osterhoudt
Qintiq, North America

John Fountain
Cox Communications/
Hospitality Networks

Tony Ricotta
"O" Cirque du Soleil

Randy Fultz
Las Vegas Department
of Public Works

Ray Sommer
JT3 LLC

Frank Tussing
Nevada Alliance

Stephen George
HDR Engineering Inc.

Troy Wade
Nevada Alliance

John Gibson
American Pacific
Corporation

John Warwick
DRI, Division of
Hydrologic Sciences

Herb Goforth
Nevada Power

Will Wheeler
Stantec Consulting

Robert. T. Herbert
Office of Senator
Harry Reid

James F. Wunderlin
Southwest Gas
Corporation

A. Somer
Hollingsworth
Nevada Development
Authority

Frank Yoder
Advanced Information
Systems Inc.

Wayne Horlacher
PBS&J

Engineering Life-Like Robots in Korea

UNLV mechanical engineering graduate student Saul Opie will spend the summer developing advances in robotics technology at South Korea's top research university, courtesy of the National Science Foundation (NSF).

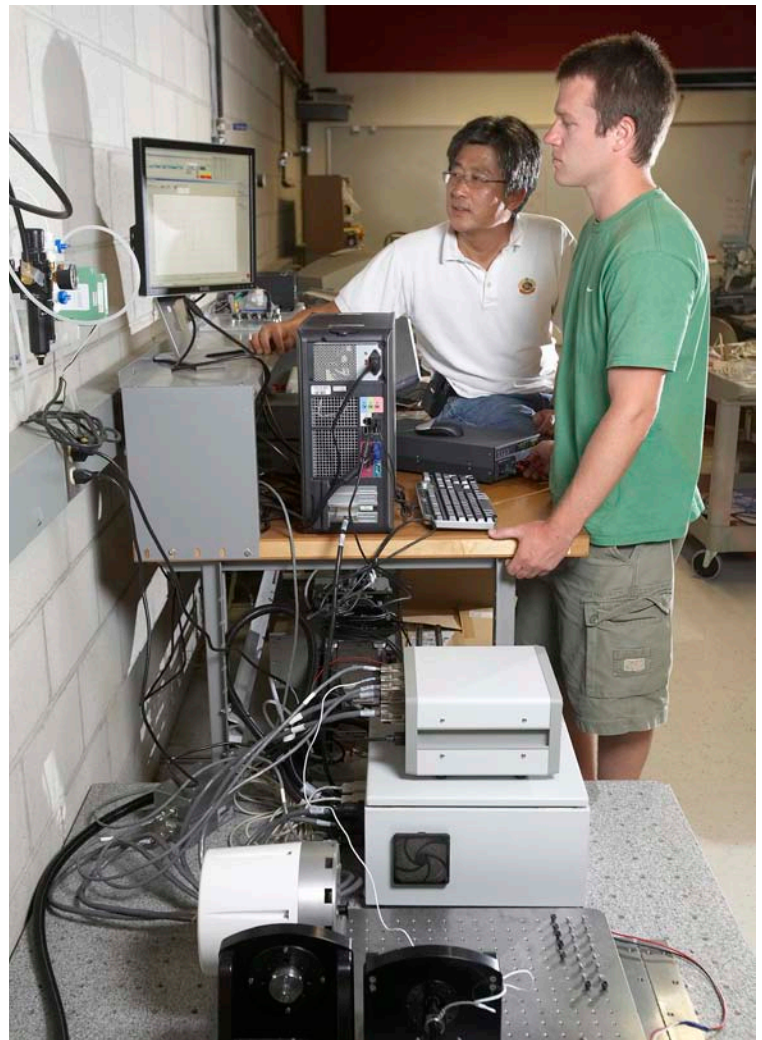
As part of the NSF's East Asia and Pacific Summer Institutes program, Opie will work with researchers at the Pohang University of Science and Technology (POSTECH) to design mechanical muscle components that can be used to mimic the joint motions of human hands or legs in robots. This work could lead to the development of more robust grasping and biped walking systems in robots, in addition to improved industrial robotic design.

"POSTECH has significant interests and experiences in robotics research, and this program will not only introduce Saul to one of the world's premier research facilities, it will also help UNLV develop meaningful relationships for future collaborative research," said Woosoon Yim, department chair and professor of mechanical engineering at UNLV.

The joint system is based on Opie's current research on shock mitigation, which focuses on introducing an electromagnetic field to iron particles suspended in a special elastomer compound. Using control algorithms to adjust the magnetic field allows for variable stiffness in the compound, similar to differing levels of tension humans place on their joints while walking or running.

The Summer Institute in Korea is designed to provide U.S. graduate students in science and engineering first-hand research experience in Korea, an introduction to the science and the science policy infrastructure of Korea, and an orientation to the Korean culture and language. Opie was one of just 197 students nationally to receive the award, which includes research opportunities in Australia, China, Japan, New Zealand, Singapore, South Korea, and Taiwan. ●

-- Tony Allen



UNLV Photo Services

College of Engineering graduate student Saul Opie (right) received a National Science Foundation award to spend the summer developing robotic joint technology.

AFROTC Det. 004 Commissions Ten Cadets

The AFROTC Det. 004, a recently established department in the College of Engineering, celebrated a military ceremony at Nellis Air Force Base on May 18, where 10 cadets, three of which were engineering majors, became second lieutenants.

Students were congratulated by NSHE Regent Jack Schofield and officials from the offices of Senator Harry Reid, Congressman John Porter, and Congressman Dean Heller.

Department director Col. Hogan encouraged the cadets to continue to build on the

foundation they have established in the detachment during the last three years.

Congratulations to the AFROTC cadets:
Melissa Batterson, education major, Air Force career – intelligence
Christopher Curtis, university studies major, Air Force career – air battle manager
Michael Dewey, psychology major, Air Force career – air battle manager
Allen Estalilla, criminal justice major, Air Force career – air battle manager
Samanta Fossett, management information systems major, Air Force career – navigator

Nathan Lehman, electrical engineering major, Air Force career – developmental engineer

Jacob Ludwig, mechanical engineering major, Air Force career – pilot

Isaac Square, university studies major, Air Force career – air battle manager

Christopher Stein, pre-law major, Air Force career – judge advocate general

Victor Villa, mechanical engineering major, Air Force career – pilot ●

DONOR HONOR ROLL

This roll of honor recognizes the contributions to the Howard R. Hughes College of Engineering from Nov. 1, 2007 to May 9, 2008. The college wishes to thank the following individuals, corporations, and foundations for their generous support. Every gift to UNLV is valued, and it is important to us to recognize all donors correctly. Please notify the UNLV Foundation at (702) 895-3641 of any discrepancies.

Mark Alden
American Pacific Corporation
American Society of Professional Estimators
Aon Foundation
Ezzat Ayyad
James Bakkedahl
Bally Gaming Inc.
Bally Technologies
Bank of Nevada
Bechtel Group Foundation
Bechtel Nevada Corporation
Bechtel SAIC Company LLC
Susan and Richard Berger
Carrie and Calvin '05 Black
Charlene and Calvin '73 Black
Margaret and William Botts
James Brown
Marlyn Buckley
Carter & Burgess Inc.
CEMEX
Cirque Du Soleil (US) Inc.
CM Works Inc.
Casey Collins '04
Harriet and Fred Cox
Danoski Clutts Building Group LLC
Glen Davis '75, '78
Angela Davison '96
Yvette De Zalia
Cleana Dean
Margaret and Gary Desler
Karen '87 and James Duddleston
Yung Edwards '94
Patricia '94, '98 and Brent '97 Ellsworth
Emulex Corporation
Mark Fakler
Fennemore Craig P.C.
Sylvia and Nicholas Fiore
John Flores
Matt Fournier
Mark Fuller '88
G. C. Wallace Inc.
Sharon and Stephen George
Geotechnical & Environmental Services Inc.

Karen and William Goff
June and William Graebel
The Graebel Family Trust
Granite Construction/
Granite Construction Company
Diane and Randall Gremlich
Brian Grimesey '85
Hansen Mechanical Contractors Inc.
HDR Engineering Inc.
Megan and Andrew '02 Hooker
Kyle Hoover '06
The Howard Hughes Corporation
Intrepid Engineering
Dawn and Christopher Johnson
Kayann '97 and Mark '01 Jongsma
JT3 LLC
Rita and Herbert Kelsey
Fred Khanbolouki
Dinh '99 and Darrel '98 Kieckhafer
Jeffrey King
Peter King
William King
Kleinfelder West Inc.
The Korte Company
Paul Larsen
Dr. Robert Mendenhall & Las Vegas Paving Corporation Inc.
Gina and Christopher LaTorre
Nancy and Joseph Leedy
Lochsa Engineering
Lochsa Surveying
Anita Lucero
Patricia and Marvin Maize
Marnell Corrao Associates Inc.
Martin-Harris Construction
McCarthy Building Companies Inc.
Ann and Timothy McCoy
Jana '93 and Danny McFadden
William Meyer '97
Mojave Electric
Sheila and David Morreale
National Security Technologies LLC
Nevada Alliance for Defense, Energy and Business
Nevada By Design

Nevada Power Company
Ninyo & Moore
Phyllis '94 and Robert Orefice
Orth-Rodgers Associates Inc.
Robert Otto
Pamela Pate
PBS&J
Peel & Brimley LLP
The PENTA Building Group Inc.
Perini Building Company Inc.
Perini Green Weekend
Pete King Nevada Corporation
E. Peterson
Janice and Scott Plummer
June and Edward '87 Rajnovich
Rick Read '96
Rinker Materials
Schirmer Engineering Corporation
Jack Schofield '95
Schweitzer Engineering Laboratories Inc.
Fred Selle
Sean Sheehan
Sigma Engineering Solutions Inc.
Linda and Benjamin Smith
Southwest Gas Corporation Foundation
Gloria and Tony '91 Statom
Lou Ann and Bobby Taylor
Terracon Consultants Inc.
TIMET
Laura '90 and Kevin '97 Tomlinson
Tronox LLC
Danette and Jonathan '02 Tull
David Turner '04, '06
Vickie '77 and George Turner
Frank Tussing
UNLV Alumni Association
Howard Vandermeer '70, '75
VentureCatalysts LLC
Christine Wallace
Esther and George Wallace
Walter P. Moore
Wells Fargo Insurance Services
Xtreme Manufacturing

College's Distinguished Researcher Engages Students

Electrical and computer engineering professor Mei Yang is working on unique research projects in the field of computer systems that engage undergraduate and graduate students in meaningful research and offer faculty collaborative opportunities.

Yang, the college's recently named distinguished researcher of the year, is currently the principal investigator on a project titled "Energy-Efficient Reconfigurable Network-on-Chips (NoC) for Intellectual Property (IP) Integration in Complex System-on-Chip (SoC) Systems." The project is being funded by a \$270,000 grant from the National Science Foundation (NSF).

Yang has been able to involve students in the research process, enriching their educational experience. Recent graduate students have

had the opportunity to develop integral parts of the project and work in collaboration with UNLV faculty and faculty at Nankai University in Tianjin, China.

In addition to the grant from NSF, the project received the International Research and Education in Engineering supplement grant. The purpose of this grant is to provide the opportunity for undergraduate students to participate in the most up-to-date NoC research projects and gain research experience in this area. Participating students have taken the pre-training sessions at UNLV over the last two semesters, and two undergraduate students will be selected

to continue working on related projects with the research team at Nankai University this summer.

Yang says she would like to see more students involved in research. "It's a very important area," says Yang, who feels that increasing student participation not only helps the students but adds new value to the studies as well. ●



Mei Yang (front), reviews a project with Emma Regentova, a fellow faculty member in the computer engineering department. Yang is this year's distinguished researcher of the year.