

# COLLEGE OF ENGINEERING FACULTY/STAFF E-NEWSLETTER



SAN DIEGO STATE  
UNIVERSITY  
College of Engineering

November 2009

## In the Spotlight

- The next Informational Faculty Meeting will be held on Friday, November 20th at 3:00 p.m. in Engineering Room 300.
- Furlough attendance summaries for staff need to be filled out each month and turned into Carly in the Dean's office. Please let Carly know if you have questions or plan to take a day other than the Academic Affairs recommended days. Suggested days for November are the 13th and the 25th.

## ABET Review Successful

Following a full year of intense preparation, the College of Engineering can proudly say that once again we are expecting full accreditation for all six of our previously accredited undergraduate programs and initial accreditation for Construction Engineering. An event that went unnoticed by no one, the review team descended upon the university October 4th to begin their thorough evaluation of each step of the education received by our students. From pouring through course materials to sitting in on classes and speaking with various alumni, the ABET team was exposed to the past, present and future of the SDSU engineer.

The true quality of degree programs is best assessed when seen through an external lens; in this case, the trained ABET professionals representing both industry and academia. Their report to the President and Provost was quite positive. The issues identified by the program evaluators should be easily resolved during the "due process" phase of the review.

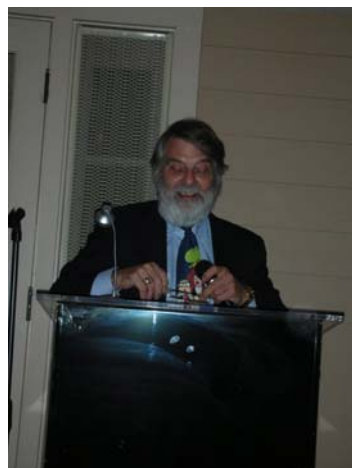
The collective efforts of the College of Engineering faculty and staff did not go unnoticed, as team chair Elizabeth Judson commented that their trip to SDSU was one of the best organized visits she has had. Kudos to all who put in such a great effort!



## Tracking The Dean

Date	Event
11/2	Dean Hayhurst and other SDSU officials meet with representatives from Washington D.C. to develop SDSU's Congressional requests
11/12	Dean Hayhurst will attend a reception featuring Dr. Gray Brechin, UC Berkeley
11/14	Dean Hayhurst will attend the SDSU Football game to host alumni at a pre-game tailgate and interact with VIP prospects in the President's Press Box during the game
11/16 & 11/17	Dean Hayhurst will travel to Washington D.C. to participate on an NSF/STEP Review Panel

## Event honoring Dr. fred harris Held



*Dr. fred harris takes a moment to reflect and address the crowd of nearly 100 people*

On October 1st, College of Engineering Alumni Eric and Peggy Johnson opened their home in Rancho Santa Fe to host an event to honor the many accomplishments of Dr. fred harris.

After a short reception, the attendees heard introductions from Peggy Johnson and President Weber before fred himself took to the podium to address all in attendance. Looking back on the event, fred stated that it warmed his heart to see and interact with so many of his students, friends and colleagues that he has had the good fortune to meet over his 43 years of teaching at the College of Engineering. He enjoyed the opportunity to celebrate common experiences and to create a sense of community amongst



people with common interests and related backgrounds. The outstanding turnout was evidence that fred's positive contributions do make a difference

11/19	Dean Hayhurst and Ken Walsh will meet with Gary Johnson and Pat Kelley of Granite Construction
11/19	Dean Hayhurst will host a luncheon to inform faculty of potential research collaborations with San Diego Tech Coast Angels
11/20	Dean Hayhurst will take part in the JDP Research Symposium
11/25	Dean Hayhurst will attend the CONNECT Board of Directors meeting at UCSD

Eric Johnson wrapped up the program by announcing a generous donation from himself and Peggy to create an anchor for the fred harris Endowed Chair in Digital Signal Processing.

*Eric & Peggy accept a gift from President Weber thanking them for their generosity*



*President Weber and Vice President Carleton pose with hosts Eric & Peggy Johnson*

Their gift of \$50,000 will be matched by Qualcomm, Inc. where Peggy is an Executive Vice President.

As this campaign begins to pick up steam, it is fred's hope that the endowed chair will support the creative activates of a skilled and talented person, in what is planed to be a long line of teacher scholars who will bring recognition to the college and the field of digital signal processing.

### Dr. Beyene Featured in *Electricity Today*

Wind turbine blades changing shape 8/25/09

Morphing blades made of advanced composite materials that can rapidly change their shape depending on the wind could help lead to advanced wind turbines that perform better and last longer.

'The idea was born from a simple observation of a fish in an aquarium,' said researcher Asfaw Beyene, a mechanical engineer at **San Diego State University**. 'Many flying and swimming animals have efficiencies superior to manmade devices. The primary difference between natural motion and motion of manmade devices is lack of geometric adaptability to varying flow conditions.'

'In flying and swimming creatures, the geometries morph to fit to a flow condition,' Beyene added. 'In man-made devices, typically the geometry remains rigid in spite of widely varying flow conditions.'

Beyene is leading one team exploring morphing blades for wind turbines. Another team is working at the University of Bristol in England.

Modern wind turbine blades are typically made from a combination of glass and carbon-fiber-reinforced plastics. During manufacture, the plastic resin is heated and cooled in a controlled manner so that it bonds with the fibers and sets to form a rigid structure.

Beyene envisions morphine wind turbine blades made out of plastic materials similar to urethane rubber that flexibly bend and twist shape to reach the optimal angles that get as much energy from the wind as possible, depending on the wind's strength. He explained they have completed lab tests with a number of roughly 3-foot-wide (meter-wide) rotors made from a number of different materials.

Wind energy is growing more and more popular worldwide. The United States is currently the world's largest generator of wind energy by total megawatts, and by 2030, the Department of Energy predicts that as much as one-fifth of the nation's power might come from wind. On a per capita basis, other nations are even further ahead of the United States. Denmark, for instance, already gets one-fifth of its power from the wind.

'The results are very promising,' Beyene said

### Professor fred harris speaks at HCDC

Tuesday, August 18th 2009, Professor fred harris gave a plenary talk at the High Capacity Digital Communications Laboratory (HCDC) "Summer School" at the University of Alberta, in Alberta, Canada. The talk was entitled *Multirate Filters and Applications of Multirate Signal Processing to Communication Systems*.

According to the University of Alberta website, their *School* "focuses on recent advances in Information Theory and Communications. The goal of the school is to provide a forum for research exchange among students, to encourage them to present their work and to get feedback from their peers and leading invited specialists in the field".

Kudos to fred for this honor and for representing SDSU!

### QUALCOMM, Inc. Makes Major Gift to Engineering

Qualcomm, Inc. has once again demonstrated its commitment to Engineering education and SDSU by earmarking \$200,000 of a recent \$450,000 gift to SDSU for the College of Engineering. Of this money \$100,000 is designated for the Dean's discretionary fund with, while the other portion will support Project Lead the Way. Of the \$100,000 designated for the Dean's discretionary fund, \$75,000 will be provided directly to the Department of Electrical and Computer Engineering to support the wireless communication effort. The remaining amount will be used to catalyze new activities college-wide including initiating new study abroad programs for undergraduate students, etc. The support of PLTW is also crucial, ensuring that students come to SDSU prepared to handle the rigorous engineering courses.

This gift comes at a crucial time, when fundraising is especially challenging. Support for engineering education is imperative to the future of the San Diego, where "engineering is really key to economic growth" explained Dean Hayhurst to a Daily Aztec reporter. "We are an innovation area, developing things that other people manufacture, so having very well-qualified engineers is key to regional success".

### Foundation Grant Helps Provide Leadership Development

With the goal of engaging potential leaders in professional development activities, PBS&J, an employee-owned company that provides infrastructure planning, engineering, construction management, architecture, and program management services, recently granted a \$5,000 contribution to the Math, Engineering and Science Achievement (MESA) Alliance, in support of MESA's annual leadership summit. Funding was provided through The PBSJ Foundation, Inc.

The San Diego MESA Alliance, comprised of San Diego State University, San Diego City College, Southwestern College, and Ventura College provides out-of-classroom experiences and professional development opportunities for its students. The grant will be used to host San Diego MESA students at the MESA Leadership Summit that will take place in February 2010. The three-day summit will engage 60 San Diego MESA students and will focus on individual strengths, teamwork, and leadership through various seminars and leadership workshops.

"We believe in what the MESA Engineering Program can achieve through the Leadership Summit, and we're pleased to support such a great program that helps improve the leadership ability and personal growth of the students," says Jennifer Chen, Senior Project Manager based in PBS&J's San Diego office. "This program develops a community of engineers and physical science students who not only utilize the skills learned in college, but also share these new talents with peers and pre-college students." —PBS&J Press Release 8/20/2009



*PBS&J representatives present a check to MESA Alliance representatives.*

*From left: Dean Gipson (PBS&J), Alyson Ponomarenko (SDCC), Angeline Villanueva-Yang (SDSU), Theresa Garcia (SDSU), Cynthia Peraza (PBS&J), Eric Pamintuan (SDSU).*

## Meet the Faculty & Staff



**Dr. Thais Alves** joined the CCEE faculty this fall, 2009 thanks to funding support from the Construction Engineering Endowment. She received her Ph.D. from UC Berkeley. She is a civil engineer specializing in construction management and project-based production systems. Her areas of interest include the application of lean production/construction concepts, principles, and tools to improve the performance of production systems and products in different stages of their life-cycle and supply chains.

For over 10 years she has been teaching, advising students, researching, and collaborating with construction companies towards the dissemination and implementation of lean concepts especially in the field of production planning and control at construction sites. She is currently investigating the innovations companies develop to sustain lean implementation and the application of lean in office activities.



**Michele Ritchie** is the Administrative Support Assistant for the J.R. Filanc Construction Engineering and Management Program and has been working at SDSU for the past year. Before joining the staff at SDSU, Michele worked for San Diego Unified School District.

Michele grew up in Michigan but has spent most of her life in California and has lived in San Diego for the past 20 years. She and her husband, Phil, and son, Colin, spent several years cruising aboard their sailboat *Delia*. Michele swims, reads, and enjoys music and libraries.

## Faculty/Staff Convocation Held



*Dr. Eugene Olevsky was honored at this year's Convocation as the College's Monty Award Recipient*

More than 600 faculty and staff members filled Montezuma Hall on August 27th for the All-University Convocation to mark the start of the academic year. The event focused on welcoming both faculty and staff to a new semester and recognized the role that shared governance will play in these challenging financial times.

Dr. Eugene Olevsky, director of the SDSU-UCSD Joint Doctoral Program in Engineering Sciences and expert in powder sintering, was the College of Engineering's 2009 Alumni Association Outstanding Faculty Award recipient. Following the presentation of the Monty awards, President Weber addressed the audience, summarizing budget related issues and stressing the importance of maintaining a strong campus community.

For the full story published in SDSU Universe please go to:

[http://universe.sdsu.edu/sdsu\\_newscenter/news.aspx?s=71522](http://universe.sdsu.edu/sdsu_newscenter/news.aspx?s=71522)

## Research Corner—Projects Submitted & Awards Granted June-October

<u>Name</u>	<u>Dept</u>	<u>Title of Project</u>	<u>FA</u>	<u>Status</u>
Dr. James Banks, Co-pi(s) Ming-Hsiang Tsou, John Kim	CCEE	Integration of Traffic Simulation and Fire Spread Models to Improve the Scientific Basis for Wild-fire Evacuation Decisions	NSF	Submitted
Dr. Edward Beighley	CCEE	Analysis of the Hydrologic Fluxes of Nutrients and Sediment, and the Coastal Ocean Response of the Southern California Bight	USC	Submitted
Dr. Edward Beighley	CCEE	Determining Erosion Control Effectiveness	VPI&SU	Submitted
Dr. Edward Beighley	CCEE	Fires, Floods, and Environmental Changes in Coastal Ecosystems	USC	Submitted
Dr. Edward Beighley	CCEE	GISHydro Development in ArcGIS and Maintenance of the GISHydro Program and Web Server	NSF	Awarded
Dr. Asfaw Beyene Co-pi(s) Walter Oechel	ME	Energy, Water, and Global Change as a Regional Agenda of the Americas, Pan-American Advanced Studies Institute	NSF/ISE	Awarded
Dr. Asfaw Beyene	ME	Industrial Assessment Centers	US DOE	Awarded
Dr. Luciano Demasi	AE/EM	CAREER: Computational Multi-theory Architecture for the Analysis of Structures and Multi-discipline Problems	NSF	Submitted
Dr. Arif Ege Engin	ECE	CAREER: Power Delivery Network Synthesis for Reliable High-speed Digital Systems	NSF:EEC	Submitted
Dr. Arif Ege Engin	ECE	Collaborative Research: Efficient Power Distribution for 3D IC Integration	NSF	Submitted
Dr. Rand German	ME	US-Egypt Cooperative Research: Development of High Performance Nano-sized Tungsten Heavy Alloy Composites by Powder	NSF/ISE	Awarded
Dr. David T. Hayhurst	DNS	ARRA: Transitioning Troops to Engineers: From Military Experience to a Civilian Engineering Career	NSF/DEEC	Awarded
Dr. David T. Hayhurst	DNS	Math, Engineering, Science Achievement (MESA)	UCOP	Awarded
Dr. David T. Hayhurst	DNS	MESA MSP Programs / Imperial Valley Site	UCOP	Awarded
Dr. David T. Hayhurst	DNS	SDSU SWE, NSBE and SHPE Chapters	NGC	Submitted
Dr. David T. Hayhurst, Co-pi(s) Theresa Garcia	DNS	STEP Partnership of San Diego	NSF/DEHR	Submitted
Dr. Gustaaf Jacobs	AE/EM	Aerodynamic Assessment of High Speed Sled in Dual Slot Guideway	GAC	Awarded
Dr. Gustaaf Jacobs	AE/EM	CAREER: Inertial Particle/Droplet Transport in Separated Flow: Application to Fuel Injection	NSF	Submitted
Dr. Sam Kassegne, Co-pi's Dr. Khaled Morsi, Dr. Kee Moon	ME	New Enabling Technology for Building- Side-, Auto-, and Cloth-mountable Flexible Solar Cells Using All-polymer Approach	SDF	Awarded
Dr. Sam Kassegne	ME	CAREER: Fundamental Investigation of Interfacial Interaction in Carbon Electrodes and Organic Photoactive Polymers	NSF	Submitted
Dr. Sunil Kumar, Co-pi(s) Dr. Gordon Lee, Dr. Premanand Chandramani	ECE	An Integrated and Cognitive Home Energy Management System for Demand Response	CIEE	Awarded
Dr. Sunil Kumar	ECE	Cross-layer Design for Robust and Scalable Video Transmission in Dynamic Wireless Environments	DOD	Awarded
Dr. Sunil Kumar	ECE	Multi-Resolution Coding for Improved Wireless Network Capacity	LN	Submitted
Dr. Gordon Lee	ECE	Design of an Unmanned Aerial Vehicle for Intelligent Systems Research: AIRWOLF	DOD	Submitted
Dr. Karen May-Newman	ME	A Computational Model for Predicting Valvular Remodeling in the VAD-assisted Heart	NSF	Submitted
Dr. Karen May-Newman	ME	Biomechanics of the Aortic Valve in the VAD-Assisted Heart	DHHS	Submitted
Dr. Fletcher Miller	ME	Developing the Narrow Channel Apparatus as a NASA Standard Material Flammability Test	NASA	Submitted
Dr. Fletcher Miller	ME	Quantifying the Effect of Santa Ana Winds on Wildland-Urban Interface Fires in San Diego County	DOD	Awarded
Dr. Fletcher Miller	ME	Quantifying the Effect of Santa Ana Winds on Wildland-Urban Interface Fires in San Diego County	Exxcel, Inc	Awarded

Dr. Kee Moon, Co-pi's Dr. Sam Kassegne, Dr. Khaled Morsi	<b>ECE</b>	Polymer Light Emitting Diode Chip with 3-D Carbon Cathodes	<b>AMO</b>	Submitted
Dr. Eugene Olevsky	<b>ME</b>	Fabrication of Advanced Armor and Anti-armor Components by Spark-plasma Sintering	<b>DOD AAR</b>	Awarded
Dr. Eugene Olevsky, Co-pi (s) Marcie Bober, Randall German	<b>ME</b>	IGERT: Fellowships For Future Diverse Workforce in Nanomaterials	<b>NSF</b>	Submitted
Dr. Mauro Pierucci	<b>AE/EM</b>	UNUPI Students at SDSU	<b>UPI</b>	Awarded
Dr. Mahasweta Sarkar	<b>ECE</b>	CAREER: A Medium Access Control (MAC) Architecture for Personalized, Mobile and Ubiquitous Telemedicine Applications	<b>DOD ONR</b>	Submitted
Dr. Mahasweta Sarkar	<b>ECE</b>	NeTS: Medium: Collaborative Research: Small World Wireless Mesh Networks (SWoMnet)	<b>NSF</b>	Submitted
Dr. Satish Sharma	<b>ECE</b>	Novel or Hybrid Ultra-Wideband Notch Type Antenna Element	<b>NGA</b>	Submitted
Dr. Satish Sharma	<b>ECE</b>	ARRA: CAREER: Novel Reconfigurable Aperture Antennas and Arrays for Compact Multifunctional Antenna Solutions	<b>NSF</b>	Awarded
Dr. Satish Sharma	<b>ECE</b>	Acquisition of Instruments for the Measurement of Antenna Characteristics of Novel Compact Antennas and Arrays	<b>DOD: AFOSR/ONR/AMC</b>	Submitted
Dr. Satish Sharma	<b>ECE</b>	Dielectric Resonator Antennas	<b>NGA</b>	Submitted
Dr. Julio Valdes	<b>CCEE</b>	Collaborative Research: Integrated Experimental-Numerical Characterization of Granular Mixtures	<b>NSF</b>	Submitted
Dr. Ken Walsh	<b>CCEE</b>	Collaborative Proposal: Coupled Flow/Deformation Analyses of Effective Depth of Wetting of Moisture Sensitive Soils	<b>NSF</b>	Submitted
Dr. Ken Walsh	<b>CCEE</b>	Surface Flux for Cracked and Intact Clays from Ponded and Sloped Conditions	<b>NSF/DE</b>	Awarded

**FW LLC = Fiber Wood LLC**

**VPI&SU = Virginia Polytechnic Institute & State University**

**UCOP = University of California Office of the President**

**NGC = Northrop Grumman Corporation**

**GAC = General Atomics Corporation**

**SDF = San Diego Foundation**

**CIEE = California a Institute for Energy & the Environment**

**LN = Leaf Networks**

**DHHS = Department of Health & Human Services**

**AMO = AMO Co. Ltd.**

**UPI = University of Pisa, Italy**

**NGA = NextGen Aeronautics**

Faculty and staff are invited each month to submit stories, story ideas and photos that you would like to see included in this newsletter.

Please contact Carly at [chouse@mail.sdsu.edu](mailto:chouse@mail.sdsu.edu) or at 4-0605 by the 20th of each month