

COLLEGE OF ENGINEERING FACULTY/STAFF E-NEWSLETTER



SAN DIEGO STATE
UNIVERSITY
College of Engineering

May 2010

In the Spotlight

- Commencement is **Sunday May 23**. 450 students will graduate from the College of Engineering and about 375 are expected to participate in the ceremony.
- **Wed. May 26** is the Annual Staff Appreciation BBQ. Please give our great staff your special thanks that day
- Save the Date! The All-Faculty Retreat and Semester Kick-off dinner will be on **Tuesday August 24**.

Tracking The Dean

Date	Event
5/21	Dean Hayhurst will meet with officials from the New School of Architecture.
5/23	Dean Hayhurst will participate in Commencement.
5/26	Dean Hayhurst will attend CONNECT Board of Directors Meeting.
5/26	Dean Hayhurst will be the Chief Chef at the Staff Appreciation BBQ.
5/26	Dean Hayhurst will attend a reception for CONNECT's new Government Affairs Director and Chief Council, Tim Tardibono.
5/27	Dean Hayhurst will address Dr. Beyene's PASI Conference attendees during dinner.
5/30-6/4	Dean Hayhurst travels to Arras, France to discuss international collaborations with L'Universite d'Artois.
6/7	Dean Hayhurst will meet with

ECE / ME Senior Design Day a Great Success

Seniors in Electrical & Computer Engineering and in Mechanical Engineering showed off projects they've worked on for months at Senior Design Day on Friday, May 7, with poster presentations and project demonstrations. The event was open to the public, with invitations sent to local companies, alumni and others. This is the first year that Mechanical Engineering and Electrical and Computer Engineering have had a common Senior Design Day and students not only enjoyed showing their projects to a larger audience, but also got first-hand experience explaining technical information to people with varied backgrounds.



In Electrical and Computer Engineering, approximately 43 students participated in the Spring Semester design course. Most teams were sponsored by industry with the exception of the teams that designed autonomous robots. Oral presentations were given on May 5th and were judged by the ECE faculty and invited guests.

Companies like CUBIC, SAIC, Tandem Diabetes, and Geodetics sponsor projects to provide students with experience in solving real world problems. One team, sponsored by CUBIC Corporation, created a Global Emergency Tracking System (GETS) which utilizes an Inertial Navigation System (INS) via dead reckoning to transmit data back to an incident command station in real-time to be displayed in 3D. GETS was designed with first responders in mind, such as firefighters, who are required to routinely enter dangerous or unknown structures and environments. Current GPS systems use satellites to track people that are outside, but GETS tracks those inside buildings.

"Students gain confidence through this experience, but can also be humbled when working through the challenges that design in the real world brings," said John Kennedy, instructor for the ECE senior projects course. The ECE posters presented on Design Day are available for public view in the second floor hallway. More information about these projects is on the department website.



Mechanical Engineering had 49 students from ME 490B participate in Senior Design Day, making up 19 design teams, 10 of which were sponsored by industry. George Mansfield, instructor for the ME projects course, said the highlight of the senior design projects is seeing the real products, such as racecars and mechanical devices, which students produce. "Everything the students build should

be underpinned by theory and mathematics," he said. One group was able to build an ultra high-speed actuator that uses compressed gas to accelerate a piston to 300 mph in about 10 inches of space. "And then we have to stop it." Mansfield joked.

	Will Nevilles, Sr. Vice President of Indus Technologies.
6/11	Dean Hayhurst will officiate at the Order of the Engineer Ceremony at UC Irvine.
6/15	Dean Hayhurst was invited to participate in a panel discussion at a USD workshop on Veterans in Engineering.
6/28	Dean Hayhurst will meet with President Weber and officials from the Boeing Corporation.

Stig Johansson to Retire after 23 Years

Stig Johansson will retire on June 1 after 23 years of service to the College of Engineering. Stig has served as a laboratory and equipment technician in the Aerospace Engineering laboratory since 1987.



In his 23 years, Stig has worked with many students on their senior projects, helping them research and build aerodynamic models and test them in the lab's wind tunnel. Stig has also worked with faculty and with companies to conduct research using the wind tunnel, and has tested the aerodynamic capabilities of everything from high performance cars to bicycle helmets. One of his proudest accomplishments is having a paper that he co-authored published in *The Journal of Experimental Biology*, entitled, "Hydrodynamic Performance of the Minke Whale Flipper."



"Stig is very dedicated to our students and he will be greatly

In addition to the Design Day demonstrations, the 19 ME teams joined 11 teams of 33 students from ME 490A (with 7 teams sponsored by industry) for formal presentations on the afternoon of May 11 at the Bio Sciences Center. Local industry sponsors and ME faculty and students attended the presentations.

Senior design projects are crucial in giving students the hands-on experience needed to successfully compete in today's job market. Both Drs. Tummala and Mehrabadi observed that this year's Senior Design Day was a great showcase for the College of Engineering, and students and faculty should be proud of the results.

Sarkar & Olevsky Receive PLF Award for Faculty Excellence

The College of Engineering congratulates Dr. Mahasweta Sarkar, Assistant Professor of Electrical and Computer Engineering, and Dr. Eugene Olevsky, Professor of Mechanical Engineering, for receiving the President's Leadership Fund (PLF) Award for Faculty and Staff Excellence this year. We are proud that of the five awards made this year, two were to College of Engineering faculty.

Both Drs. Sarkar and Olevsky plan to reinvest their awards towards their ongoing research and provide support for graduate students working in their labs.

Dr. Sarkar's research focuses on addressing various Quality of Service issues in wireless data networks and on cross-layer design issues in wireless data networks. She uses novel methods to address fundamental trade-offs between fairness, optimal resource allocation and power management in such networks. "I plan to reinvest the money mainly in sponsoring my graduate research students who develop protocols and algorithms to enhance the quality of service in wireless network communications," said Dr. Sarkar.



Dr. Olevsky's award will be invested in the support of fundamental field-assisted sintering research, including the support of Powder Technology Laboratory's (PTL) activities on spark-plasma and microwave sintering. The award will increase the PTL's capacities in conducting exploratory research on field-assisted sintering with a higher risk-reward ratio. He hopes the President's Leadership Funding will result in affirming PTL's leading position in sintering studies and will serve as a basis for attracting significant amounts of further governmental and industrial support.

The PLF was established in October 2002 to provide SDSU with the resources to respond quickly to strategic opportunities, reward excellence and pursue innovation. It provides San Diego State faculty with the discretionary resources to underwrite a wide variety of projects that would otherwise go unfunded at SDSU. In its first eight years, the PLF has invested upwards of \$4 million in more than 160 new or existing initiatives.

CCEE Students Win at ASCE Competition

Students from SDSU's student chapter of the American Society of Civil Engineers (ASCE) won several prestigious awards at the Pacific Southwest Regional Conference held in Las Vegas, NV from April 1-3, 2010. Seventeen universities from the Pacific Southwest region participated in the competition, hosted by the University of Nevada-Las Vegas and Northern Arizona University. Sixty-five students from SDSU travelled to Las Vegas for the event.



missed,” said Dr. Allen Plotkin, Aerospace Engineering Department Chair. Dr. Plotkin explained that it was not unusual for Stig to adjust his schedule to help students with their senior projects, and always went the extra mile to assure students’ success in extracurricular projects, such as the AIAA Design, Build, and Fly Competition.

Stig earned a degree in Science and Electronic Engineering from the Technical Institute of Stockholm in Sweden. Prior to joining SDSU, he worked at the University of Maryland as a design engineer for twenty-one years, where he helped build the world’s largest low frequency radio telescope. Stig owns a small electronics company, Amplitude Electronics, which he now plans to operate full-time. He will also focus on his hobbies, photography and music, during retirement.

The Department of Aerospace Engineering hosted a Retirement Celebration for Stig on Tuesday April 27 on the Faculty/Staff Club Patio. The College of Engineering thanks Stig for his hard work and dedication, and wishes him well in his future endeavors.

Dr. Rand German Recognized by KPMI

Dr. Rand German, Associate Dean, was awarded Honorary Membership in the Korean Powder Metallurgy Institute (KPMI) at its recent technical meeting in



Andong City, South Korea. The Conference, Conferring Ceremony, and Dinner with Former Presidents of KPMI all

took place in the first week of April 2010. In addition, Professor German gave the Conference Plenary Lecture, in which he emphasized the technical and economic barriers and opportunities in large scale metal powder injection molding

SDSU students won 1st place in the surveying competition, in which they surveyed a course with varying angles, distances and elevations as accurately and quickly as possible. Dr. Janusz Supernak, CCEE department chair and advisor for SDSU’s ASCE chapter since 1992, attributed the students’ excellent performance to their exceptional preparation and hours of practice. “First place out of



seventeen universities, two of which are polytechnic, is an achievement ASCE students should be very proud of” said Dr. Supernak.



SDSU also placed 4th in the concrete canoe oral presentation and 6th in the ethics-related technical paper competition and 9th in the steel bridge competition. The competition included both technical and sports competitions. SDSU students also took home 2nd in the scavenger hunt and volleyball, and 3rd in tug-of-war, basketball and dodge ball. Dr. Supernak commented that a highlight of the sports competitions was watching students use team spirit and team work to accomplish their goals.



Next year’s competition will be held in Los Angeles and students are already beginning to prepare.

COE Faculty Honored with Awards

Northrop Grumman Excellence in Teaching Award Dr. Fletcher Miller—Mechanical Engineering

Dr. Fletcher Miller, Assistant Professor, was recognized with the Northrop Grumman Excellence in Teaching Award at a special awards luncheon with Northrop Grumman personnel on May 5. Dr. Miller’s reputation among his students as an engaging and inspiring professor, his students’ impressive achievements under his mentorship and his hands-on teaching style were all applauded in his selection for this award. Dr. Miller will be recognized on the plaque in the Dean’s Office, along with other outstanding teachers in the College.



ASCE Outstanding Advisor Award Dr. Janusz Supernak—Civil Engineering

On May 15 Dr. Supernak, Chair of Civil, Construction and Environmental Engineering was presented with an Outstanding Advisor Award by the San Diego Section of ASCE (The American Society of Civil Engineers). Dr. Supernak has been advisor for the SDSU ASCE chapter since 1992. The College thanks you for the dedication and hard work recognized by this award.



Dr. Gupta Leads International Microwave Conference

Dr. Madhu Gupta, Professor of Electrical Engineering, and holder of the RF Communication Systems Industry Chair, is a leading organizer of this year’s In-

ME Students Selected for Trip to Italy

Dr. Thomas Impelluso, Professor of Mechanical Engineering, and two ME students, Levi Lentz and Nick Grell, recently travelled to Italy for a two-

powder injection molding.

The metal powder injection molding process is the subject of three books by Professor German. At the awarding ceremony, KPMI further honored Professor German by arranging a special book signing ceremony to coincide with the release of the Korean translation of his very popular textbook Powder Metallurgy and Particulate Materials Processing.

During his visit, Professor German was invited to speak and visit at the Han Yang University Ansan campus, POSTECH (Pohang University of Science and Technology), Korean Institute of Materials Science in Changwon, and visited POSCO Steel in Pohang (iron producer entering into powder production), PIM Korea in Gyoungasn (producer of turbocharger vanes and other metallic injection molded components), and ANC (fabricator molding machines used for microminiature metallic and ceramic devices), and had meetings with several of his former students, postdoctoral fellows, and research partners.

This award in Korea follows similar recognition from powder metallurgy associations in Japan, South Africa, Turkey, Europe, and the USA.

Microsoft DigiGirlz Day Promotes STEM Fields

Tracy Arnold, Information Technology Consultant, once again participated in Microsoft's DigiGirlz Day, which gives high school girls the opportunity to learn about careers in technology, connect with Microsoft employees, and participate in hands-on computer and technology workshops. Microsoft's DigiGirlz Day is a one-day event held in multiple locations around the country. The event in San Diego took place at National University's Technology and Health Sciences Center on April 2, 2010.



International Microwave Symposium (IMS) of IEEE (Institute of Electrical and Electronics Engineers), on May 23-28, 2010 at the Anaheim Convention Center. IMS is a world-class event



which annually draws 4,500 attendees and the participation of over 500 companies from around the globe.

Dr. Gupta is the Chair of the Technical Paper Review Committee, comprised of approximately 250 of the most known experts in the microwave engineering field. He is also the IMS 2010 Technical Program Committee Chair.

Dr. Gupta's Technical Paper Review Committee will select conference papers from nearly 1,000 submissions. IMS 2010 will feature over 250 technical papers presented orally, in over 60 sessions, and will represent the latest research in the field. There will be 122 interactive forum paper presentations with prototypes and simulations being demonstrated.

As the Chair of the Technical Program Committee, Dr. Gupta is in charge of workshops, special and honorary sessions, plenary sessions, panel sessions, and student contests.

The world's largest and most prestigious conference dealing with microwave technology, Dr. Gupta describes IMS as "the ultimate place to learn about the latest developments in research and applications. It is an opportunity for networking and interacting with leading researchers and professionals with expertise in all aspects of the radio-frequency and microwave fields. Anybody who is somebody in the industry will be there."

The symposium focuses on electronic engineering in the microwave frequency range. This part of the electromagnetic spectrum is used for satellite and wireless communication, navigation and remote sensing, and many other industrial, biomedical, and instrumentation applications. As the electronics technology progresses, more and more electronic hardware, such as computer chips, operate at high frequency, extending into the "microwave frequency" range

week trip as winners in a Society of Manufacturing Engineers contest. The contest was developed by the Italian Machine Tool Technology Awards program and was sponsored by the Italian Trade Commission.



Lentz and Grell wrote one of three essays selected from the United States on relative innovation in mechanical engineering-related industries and the issues they face. Students from Canada, South America and India were also selected for the trip, which took place March 13-27, 2010.

During the first week the group toured Italian manufacturing facilities, including Comau, an automobile supplier that manufactures machining



centers to create robots with the ability to manufacture machines, and Agusta-Westland, which manufactures many of the helicopters in the civil and defense sectors

of the U.S. They also toured car manufacturers like Mirafiori Motor Village, Ferrari and Ducati. In Treviso, the group stopped at Breton S. p. A., a company that manufactures parts for F-35 jet fighters for the U.S. military. "We saw Italy from a perspective most tourists don't get to see," said Lentz.

During the second week, the group took part in an advanced International Engineering program in the School of Management at Polytechnic of Milan. According to Lentz, working with the School of Management meant that students not only learned about the Italian design processes, but also about the marketability of a design, something engineering students may not immediately think about.

As a finale, a banquet was held at the Leonardo da Vinci Museum. The Assistant to the Italian Prime Minister



Tracy became involved with the DigiGirlz Program at last year's event, when she was asked to speak about her job at SDSU and what it's like to be a "girl in technology." From that experience she realized that role models and mentors are critical for girls at this age.

This year Tracy volunteered her time to help organize the logistics of the event and to photograph the girls as they participated in activities throughout the day. The photos will be used for press releases, the DigiGirlz website, and other marketing activities.

DigiGirlz Day encourages girls to consider STEM careers. The event provides career planning assistance, information about technology and business roles, thought-provoking exercises, and interesting Microsoft product demonstrations.

For more information on the DigiGirlz program, please visit <http://www.microsoft.com/>

microwave frequency range.

The IMS of IEEE is the centerpiece of "Microwave Week" which includes other technical activities, such as the RFIC (Radio Frequency Integrated Circuits) Symposium, and the ARFTG (Automatic RF Techniques Group) Conference, both of which are also located in Anaheim this year.



Dr. Gupta has been a member of IEEE for 42 years, and part of the IMS Conference for 38 years. For more information on the International Microwave Symposium, please visit www.ims2010.org.

Assistant to the Italian Prime Minister, members of the Italian Press, and the CEOs of companies toured during the first week were in attendance.

The benefits of traveling with students from other countries was apparent to Dr. Impelluso, who noted that by the second week the division between students from the U.S., Canada, South America and India broke down and everyone became one large group. There is now even a Facebook page for students to remain connected.

Dr. Impelluso is in the early stages of developing an exchange program between SDSU's Mechanical Engineering Department and the Polytechnic of Milan. To learn more about the companies visited and Dr. Impelluso's own experience, read his article, *Italian Machines that Make Machines*, at www.signonsandiego.com.

Faculty and staff are invited to submit stories, story ideas and photos to be included in this newsletter. The September Issue will include an article with a sentence or two submitted by each one of you (faculty and staff) about your activities over the summer.

Please contact Cindi at cmclain@mail.sdsu.edu or 4-6062 to contribute.

Special thanks to Kaitlin Andrews, Student Assistant and Media Studies major, for her contributions to this newsletter.

Research Corner—Projects Submitted & Awards Granted in April

<u>Name</u>	<u>Dept</u>	<u>Title of Project</u>	<u>FA</u>	<u>Status</u>
Dr. Ed Beighley	CCEE	Factory Mutual Global Summer Research Internship 2010	FMG	Awarded
Dr. Ed Beighley	CCEE	Spatially and Temporally Continuous Streamflow Estimates by Assimilating U.S. Geological Survey Gauge	Ohio State U	Submitted
Dr. Asfaw Beyene	ME	Pacific Region Clean Energy Application Center	UC Berkeley	Awarded
Dr. Robert Dowell	CCEE	Simulation and Testing Support Seismic Design Anchorage	UCSD	Awarded
Dr. David T. Hayhurst	DNS	SERVICE (Success in Engineering for Recent Veterans through Internship and Career Experience)	NSF	Submitted
Dr. David T. Hayhurst	DNS	Math, Engineering, Science Achievement (MESA) MESA Schools Program (MSP)	UCOP	Submitted
Dr. David T. Hayhurst	DNS	Math, Engineering, Science Achievement (MESA) Math Schools Program (MSP)	UCOP	Submitted
FMG = Factory Mutual Global UCOP= University of California Office of the President				