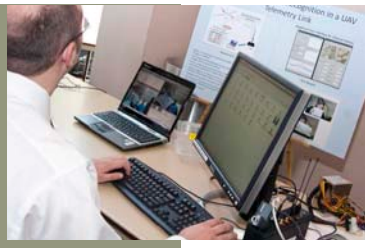
California State University
Northridge

Spring 2010

Spectra

COLLEGE OF ENGINEERING & COMPUTER SCIENCE


Inside this issue...

A Message from the Dean

S. K. Ramesh, Dean

Dear friends,

I am very pleased to share with you our first edition of SPECTRA for 2010. As you can see from the following pages, it has been a very successful year. Enrollment in the college peaked at 2,564 students last fall, with over 700 students enrolled in our graduate programs. We initiated a new BS degree program in Engineering Management and just received approval for a BS degree in Computer Information Technology and a self-supported interdisciplinary Professional Science master's degree in Assistive and Rehabilitative Technology, to begin in 2011. Our Construction Management program hosted its inaugural accreditation review by the American Council for Construction Education (ACCE) in March and came through with flying colors.

It has also been an eventful year. There have been plenty of challenges, especially as we have grappled with the consequences of the ongoing state budget crisis. But through it all we have strived hard to meet the needs of our students. Thanks to our dedicated faculty, department chairs and staff, our college has done a great job at ensuring that our students continue to have a high-quality educational experience and that our graduates are prepared effectively for emerging workforce challenges. Indeed, it came as no surprise when ASEE, in the March 2010 issue of PRISM, singled us out as having the nation's fastest-growing undergraduate engineering program out of 215 schools. The story here is that our college has a rich tradition of supporting hands-on learning, with an ideal blend of theory, problem solving and team-oriented projects that helps students succeed. These timeless values are at the very core of our programs and have been instrumental to our success. Our faculty have been equally adept and agile in applying these values to tackle emerging challenges in renewable energy, the smart grid, assistive technology, nanotechnology, and software-defined radio, just to name a few. Our highly acclaimed, first-ever college-wide "Project Showcase" on April 30, 2010, enabled our senior students to showcase their design projects to the community and industry and will become an annual tradition going forward. In conjunction with our Tech Fest events, the Honors Co-Op program, and Design Clinics, we are effectively engaging our students in the practice of engineering and computer science. We are very grateful for the support we continue to receive from our alumni and industry and especially to those who serve on the College Industry Advisory Board and the Department Industry Liaison Councils. Your support is vital to the success of these programs and benefits our students immensely.

Looking ahead, we anticipate making SPECTRA a biannual publication to effectively cover the diverse accomplishments of our students and faculty. I would like to take this opportunity to thank all those who worked hard to bring this issue to fruition: Sarah Lifton for her writing and editing of the features, Carolina Franco-Ardaghi for the artistic formatting and images, and Armando Tellez for preparing the newsletter to appear online.

In closing, I am very grateful for the support that I have received from the faculty, staff and students in our college and from my colleagues across the university during the past four years. You really make my job very easy, and it is an honor and a privilege to serve you. Please feel free to email me at s.ramesh@csun.edu with your comments and suggestions to serve you better. I hope you enjoy this issue!

S. K. Ramesh

High School Students Gain ACCESS to College Engineering

LaTesha Hagler
CECS Outreach and ACCESS Coordinator

Waiting lists are nothing new in higher education, but for a special program in CECS, it's schools, not students, that are queued up to get in.

The college's ACCESS program (Accelerated Coursework in Computer Science and Engineering for Student Success), which debuted in 2007, enrolls academically talented high school juniors and seniors in a special online section of the college's MSE 101 (Introduction to Engineering) course each fall, earning them two units of college credit. The aim is to interest increasingly diverse students in engineering and computer science and encourage them to enroll at CSUN to pursue their college education.

"It's very, very popular throughout LAUSD," says ACCESS coordinator LaTesha Hagler. "There are lots of schools on the waiting list, waiting to bring ACCESS to their high school."

For the coming year, five lucky schools made the cut. Although this represented a reduction from previous years due to budget constraints, the schools were selected because they are major feeder schools for CECS, and their students had showed the greatest interest in the program in the past. More than 80 students from High Tech High Los Angeles, Monroe High School, Northridge Academy, Simi Valley High School and Sun Valley High School took part. To earn college credit, all were required to enroll in the CSU's systemwide Talented High School program, which allows high school juniors and seniors with an overall 3.0 GPA to take up to six units per semester at a CSU campus for a single modest fee.

ACCESS student building VEX robotics.

Professor Tarek Shraibati lecturing on the benefits of an engineering degree and why CSUN is the best choice to study!

The program is clearly resonating with a demographic that up to now has been underrepresented in engineering. "Most schools are Title I schools, and a lot of the students are first generation," Hagler says.

As for ACCESS itself, it's distance learning with a twist. A teacher liaison at each site—typically a science or math teacher involved with the school's robotics program—is responsible for recruiting the students. These lead teachers, who have been trained at CSUN by Manufacturing Systems Engineering professor Tarek Shraibati, who teaches the course, are also responsible for facilitating the hands-on, lab portion of the course at their school sites.

"It's very, very popular throughout LAUSD," says ACCESS coordinator LaTesha Hagler. "There are lots of schools on the waiting list, waiting to bring ACCESS to their high school."

Once a year, the ACCESS students visit the CSUN campus for an entire day, where they tour the engineering labs, meet with CECS faculty and staff and complete an assignment at the library.

"They get to see what college is all about," Hagler explains.

Student fees cover only a small portion of the program's cost, and the college absorbs the balance, but for the fall 2009 course, ACCESS received additional support from generous donors, including Carole Morton, Rick and Dolores Ratcliffe, Tony and Pamela Schwarz, and Dennis and Tina Brodie. Dr. Morton and Dr. Ratcliffe are members of the college's Industry Advisory Board, and Mr. Schwartz and Mr. Brodie are alumni.

Future plans include seeking more support from industry, particularly to add a scholarship component for eligible ACCESS students who go on to pursue degrees in engineering or computer science at CSUN. Hagler would also like to take ACCESS students on field trips to different companies, so they can become familiar with the engineering workplace. As resources permit, the course offerings may also be expanded, all of which is sure to enhance the program's appeal.

The program's success can already be measured in the number of ACCESS students who have become CSUN engineering students—an average of 26 a year. So far, that's nearly 80 future technical innovators, designers and problem solvers who will be helping to sustain America's competitiveness well into the 21st century.❖

ACCESS students displaying frogs in space project.

ACCESS student building VEX robotics.

CECS Students Shine in Solar Project

Last year, when Boeing Corporation was looking for some help designing a new piece of hardware to help solar panels track the sun, they went back to school—to CECS, to be precise—where five graduate students worked with two professors, Bruno Osorno, in Electrical and Computer Engineering, and Stewart Prince, in Mechanical Engineering, to tackle the project.

The team, which included one mechanical engineer and four electrical engineers, was charged with developing a concept and performing a cost analysis for a dual-axis solar tracker that met constraints imposed by the company and would cost less than existing commercial trackers. While the mechanical engineer, Josh Baltaxe, worked on the mechanical component, the electrical engineers, Amandeep Kalra, Ronak Chauhan, Vishwas Bhosale and Naga Penmetsa, brought different areas of expertise to the project, including control systems, power systems, digital and communications and FPGAs (field-programmable gate arrays).

The students worked all summer to design their own microcontroller and algorithm capable of tracking the sun with a very cost-effective set of materials. They completed their work in September and presented the results to Boeing in November 2009. "The students gave the presentation, and Boeing was very pleased with it," says Osorno.

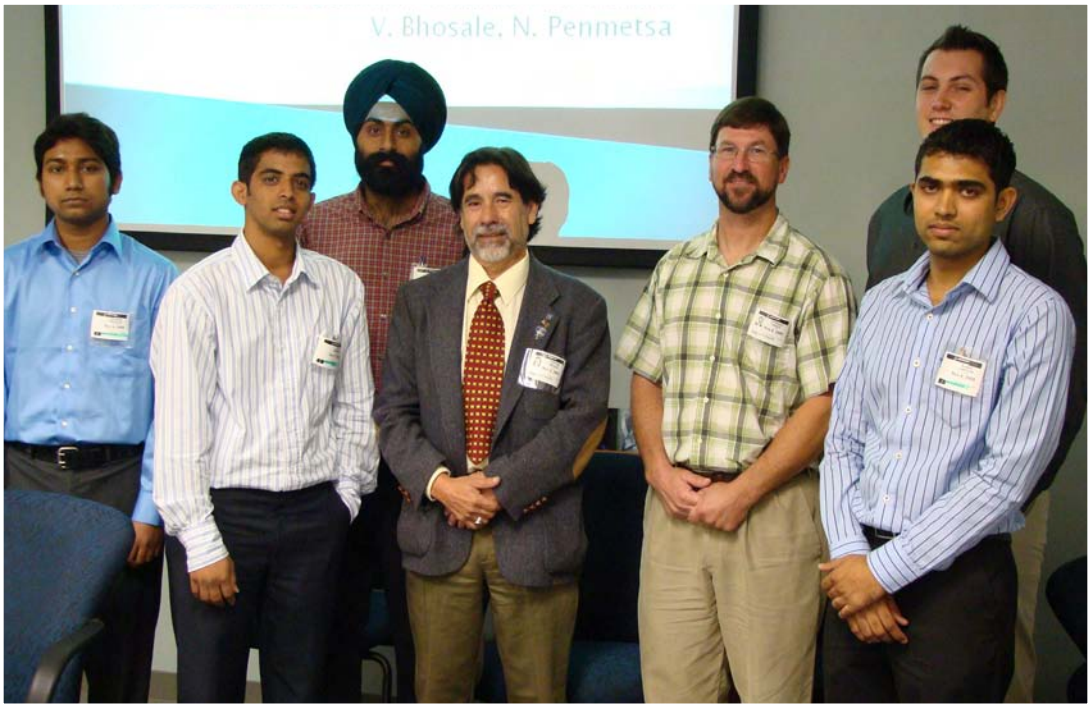
The students worked all summer to design their own microprocessor controller and algorithm capable of tracking the sun with a very cost-effective set of materials.

The team undertook the project in the context of a design clinic, an arrangement in which corporations contract with the university to have faculty and students work on problems they are encountering and produce deliverables in a short period of time.

The same group is hoping to take the project to the next stage: actually building the tracker.

The project is one of a series of partnerships that Boeing has developed with CSUN. The company is currently in the process of installing a 100 kW solar energy system in the northern part of the campus, using the same high-concentration photovoltaic arrays that figured in the students' project. The arrays will be field-tested for five years, generating power for the university and further opportunities for student and faculty research.❖

Prototype of 200W solar array with tracker



From left, students Vishwas Bhosale, Naga Penmetsa, Amandeep Kalra, electrical engineering professor Bruno Osorno, mechanical engineering professor Stewart Prince, Joshua Baltaxe and Ronak Chauhan

A Laboratory for the Future

In 1967, a popular new ride called *Adventure Thru Inner Space* opened in Disneyland's Tomorrowland. The ride, which simulated the experience of shrinking down beyond the size of an atom, was closed in 1985 to make way for more modern attractions. But if the research taking place in the Keck Advanced Materials Laboratory at CECS is any indication, today's advances in nanotechnology are proving the designers' vision prescient rather than outdated.

The Keck Advanced Materials Laboratory was established in 1995 to facilitate the integration of nanotechnology into undergraduate research. Nanotechnology, which operates on the scale of individual molecules, is driving such fields as microelectronics, materials processing and nanocomposites.

From left, Science and Mathematics dean Jerry Stinner, Engineering and Computer Science dean S. K. Ramesh, Manufacturing Systems Engineering and Management department chair Behzad Bavarian, and W. M. Keck Foundation Science, Engineering and Liberal Arts program director Manesh Varma.

Field emission scanning electron microscope (left)

"One of the missions of the Keck Advanced Materials Lab is to provide opportunities for characterization of these materials in the very fine-scale nano range," says Behzad Bavarian, chair of the Department of Manufacturing Systems Engineering and Management and director of the lab. "Because one nanometer is roughly equal to five atoms lined up next to each other, only very advanced, high-resolution instrumentation is capable of visualizing on that scale."

Generous grants from the W. M. Keck Foundation have significantly advanced that mission, enabling the university to acquire two major pieces of instrumentation. In 2001, the foundation contributed $650,000 toward the acquisition of surface science equipment, making CSUN one of only a handful of labs with this instrumentation, which facilitates very high-resolution chemical analyses of substrates. More recently, the Keck Foundation contributed $500,000 toward the purchase of a field emission scanning electron microscope, which was installed in September 2009. In recognition of these contributions, in a dedication ceremony on February 18, 2010, the university named the lab in the foundation's honor.

One of the key ways the lab is used is in support of CECS's undergraduate research program. Through the program, faculty research projects, funded by various corporations and government agencies, enable students at the sophomore level and above to gain firsthand experience with applied engineering research. These cutting-edge research experiences, carried out under the guidance of faculty mentors, motivate students, particularly those belonging to underrepresented minority groups, to pursue graduate studies in order to continue building a highly advanced workforce. Since the program's inception in 1988, some 90% of the students who have taken part have gone on to earn master's degrees.

The Keck Lab also supports CSUN's interdisciplinary Nanotechnology Undergraduate Education Program, which includes nanotechnology modules in a number of engineering and science courses, as well as dedicated courses for seniors and graduate students.

"We predict that 10, 15, 20 years from now, nanotechnology will be the dominant technology in engineering as far as materials applications and processing," Bavarian says. "That's why the younger generation of engineers and scientists need to be exposed to it and be prepared for these challenging jobs." ❖

From left to right: Prof. Dale Conner with students Jesus Rives, Nathan Kroener, Edgar Grion, Derrik Olsen, Braullio Diaz, Kevin Jamir, Fawaz Alsugair, and Tuan Dinh.

Grape Seed Oil Extractor

CECS Delivers a One-Two Punch at WESTEC

Sometimes it isn't necessity that's the mother of invention, but a good old-fashioned competition. At least that was the case with the ten CECS students who entered the Society of Manufacturing Engineers' 24th WESTEC Student Manufacturing Challenge in March.

Tool Cart

Inspired by student Derrick Olsen's description of the seeds and pulp left over from winemaking at his family's vineyard and the difficulty of extracting prized grape seed oil without using chemicals, one five-member team undertook the design and construction of a mechanical grape seed press. The other team, drawing inspiration from their colleagues, designed and built a cart to hold the CNC machining tools necessary to build the press.

The students began work on their projects during the fall semester. In addition to designing the products and making working drawings, they had to consider such factors as the potential market and the economics of their products. They also had to devise systems for keeping track of the parts they needed to produce.

After they finished the planning phase, they went to the shop and set about making their designs a reality.

"They had to be able to machine the product, not just design it," explains Dale Conner, the Manufacturing Systems Engineering and Management professor who advised the teams along with fellow MSEM professor Tarek Shraibati. "They had to run the machines and make the trays and carts and do the welding and machining. They had to exhibit a broad range of skills."

On March 23, at the WESTEC exposition at the LA Convention Center, the entries were judged based on criteria ranging from design and creativity to how well they satisfied the needs of the customer, to manufacturability, to health and safety considerations. The teams were also assessed on their presentation, documentation and project management.

CSUN's complementary projects swept the competition in the four-year college category, with the cart claiming first prize and the grape seed press placing second. As a special bonus, the teams were featured prominently in the Daily News the day after the competition.

The students who worked on the CNC cart included Fawaz Alsugair, Rigoberto Casas, Tuan Dinh, Kevin Jamir and Stewart Stachowiak. The grape seed oil press team was made up of Braulio Diaz, Edgar Grion, Nathan Kroener, Derrick Olsen and Jesus Rives. ❖

Teaching, Mentoring Pay off for CECS Professor and His Students

Amine Ghanem
Assistant Professor
Construction
Management Program

Amine Ghanem, assistant professor of construction management, isn't likely to forget 2010 anytime soon. First, one of the students he coached for the Associated Schools of Construction's annual student competition was on a winning team. Then Ghanem found himself in the winner's circle, when he received a national teaching award from the same organization.

"Teaching has always been something I liked to do," he says. "I went into industry and enjoyed it, but when I went back for my Ph.D. and did research, I had to decide whether I wanted to do more research or share what I did with others. Teaching is a passion for me."

This year, that passion first played out in February, when a team of CSUN Construction Management Technology students entered, for the first time, the ASC's regional competition. Held annually in Sparks, Nevada, the competition attracts more than 1200 students from more over 40 universities across U.S.

The team, which included Francisco Arceo, Sammy Jouglet, Michael Elliott, Tommy Criner, Matthew Reeves, Mike Sosa and Ryan Husbands, had been preparing for several months and participated in two categories: Heavy Civil and Project Management Challenges. The Heavy Civil team, led by Jouglet, had to prepare estimate documents for two small airport runways. The group received the construction drawings at 6:30 a.m. and had to present its bid at 10 p.m., without any Internet access or contact with anyone outside the team. Although the team didn't place, it did receive excellent feedback.

In the Project Management Challenges competition, CSUN was represented by Arceo, who was part of a team with five other students from different universities. None of the team members knew each other, but they had to work together to solve a problem in real-life construction—a project that was facing a shortage of money. Again, the team was given the problem at 6:30 a.m. but had only until 3:30 p.m. to produce an answer. Competing against 13 other groups, Arceo and his team members won first prize.

"Between preparing for the competition, meeting other students and talking with recruiters, all the students found the experience very valuable," Ghanem says.

From left, Michael Eliott, Sammy Jouglet, Michael Sosa, Tommy Criner, Matthew Reeves, Margaryta Seleznova (not a team member), Ryan Husbands, and Francisco Arceo

Ghanem's own moment in the spotlight came two months later, when he flew to Boston to accept the ASC national teaching award on April 9. One of only three awardees from Region 7, he had been nominated by CSUN professor and Civil Engineering and Applied Mechanics associate chair Nazaret Dermendjian, with support from Roger Di Julio, professor of civil engineering and structural mechanics, and Dean S. K. Ramesh.

"This is more like recognition for the college and the university, not just for me," Ghanem says. "It's for all the people who have been helping and supporting me in my journey at CSUN." ❖

Software-Defined Radio Sets the Stage for the Future

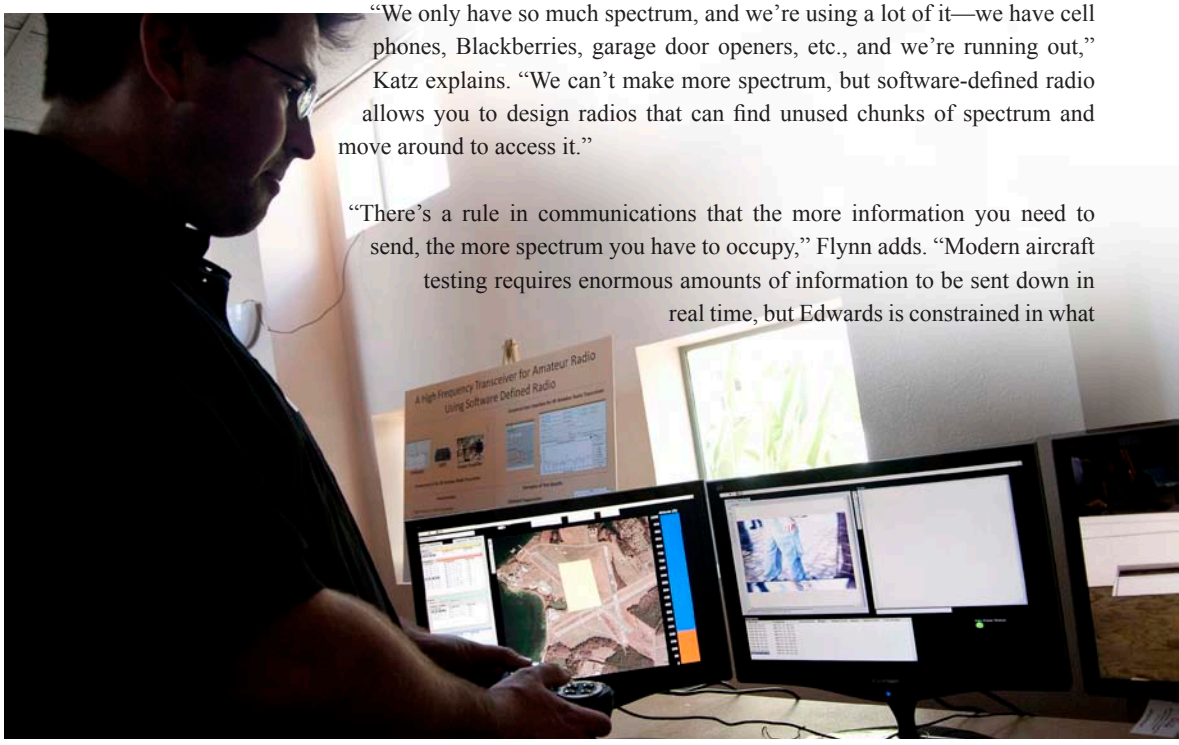
When the 9/11 Commission released its final report in August 2004, one of the failures it cited was the inability of first responders to communicate across agencies. Police were on one system, firefighters on another, and firefighters inside the World Trade Center never got the message that the buildings were about to collapse.

If a cutting-edge technology called software-defined radio (SDR) had been available then, those problems could have quickly and easily been circumvented. SDR uses a computer and interface to digitize radio signals, with any updating or reconfiguring carried out via software. In addition to the obvious economic advantages, the technology provides unsurpassed flexibility to respond to changing needs and conditions, whether that means shifting frequencies to prevent enemies from listening in on military communications, identifying unused portions of the radio spectrum to avoid interference, or allowing public safety personnel from multiple agencies to communicate directly during an emergency.

Professors James Flynn, Sharlene Katz, and David Schwartz

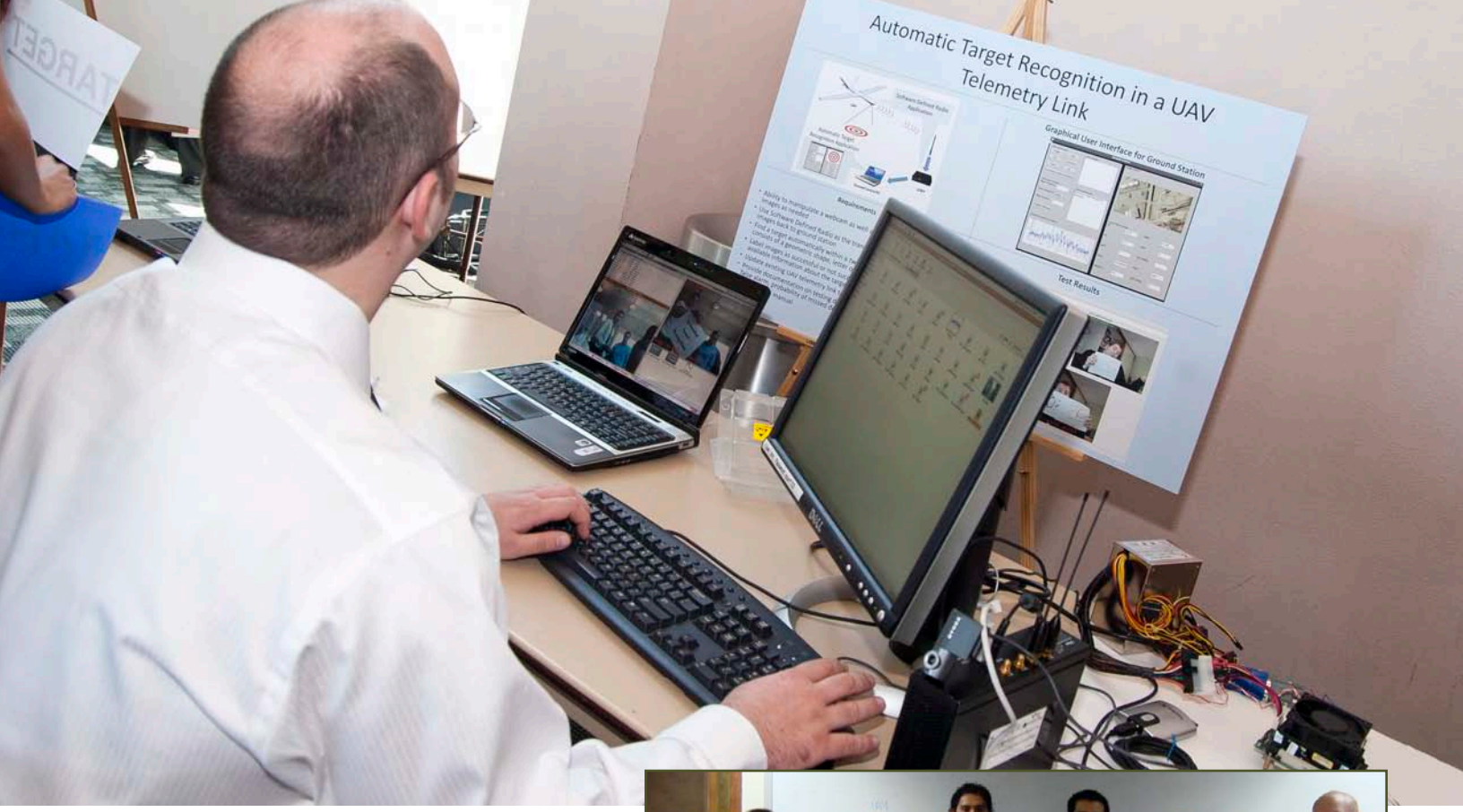
Most research in the field is currently being done at the graduate level, but thanks to support from Edwards Air Force Base, CSUN is one of very few institutions involving undergraduates. Since January 2009, under the mentorship of professors Sharlene Katz, James Flynn and David Schwartz, several teams of Electrical and Computer Engineering students have completed senior projects in SDR, carrying out proofs of concept with broad implications.

One group, for example, established a telemetry link to transmit images and data, such as battery status, speed, altitude, temperature, position, etc., from an unpiloted air vehicle (UAV) to a ground station. The project not only educated students about the basic problem of sending telemetry down from an aircraft using only an onboard robot, but also addressed the issue of finding sufficient spectrum for the data transmission.



"We only have so much spectrum, and we're using a lot of it—we have cell phones, Blackberries, garage door openers, etc., and we're running out," Katz explains. "We can't make more spectrum, but software-defined radio allows you to design radios that can find unused chunks of spectrum and move around to access it."

"There's a rule in communications that the more information you need to send, the more spectrum you have to occupy," Flynn adds. "Modern aircraft testing requires enormous amounts of information to be sent down in real time, but Edwards is constrained in what



Top, student Michael Berman demonstrating the SDR-based UAV Telemetry Link
Opposite page, student Travis Janssen demonstrating the Target Recognition Software in the SDR-based UAV Telemetry Link

Back row: Brian Meadows, Michael Berman, Silvestre Sanchez, David Alvarez, Youssef Chedid, Jack Sun Front row: Ryan Rawson, Kaveh Hajimohammadreza, Kinal Vachhani, Efrain Mendoza, Derrick Jones, Charles Judah

spectrum it can use—they don't have an infinite amount of it. We had to educate the students about that."

The students designed the SDR system so the mode and frequency could be changed on the fly. In place of the old cumbersome and time-consuming process—landing the aircraft to switch out equipment, which can take days or even weeks—operators using the prototype SDR system were able to make the necessary changes with the press of a button. Subsequent student teams have worked on enhancements to the system, including one that has made the search for available spectrum automatic.

Another project, which used the same hardware as the UAV project, replicated the performance of a high-end commercially available ham radio transceiver. With inexpensive hardware and software, the CSUN team was able to replicate and in some cases surpass the capabilities of the high-end hardware, which can cost as much as $2,000 to $3,000.

> ***"The students had to learn about modes of communication and implement them in software, as well as make a human interface that would allow someone with limited technical skills to get on the air"***

"The students had to learn about modes of communication and implement them in software, as well as make a human interface that would allow someone with limited technical skills to get on the air," Katz says.

They were so successful that a group of students in San Francisco found the CSUN team's Web site, downloaded the software and got it working, all without ever talking to team members.

Katz, Flynn and Schwartz are eager to keep building on these successes. Current teams, for example, are working on miniaturizing the telemetry system using programmable integrated circuits and incorporating a camera that adds target recognition capabilities.

"SDR will be the technology of the future as far as radio is concerned," Katz says. "It's going to be very important." ❖

Department News

CIVIL ENGINEERING AND APPLIED MECHANICS


Prof. Dermendjian

New CEAM Chair

The department will be welcoming a new chair this summer. Longtime chairman **Stephen Gadomski** has announced plans to retire, and associate chair **Nazaret Dermendjian** will take his place.

We are Sad to Announce...

Emeritus professor **James Roberts** passed away on January 5. Roberts had been dean of the Davidson College of Engineering at San Jose State University before joining the CSUN faculty in 1981 and had continued to teach part time after his retirement. Countless students took his courses in soils, foundation design, statics and mechanics.

Steel Bridge Team Heading to Nationals!

At the American Society of Civil Engineering's 2010 regional conference, which took place during spring break at the University of Nevada, Las Vegas, CSUN's team claimed first place in the Steel Bridge competition in the aesthetics and lightness categories and came in third overall. The winning team is headed to the national competition in June.

The Steel Bridge team consists of, Captains:Julianna Colwell and Sara Villegas
The Build Team: Jerry Perser, Nick Mineo, Thomas Tan, and Scott Watterson

COMPUTER SCIENCE

Department chair **Steven Stepanek** was elected faculty president for a two-year term of office during a recent campus-wide faculty election. In the role of faculty president, Professor Stepanek will chair the CSUN Faculty Senate, serve on numerous university committees and be the CSUN faculty spokesperson at various university events. During his term of office, he will continue to chair the Computer Science Department.


Prof. Stepanek

New Bachelors in Computer Information Technology

Starting in fall 2010, the department will offer a new bachelor of science degree in Computer Information Technology (CIT). The program is designed for students interested in professional careers involved with solving the informational technology infrastructure needs of companies and organizations. The program combines existing computer science courses with information science courses from business, plus new CIT courses designed by Computer Science faculty. As part of the CIT program, students will be required to take 15 units in an applied field other than business and computer science to assure both breadth and depth for their careers.

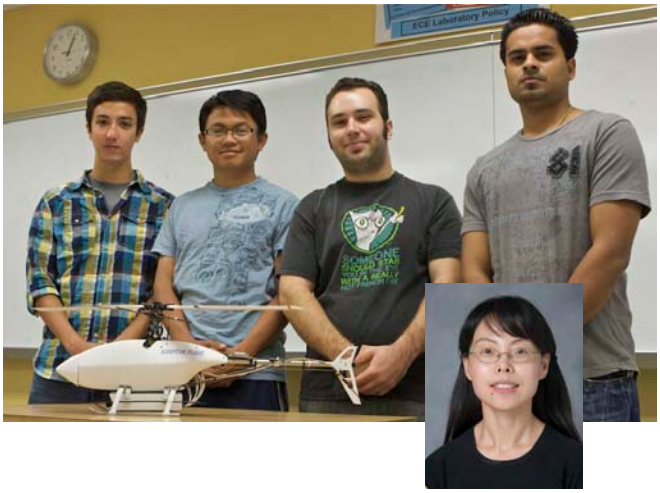
ELECTRICAL AND COMPUTER ENGINEERING

In addition to publishing five journal articles and presenting ten conference papers over the past year, **Sembian Rengarajan** was elected vice-chair and chair-elect of the Commission on Waves and Fields of the United States National Committee of the International Union of Radio Science (USNC/URSI) for the triennium 2009–11. He will chair the commission during 2012–14. Rengarajan was also awarded a CSUN Research Fellowship in January 2010 to investigate microstrip reflectarrays during 2010–11 academic year.

Matthew Radmanesh has released a three-CD set titled The Superior Foundation for Engineering and Sciences, which offers an in-depth discussion of the origin of time and space in the sciences, the pyramid of knowledge used in the engineering design and analysis process, the final unstacking of the universe and much more.

IEEE's Regional Paper Contest

Students **Michael Yeretzian**, **Ellison Yasukochi**, **Aditya Singh** and **Long Nguyen** (pictured below) took second place in the IEEE's regional paper contest on April 17, for their paper titled "Covert Operation Using a Completely Autonomous UAV Helicopter." **Ashley Geng** was their faculty advisor.



Prof. Ashley Geng

Ramin Roosta was awarded a 2010 NASA Achievement Award, NEPAG (NASA Electronic Parts Assurance Group). His research with undergraduate and graduate students also led to several published papers in 2009 and 2010.

Sharlene Katz and **James Flynn** co-authored a paper titled "Using Software Defined Radio (SDR) to demonstrate concepts in Communications and Signal Processing Courses" that was singled out as the best paper in the Electrical and Computer Engineering Division at the 2009 American Society for Engineering Education (ASEE) Annual Conference.

Nagwa Bekir has been coordinating the MSEE self-study report in preparation for the Master of Science in Electrical Engineering program review in spring 2011.

MANUFACTURING SYSTEMS ENGINEERING AND MANAGEMENT

Prof. Dale Conner

Dale Conner was named the 2009–10 College Research Fellow for his project to evaluate the fitness of Pd43Ni10Cu27P20 for metallic glass wires in biomedical applications. He has been working with graduate and undergraduate students to fabricate experimental alloys and test the suitability of metallic glass wires for biomedical applications.

For additional MSEM news, see articles on the Keck Advanced Materials Laboratory and the WESTEC Student Manufacturing Challenge.

MECHANICAL ENGINEERING

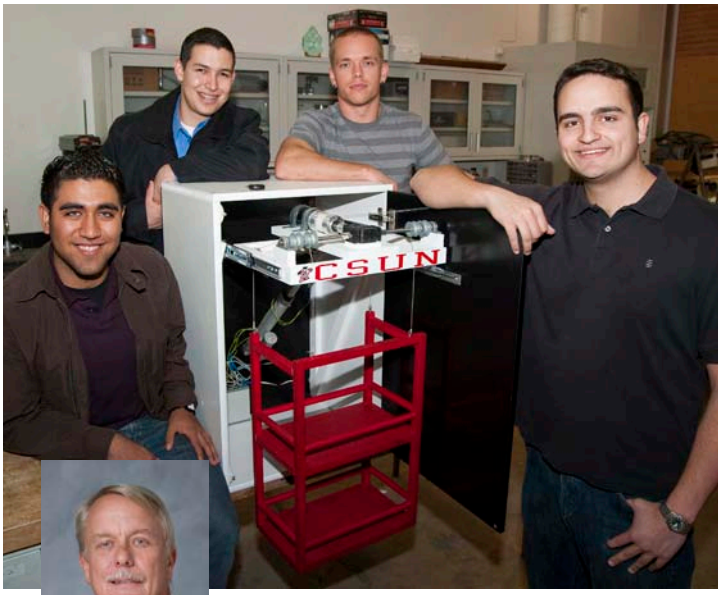
Human-Powered Vehicle Challenge

On April 23–25, the department and the campus chapter of the American Society of Mechanical Engineers (ASME) hosted the 2010 national Human-Powered Vehicle (HPV) Challenge, which is sponsored by ASME International. The CSUN team, which was advised by **Robert Ryan**, placed second in the design category and third in the speed competition, against 29 other teams from across the country.

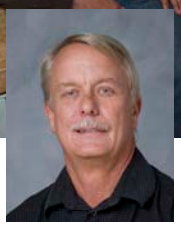
Human-Powered Vehicle Team with Prof. Robert Ryan pictured in center.

First Prize Winners in AHETEMS National Competition

Students entering the October 2009 AHETEMS (Advancing Hispanic Excellence in Technology, Engineering, Math and Science) National Design Competition in Washington, D.C., were charged with designing "a commercially marketable product that has both a unique social benefit and improves…quality of life, especially for the Hispanic community." Seizing on the contest's theme of "adaptive assistive technologies," CSUN's team, made up of **Eduardo "Eddy" Ekmekgian, Maurycy Sarosiek** and **Mario Servin**, designed an ingenious remote-controlled "floating cabinet" that brings inaccessible items within reach. Their invention claimed first prize at the Society of Hispanic Professional Engineers–sponsored event, beating out teams from Stanford, UC Berkeley and the University of Virginia. Their idea was born in **Michael Kabo**'s "Machine Design" class, and their classmate, **Hector Perez**, who is SHPE's vice regional representative, had pushed the team to enter.



From left, Mario Servin, Hector Perez, Maurycy Sarosiek, and Eddy Ekmekgian.



Prof. Mike Kabo

College News

The March 2010 copy of Prism*, the journal of the American Society of Engineering Education, named CECS the fastest-growing engineering school in the country between 2005 and 2008. During that period, the college increased the number of bachelor's degrees it granted in engineering by 96%. (Computer science majors were excluded from the tally.)*

ENGINEERS' COUNCIL AWARD RECIPIENTS

As part of its mission to advance the art and science of engineering for the general welfare of humankind, the San Fernando Valley Engineers' Council recognizes engineers and scientists from industry and academia for their contributions. On February 20, at its annual awards banquet, the organization honored six CECS faculty members.

Hamid Johari, ME department chair, received the John J. Guarrera Engineering Educator of the Year Award

Prof. Hamid Johari

Prof.Bruno Osorno

Prof. George Wang

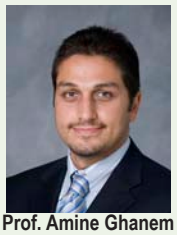
Bruno Osorno (ECE) and **George Wang** (CS) both received Distinguished Engineering Educator Awards

Prof. Ramin Roosta

Ramin Roosta (ECE) received a 2010 Distinguished Engineering Project Achievement Award

Dale Conner (MSEM) and **Amine Ghanem** (CEAM) both received Outstanding Engineering Achievement Merit Awards

Prof. Dale Conner



Prof. Amine Ghanem

In addition, the team lead by **Tom Brown**, CSUN's executive director for facilities management in the Physical Plant Management department, received a Distinguished Engineering Project Achievement Award for the Satellite Chiller Plant and Sub-Tropical Rain Forest project. This design, build and construct project has received numerous awards, including the best sustainable project award at the UC/CSU/CCC Sustainability Conference in 2009. In conjunction with the campus' 1 MW fuel cell—currently the largest of its kind on any university campus in the world—this project positions CSUN at the forefront of sustainability programs. Team members from CECS included **Alvaro Olague**, **Varoon Bahri**, **Zekil Patel**, **Mohamed Alzarouni**, **Marouane Berny** and **Ashwin Krishnan**. CECS professor **Sidney Schwartz** and ME professor **Robert Ryan** served as faculty advisors. Alumni **Mikhail Yefimov** and **Shawn McConomy** were also part of the team.

Tom Brown

Prof. Robert Ryan

Prof. Sid Schwartz

SAYING GOODBYE IS HARD TO DO

On May 14th the College celebrated the retirement of Professors Brenda Timmerman, Larry Caretto, Mike Macias, and Sid Schwartz, pictured here with Dean Ramesh (center)

WELCOME TO OUR NEW STAFF MEMBERS

Shoeleh Di Julio (ME) assumed the role of associate dean of the College of Engineering and Computer Science in August 2009. **Diane Schwartz**, who served as associate dean from 2007–09, returned to teaching and research in the Computer Science department.

Prof. Shoeleh DiJulio

Barbara Caganich

Barbara Caganich assumed the role of development director for the colleges of Engineering and Computer Science and Science and Mathematics in April 2010. Former director **Tammy Glenn** continues in her role as a development officer with University Central Advancement.

[ALUMNI SPOTLIGHT]

Milad Girgis: Manufacturing Success

Milad Girgis '97, '01, Vice President of Operations, Boston Scientific Neuromodulation

From the time he was in high school, Milad Girgis ('97, Mechanical Engineering; MS '01, Engineering Management) knew he wanted to be an engineer. He just didn't know what kind.

As a student at CECS in the 1990s, he was team leader for CSUN's Formula One car in the Society of Automotive Engineers' Collegiate Design Series competition, and he thought he wanted to work for a car company. When he took part in the Honors Co-Op internship program, he was hoping to land a spot with an aerospace company to gain relevant experience. Instead, his internship was at a small medical device company in Chatsworth—and that detour changed the entire course of his career.

"My concentration was machine design as an undergraduate, and I learned that the medical device industry required machines, so I was able to transfer the processes and gained a love for the industry," he explains. "It's a testament to what the university teaches about process thinking."

"What they offer is practical experience," he says. "You can come out of school, write a report, take an unknown problem and solve it in a practical way. Instead of spending an eternity talking about the theory of why something didn't work, you can go fix it. It's a wonderful school."

Girgis worked at that company, International Remote Imaging Systems (IRIS), for a year while in school, then stayed on as a mechanical engineer another year and a half after graduation.

"When I was at IRIS, some of the best advice I got was from a project manager, who told me to keep going on and get a graduate degree," he says. He enrolled in a master's program in mechanical engineering at CSUN, but eventually he realized that he wanted to lead teams, not work strictly as an engineer. He transferred his coursework into the Engineering Management program and received his M.S. degree in 2001.

By then he was working at Medtronic MiniMed, in manufacturing engineering, quickly working his way up from a product support engineer to a supervisor of project engineering to senior manager between 1998 and 2004, overseeing its disposables business. He followed a similar trajectory at his next employer, Advanced Bionics (now a division of Boston Scientific), where he began as a manager and then, as his talent and experience became obvious, was promoted to senior manager, then to director of manufacturing and process engineering.

Today Girgis is putting both his CSUN degrees to work as vice president of operations for Boston Scientific's neuromodulation products (spinal cord stimulators that address neuropathic pain). He feels strongly that his impressive career arc reflects the quality of his education at CECS, where he now serves on the industry advisory board for Mechanical Engineering.

"What they offer is practical experience," he says. "You can come out of school, write a report, take an unknown problem and solve it in a practical way. Instead of spending an eternity talking about the theory of why something didn't work, you can go fix it. It's a wonderful school." ❖

California State University
Northridge

Giving to the College

Give to the College of Engineering & Computer Science!

There are many ways you can help and each gift has a tremendous impact on the lives of our students. Your generous donations enable us to enhance their educational experience, provide financial assistance, and much more.

To discuss how you can make a difference in the College, please contact:

Barbara Caganich, Director of Development
(818) 677-6078 • bcaganich@csun.edu

Spectra
A biannual publication

Editor: S. K. Ramesh
Writer: Sarah Lifton
Graphic Design: Carolina Franco-Ardaghi
On Line Design: Armando Tellez
Photography: Lee Choo
Tesha Hagler
Tuyen Nguyen
Steven Stepanek
Armando Tellez
Atif Zubair

College of Engineering & Computer Science
California State University, Northridge
18111 Nordhoff Street
Northridge, CA 91330-8295
www.csun.edu/ecs

Photo: Prof. Steven Stepanek