



## Engineering News

September/October, 2010

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### Reminders

**Thurs. Nov. 4 at 11 am** is the next ALL-Faculty Informational Meeting in 423-B.

**Tues. Nov. 9 at 10 am** is the next ALL-Staff Meeting in the Dean's Conference Room.

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## SDSU's Formula SAE Car Team Makes SDSU Proud



Aztec Racing competed with its Formula SAE AR-10 car against over 100 teams at California Speedway during the summer of 2010, finishing in 26<sup>th</sup> place for presentation –an Aztec Racing record high—and 5<sup>th</sup> place for cost report

examination. The Formula SAE AR-10 car is built by SDSU's Society of Automotive Engineers, and was entered into the 2010 FSAE West Competition.

Racing was the last event of the competition and Aztec Racing chose Tyler Hauptman, SAE President, to take the wheel. “The team marched proudly down the pit lanes, feeling accomplished for getting farther in the competition than many past Aztec Racing teams,” according to Nicolas Megevand, SAE Project Manager. Tyler was able to reach the average top lap time of 1 minute 28 seconds during his first two laps, and pushed the car to a time of 1 minute 17 seconds during the third and fourth laps before mechanical difficulties forced Aztec Racing to withdraw from the racing competition. [Read More](#)

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## **Dr. Ponce’s Visualab Reaches Out on the Web**



Production is under way in the CCEE Department’s Visualab as Dr. Miguel Ponce is finishing up one of his newest videos to teach students about hydrology. Working on Apple’s Final Cut Pro and using two computer screens at once, Dr. Ponce produces videos that he posts to his website as an online resource for students, and the

general public.

Dr. Ponce has been producing videos for just over one year now, and has already created over thirty videos, with each taking about two weeks to complete. He was inspired by YouTube, and by the “Khan Academy,” which is a media base of over 1,800 videos created by one person to teach people about various topics. “I’m doing what Khan is doing, just on a smaller scale,” said Dr. Ponce, who focuses on creating longer videos of better quality. “We do everything from concept to posting,” explained Dr. Ponce of the production process. He does everything himself, which is no easy feat. His productions combine video, voice, music, script, still images and animation; he also works on digital design. [Read More](#)

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## **Dr. Satish Sharma Receives NSF CAREER Award**



Dr. Satish Sharma, Associate Professor of Electrical Engineering, has received a National Science Foundation CAREER Award for \$400,000 to conduct research on novel aperture antennas. NSF bases CAREER awards on the transformative quality of research and the uniqueness of educational plans. Dr. Sharma received the award in

August 2009, and his project is expected to go through July 2014.

Research supported by this award will explore novel reconfigurable aperture antennas and arrays, which can provide compact multifunctional antenna solutions. He hopes his

research will lead to novel, compact and reconfigurable aperture antennas for wireless communications and radar systems providing multi-functionality. His proposed innovations have the potential to allow for hardware minimizations, simplify complex antenna implementations, and provide enhanced performance antenna solutions.

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Center for Sensorimotor Neural Engineering

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## **Engineering Research Center One Step Closer to Reality**

SDSU's College of Engineering, along with the University of Washington (UW) and the Massachusetts Institute of Technology (MIT), has submitted a proposal to the National Science Foundation for a \$40 million, 10-year grant which would support the creation of an Engineering Research Center for Sensorimotor Neural Engineering.

A team of fourteen researchers and supporters representing the College of Engineering recently traveled to the University of Washington-Seattle campus for a NSF ERC site visit, an important step in the award process. SDSU, UW, and MIT are one of just eleven teams of universities selected for a site visit. Out of those eleven, five or six will be awarded funding for an ERC. This is significant because SDSU is now on a very short list of universities that will possibly receive center funding.

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## **AIAA Student Design Team Wins 3rd Place**



Congratulations to SDSU's American Institute of Aeronautics and Astronautics (AIAA) students for taking 3rd place in the 2009-2010 Undergraduate Space Transportation Design Competition! Their design was entitled Human Exploration and Reconnaissance of a Massive Extraterrestrial Space-born Object (HERMES).

Approximately 10-15 universities entered the competition.

The contest required teams to design a space transportation architecture capable of sending two or more astronauts from Earth to a Near Earth Asteroid, and return them safely. The system was designed with an initial operation capability in 2020 and a 10-year operational lifetime. [Read More](#)

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## **Dr. Asfaw Beyene's PASI Conference Draws International Leaders**



Leaders from all over the world gathered for the Energy, Water, and Global Climate Change as a Regional Agenda of the Americas Conference this summer, a 10-day international conference hosted by Dr. Asfaw Beyene and Dr. Walt Oechel of SDSU's Biology Department. Dr.'s Temesgen Garoma and Mirat Gurol were also on the conference's organizing committee.

The conference was a Pan-American Advanced Studies Institute (PASI) project and was funded by the National Science Foundation. The first five days of the conference took place in San Diego, and the last five in Ensenada, Mexico. [Read More](#)

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### **Dr. Ken Walsh Receives Faculty Monty Award**



Dr. Ken Walsh was honored at the all-university convocation in August 2010 with Faculty Monty Award for the College of Engineering. Dr. Walsh has worked tirelessly to design, launch and grow the J. R. Filanc Construction Engineering and Management Program degree and has built its endowment to more than \$4

million.

Dr. Walsh was surprised and pleased to learn that he had been chosen to receive the award. "There are a lot of great faculty in the college, so to be the one recognized and to be amongst the great people that have won in the past is really special to me," he said.

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### **SDSU Engineers See the World – Summer 2010 Study Abroad**



**Panama City, Panama**  
**Pisa, Italy**  
**Coimbatore, India**

**Panama City, Panama** - Five students and faculty advisors Dr. Julio Valdes and Mr. Tom Zink stayed at the "City of Knowledge" technological campus adjacent to the Miraflores Locks of the Panama Canal for an outstanding 5 week study abroad experience beginning June 1. Students took two courses: Canal Engineering and History of the Panama Canal, taught by Dr. Valdes and Mr. Zink. Along with VIP presentations and site visits from canal authorities, the group visited canal dams, locks, and excavation sites for the canal expansion program. Weekend trips

to the mountains and islands, exploring the city and becoming SCUBA certified while in Panama rounded out the experience for the students. Dr. Valdes said, "the trip was a great success." He and Mr. Zink plan to take a larger group of approximately 15 students for the summer 2011 program.

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## Tracking the Dean - Highlights of the Dean's Calendar

Oct. 28-29	Dean Hayhurst will travel to the <i>Frontiers in Education</i> Conference and make a presentation on Troops to Engineers, Arlington VA
Nov. 1	The Dean will attend the Order of the Engineer Board of Governors Meeting in Phoenix, AZ
Nov. 4	The Dean will participate in the Veterans Center Grand Opening on campus
Nov. 4 & 5	The Dean will meet with Dr. Don Heller, from Penn State University's Center for the Study of Higher Education
Nov. 5	The Dean will meet with Steve Doyle, President, Brookfield San Diego Builders
Nov. 5	The Dean will visit the calling floor for SDSU's Annual Fund Drive
Nov. 9-10	The Dean will travel to San Jose for a series of development/fundraising meetings and events
Nov. 11	The Dean will have lunch with Admiral Ken Slaght, Vice President and General Manager, General Dynamics Information Technology, and Dean's Advisory Board Member
Nov. 12	The Dean will participate in a video conference with Karl Kriebes of K5 Corporation
Nov. 15-16	The Dean will travel to Arlington VA to participate on an NSF Proposal Review Panel
Nov. 17	The Dean will attend the Scholarship Donor Appreciation Luncheon on campus
Nov. 18	The Dean will attend the CONNECT Workforce Partnership Presentation of Robert Reich
Nov. 19	The Dean will meet with Irwin Zahn, CEO of Autosplice, and several members of the Dean's Advisory Board
Nov. 19	The Dean will have lunch with Mike Reed, President and CEO of Electronic Systems, Inc., General Atomics
Nov. 22	The Dean will attend the Campaign Initiatives Meeting on campus
Nov. 29	The Dean will participate in the CONNECT Board of Directors meeting

Dec. 3

The Dean will have lunch with Maria Fischer, CEO of Bientech International and Dean's Advisory Board member.

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## **Research Corner - Projects Submitted & Awards Granted**

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Research Corner - Projects Submitted & Awards Granted in May				
Name	Department	Title of Project	FA	Status
Dr. Robert Dowell	CCEE	Simulation and Testing Support-Seismic Design Anchorage	UCSD	Awarded
Dr. Ed Beighley	CCEE	Factory Mutual Global Summer Research Internship 2010	Factory Mutual Global	Awarded
Dr. Ed Beighley	CCEE	Continued Porting of GISHydroNXT to ArcGIS 9 - Phase II	VA PISU	Submitted
Dr. Sunil Kumar	ECE	Model-based Sensor Placement for Diagnosis and Control in a Circulating Fluidized Bed	Clarkson University	Submitted
Research Corner - Projects Submitted & Awards Granted in June				
Dr. Kenneth Walsh	CCEE	An Integrated Framework for Creation and Assessment of Sustainable Construction Processes	Arizona State University	Awarded
Dr. Ed Beighley	CCEE	Decomposing the Water Storage Signal from Basins in Varied Climate Settings with Remote Sensing and Modeling	NASA	Submitted
Dr. Sunil Kumar	ECE	Multimedia-based Integration of Cross-layer Techniques	DOD AFRL	Submitted
Dr. Ed Beighley	CCEE	Evaluating SWOT Observations of River Discharge and Their Implications for Large Scale Hydrological Estimation and Prediction	Ohio State University (The)	Submitted
Dr. David Hayhurst, Ms. Theresa Garcia	DNS	STEP Partnership of San Diego	NSF DEHR	Awarded
Dr. Thais Alves	CCEE	Investigation of Lean Six Sigma Implementation in NAVFAC Construction Contracts-Project Management	DOD NSSC	Submitted
Research Corner - Projects Submitted & Awards Granted in July				
Dr. Eugene Olevsky	ME	Fabrication of Advanced Armor and Anti-armor Components by Spark-plasma Sintering	DOD AARDEC	Submitted
Dr. Kenneth Walsh	CCEE	NEESR-CR: Full-scale Structural and Nonstructural Building Systems Performance During Earthquakes	UCSD	Submitted
Dr. Temesgen Garoma	CCEE	CAREER: The Effects of Residual Antibiotic Contamination on the Development, Maintenance and Transport of Antibiotic Resistance in the Environment	NSF	Submitted
Dr. Temesgen Garoma	CCEE	Significance of Sub-Therapeutic Levels of Ciprofloxacin in the Environment	The SD Foundation	Awarded
Dr. Satish Sharma	ECE	Wideband Metamaterial Antennas Integrated into Composite Structures	NextGen Aeronautics	Awarded
Research Corner - Projects Submitted & Awards Granted in August				
Dr. Sunil Kumar	ECE	Adaptive Tactical Black HAIPE MANET	ViaSat Inc	Submitted
Dr. David Hayhurst	DNS	SDSU Mathematics, Engineering, Science Achievement (MESA) Program Summer Camp	NASA	Submitted
Dr. Ed Beighley, Mr. David Lipson	CCEE	Collaborative Research: The Influence of Plant Functional Types on Ecosystem Responses to Altered Rainfall	NSF	Submitted
Dr. Gustaaf Jacobs	AE/EM	Near-bottom Turbulence and Sediment Resuspension Induced by Nonlinear Internal Waves	Cornell University	Submitted
Dr. Satish Sharma	ECE	High Performance UHF Antenna Subsystem for Cubesats/Nanosats	Space Micro Inc	Awarded
Dr. Satish Sharma	ECE	Ultra Wideband Conformal Antennas for Network Enabled Weapons	NextGen Aeronautics	Submitted
Research Corner - Projects Submitted & Awards Granted in September				
Dr. Gordon Lee, Mr. Eric Frost, Mr. Barry Janov	ECE	Theoretical Analysis, Explanatory Studies and Technical Services	DOD SNWSC	Awarded
Dr. Ed Beighley	CCEE	GISHydro Development in ArcGIS and Maintenance of the GISHydro Program and Web Server	VA PISU	Awarded
Dr. Ed Beighley	CCEE	An Integrated Climate Assessment and Water Planning Model for San Diego County	UCSD	Awarded
Dr. Sunil Kumar	ECE	Cognitive Cross-Layer Protocols for Multi-Hop Transmission	TrellisWare Inc.	Submitted
Dr. Julio Valdes	CCEE	Propagation of Localized Compaction in Constrained Particulate Materials	NSF	Submitted
Dr. Mahasweta Sarkar, Dr. Santosh Nagara	ECE	Small-World Wireless Mesh Networks - NeTS: Medium: Collaborative Research: SWoMNeTs	NSF	Submitted
Dr. David Hayhurst	DNS	SERVICE (Success in Engineering for Recent Veterans through Internship and Career Experience)	NSF DEEC	Awarded
Dr. Randall German, Dr. Eugene Olevsky	ME	Multi-Scale Modeling and Experimentation on Liquid Phase Sintering in Gravity and Microgravity Environments	NASA	Awarded
Dr. David Hayhurst, Ms. Theresa Garcia	DNS	MESA MEP	UC Office of the President	Submitted
Dr. Arif Engin	ECE	Rapid Broadband Dielectric and Surface-Roughness	NSF	Submitted
Dr. Luciano Demasi, Dr. Jose Castillo	AE/EM	Multi-scale and Multi-theory Architecture for Composite Structures	NSF	Submitted

VA PISU = Virginia Polytechnic Institute and State University  
DOD AFRL = Dept. of Defense Air Force Research Laboratory  
NSF DEHR = NSF Directorate for Education and Human Resources  
DOD NSSC = Dept. of Defense Naval Supply Systems Command  
DOD AARDEC = DOD Army Armament Research, Development and Eng. Ctr.  
DOD SNWSC = DOD Space and Naval Warfare Systems Command  
NSF DEEC = NSF Division of Engineering Education and Centers

[Click Here For Sizable Chart](#)

**Thanks to Kaitlin Andrews, Dean's Office Student Assistant and Public Relation major, for her interviewing and writing contributions to this newsletter.**

Please contact Cindi McClain at [cmccclain@mail.sdsu.edu](mailto:cmccclain@mail.sdsu.edu) or 4-6062 if you have a story or story idea to suggest for future editions.

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