



Winter 2011

The Rock 2011

School of Engineering and Computer Science

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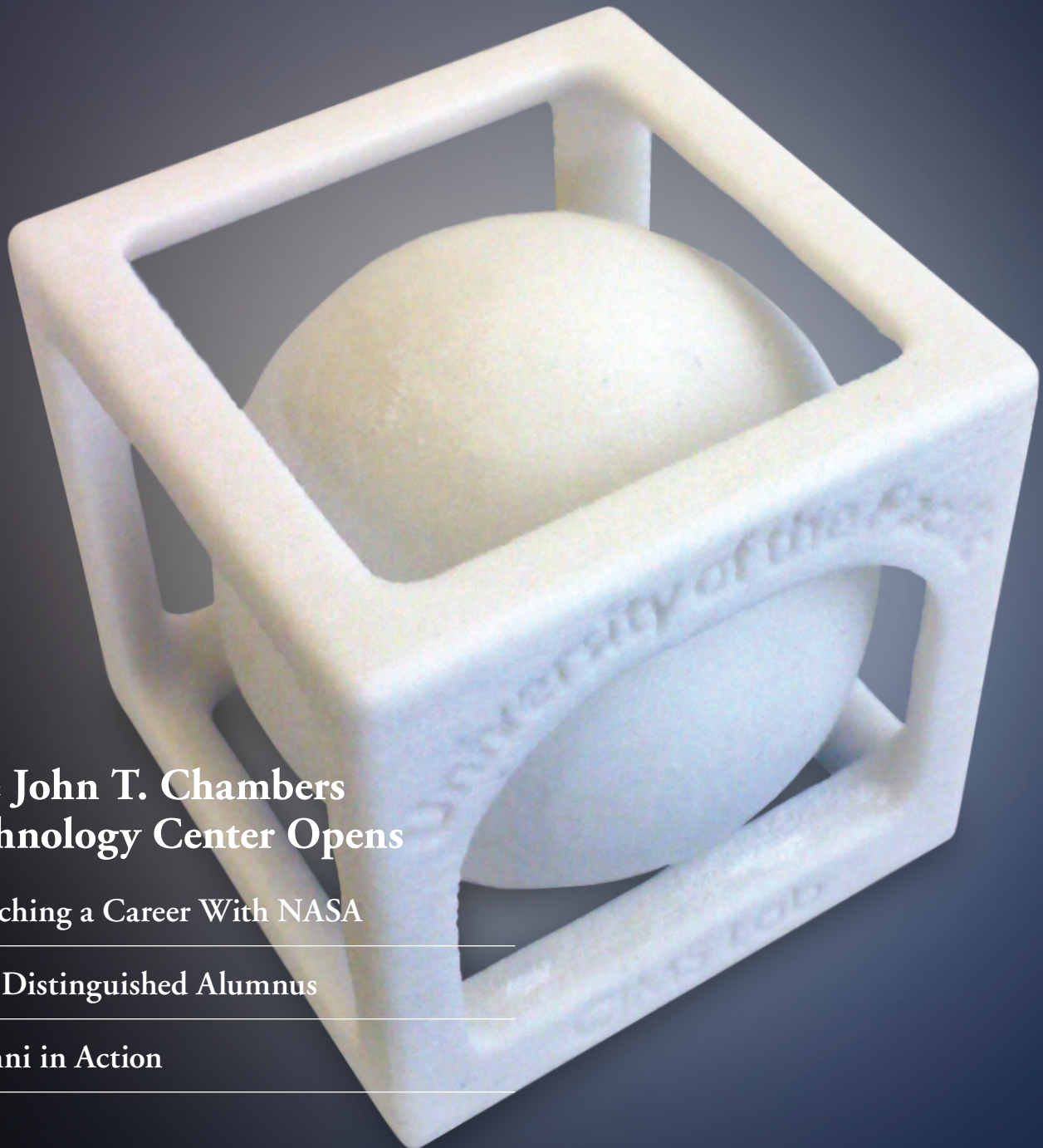
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UNIVERSITY OF THE
PACIFIC
School of Engineering
and Computer Science

THE ROCK



**The John T. Chambers
Technology Center Opens**

Launching a Career With NASA

2011 Distinguished Alumnus

Alumni in Action

WINTER 2011

THE ROCK

UNIVERSITY OF THE
PACIFIC
School of Engineering
and Computer Science

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THE ROCK

Winter 2011

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From the Dean



*Ravi Jain,
Dean of the School of Engineering
and Computer Science*

Greetings!

I cannot think of a better way to start this letter than with the words – thank you. Pacific’s School of Engineering and Computer Science has grown exponentially during the last year. Not only did we open the John T. Chambers Technology Center, the construction was completed and the Center was occupied a semester earlier than scheduled. We would not have been able to do this without the on-going support of our alumni, industry partners, faculty, staff, students and friends and most importantly, the President, the Provost, and Vice President for Business and Finance.

In addition to the Center’s opening, the School has implemented a distinctive graduate program that allows students to complete their bachelor’s and master’s degree in five years. The graduate program already has an enrollment of more than 70 students and has four distinctive concentrations. You will also be pleased to know that our undergraduate program is now streamlined and effectively integrated with the co-op program and the graduate program.

The School is experiencing unprecedented growth. With the work of our faculty, the support of industry partners and the teaching and learning infrastructure housed in the Technology Center, the School is well-positioned to lead the development of superior technologies that will support the betterment of society.

We are proud of our new home on campus and you will be too. I personally extend an invitation to you to visit the campus. You will be amazed at the many new developments at the School and across campus.

Warm regards,

Ravi K. Jain
Dean, School of Engineering and Computer Science

The John T. Chambers Technology Center Opens

From state-of-the-art laboratory space to networked classrooms and research facilities, the new John T. Chambers Technology Center is already living up to its mission of helping forward Pacific's aspirations of national leadership in technological innovation.





Ribbon cutting ceremony October 7, 2010.

Bottom line benefit: the center has enabled the School to offer an increasingly superior teaching and learning environment.



TECH CENTER SPECS

- 23,500 square foot facility
- LEED Gold standards
- 7 research, teaching, and industry project labs
- 28 faculty offices
- 1 studio classroom and lab
- 2 lecture labs and classrooms
- Reception area
- 2 conference rooms
- 2 student study areas
- Dean's administration area

The Center's enhanced learning environment includes the Computer Integrated Manufacturing Systems (CIMS) Lab, where technology like the Computer Numerically Controlled (CNC) milling machine, the Z-Corp Rapid Prototyping Machine and computers running Esprit CAD/CAM software are housed. A new Coordinate Measuring Machine (CMM) and Dynamometer will soon be added. This means students can now prototype SolidWorks 3D models, develop CNC code, machine the part and confirm the size and shape of the part in one place.

"This is my last year at the University of the Pacific. I was happy to see the building completed before I graduate. I cannot wait to take classes in there next semester!" exclaimed Mark Rea (ME, '12).

The Center is also important in the development of other engineering programs like bioengineering, according to Associate Professor and Director of Bioengineering Jeff Burmeister. "The Center's bioengineering laboratory provides significant and continuous improvement to every facet of Pacific's Bioengineering Program."

The Center provides spacious and well-equipped laboratory space for the Bioengineering Program, which, in turn, means more courses can be offered. This spring, first-year students will be able to take Biology Lab for Engineers, where they will explore biological phenomena using engineering tools and quantitative analysis techniques. The lab space will also be used to further enhance the content and student learning experience in bioelectricity, biomaterials, biomechanics, and senior design courses. "We hope to soon move laboratory activities from our engineering physiology course into the new space as well to take advantage of these state-of-the-art facilities," commented Assistant Professor James Eason.

The Center has enabled the School to offer an increasingly superior teaching and learning

environment, affirms Dr. Cherian Mathews. "Students can face forward and view a whiteboard and projection screen; swiveling around gives them access to computers and test equipment. These classrooms allow professors to make class sessions more productive by integrating software and lab demonstrations."

Equally important is the Center's ability to attract industry collaboration. "The John T. Chambers Technology Center will serve as a catalyst for the advancement of regional, national, and international technology collaboration and economic development," said Dean Ravi Jain.

Although the University has always maintained strong ties with industry, this particular lab makes room for a more holistic, well-rounded relationship that will serve the educational mission of the University, meet crucial industry needs, and support faculty development. This also represents the values of the Center's namesake, John T. Chambers, Chairman and CEO of Cisco. Under Chambers' leadership, Cisco has become a global leader in Communications and Information Technology, and has shown the world how networked technologies can transform business, healthcare, education, the environment and the local and global communities in which we live.

It's that spirit of transformation that has underpinned the development of the Center from the beginning. Now that the Center is open, it is an outward and visible sign of the commitment of Pacific's School of Engineering and Computer Science to serve society as a leader in technological innovation.

The generous support of alumni, industry and friends made the Technology Center a reality. The doors of the Technology Center would not have opened on time without the concerted support of the faculty, administration, staff and students.

School News

- Bioengineering
- Civil Engineering

Bioengineering

Community service enhances learning

The Bioengineering Program continues to employ a strong emphasis on the role of community service as integral to a complete education. During this last year, multiple student outreach projects have made a difference around the world.

Our student chapter of the Biomedical Engineering Society (BMES) has been particularly active in organizing volunteer activities for students. A large group of students spent a Saturday afternoon sorting medical equipment and supplies on behalf of the MedShare organization. These supplies were sent by shipping container to support the people

of Haiti in the aftermath of the earthquake last year. With support from the Pacific Fund, Bioengineering major Roy Lee led a group of students in assembling electrosurgical test units from basic electronic components. The completed units were donated to hospitals in developing countries in Central America and sub-Saharan Africa through the auspices of Engineering World Health.

Students have also looked to the needs of the community for inspiration and ideas for their Senior Project designs. Design teams have worked with *ARC San Joaquin* to develop prototypes of devices that enhance the

quality of life of adults with developmental disabilities. The student group that took first-place in the spring 2010 *Bioengineering Senior Project* competition did so as part of the *Open Prosthetics Project*. Erin Ostby, Kristin Taylor and Jiovanna Vera designed an add-on device which could help train young children to use a new prosthetic arm safely and efficiently.

For more information please contact Dr. J.S. Burmeister at 209.946.2470 or jburmeister@pacific.edu

Civil Engineering

First Master of Science in Engineering Science students graduate

The Civil Engineering department is delighted with our new offices and laboratories in the Chambers Technology Center (CTC). We have four impressive laboratories on the second floor that have greatly enhanced our teaching and research capabilities in structural modeling and simulation, sustainability management, water quality analysis and ecological engineering.

The department welcomes the arrival of Dr. Scott Merry, our new geotechnical engineering faculty member. Dr. Merry is a dedicated teacher with nine years of academic experience at the University of Utah and University of Arizona, and over five years of geotechnical consulting experience with *Geosyntec*

Consultants and Kleinfelder, Inc. Dr. Merry's geotechnical expertise includes the performance of geomembranes used for containing environmental contaminants in modern waste landfills. He comes to Pacific with his wife Laura, and two sons, Jake and Bradley.

We are also proud to announce the graduation of our first Master of Science in Engineering Science (MSES) class this fall. We anticipate that approximately 15 students will complete their MS graduate degree this fall and we have many more students in the pipeline.

Undergraduate enrollment remains strong. This is our second consecutive year of over 40 first-year students. The total Civil Engineering enrollment now stands at approximately 150

students. We are grateful to the many alumni who have contributed to our success. Come and visit our faculty, inquire about the new graduate program or tour our impressive, state-of-the-art laboratories in CTC.

For more information please contact Dr. Gary Litton at 209.946.3070 or glitton@pacific.edu

- Computer Science
- Electrical Engineering, Engineering Physics and Computer Engineering

Computer Science

Research garners funding and international attention

The past year included multiple achievements for the department, including a significant enrollment increase, facility improvements and outstanding research.

Graduate program and undergraduate research garnered both significant funding as well as international attention. One of our undergraduate students, Huaguang Song, was awarded a University of the Pacific undergraduate summer research fellowship to work with Dr. Jinzhu Gao in China. During the summer, one of their papers was accepted by the *First International Conference on Networking and Distributed Computing*. In October, Huaguang

gave a conference presentation in Hangzhou, China. Additionally, Dr. Gao is a member of a group that received an NSF award of \$646,112. The grant will help fund her research and includes funds to support Pacific students. It is a collaborative project that involves the development of computational algorithms and analysis tools for molecular-level understanding of complex atmospheric nucleation processes. One of our graduate students, Shawn Kerns, co-authored a paper with Dr. Dan Cliburn and delivered the paper at a conference in Adelaide, Australia. Facility improvements included a 3-by-3 display wall for data visualization.

It features a custom-designed, very powerful PC with three high-end video cards. Additionally, the department received a grant of two Nvidia systems for high intensity graphics and research into the application of GPU technology.

For more information please contact Dr. Bill Ford at 209.946.3028 or wford@pacific.edu.

Electrical Engineering, Engineering Physics and Computer Engineering

Graduate students enroll in new master's program

Our department welcomed two new faculty members, Dr. Elizabeth Basha and Dr. Jeff Shafer, this fall. Dr. Basha, who has returned to her alma mater after completing a Ph.D at Massachusetts Institute of Technology, is teaching a course on advanced digital design this semester and will teach a graduate class on sensor networks for infrastructure systems in the spring. Dr. Jeff Shafer received his Ph.D from Rice University. He is teaching a computer networking class this semester and will teach a graduate network systems architecture class in the spring. In other faculty news, Dr. Louise Stark received this year's Outstanding Faculty Advisor award at the *Society of Women Engineers National Convention*.

She was honored for her remarkable dedication as a SWE advisor and for her contributions to the engineering profession.

This fall, in collaboration with the Computer Science Department, we initiated a Master of Science in Engineering Science degree concentration in Computer and Electrical Engineering and Computer Science. The program has gotten off to a great start – 25 Electrical and Computer Engineering students are enrolled in the program. In response, we have added many interesting graduate classes to the curriculum in response. In addition to *Sensor Networks and Network Systems Architecture*, we have *Renewable Energy* offered this fall. Additional graduate course offerings in signal

processing, computer vision, and solid state areas are expected in the future. Several graduate students will be writing theses which are sure to generate interesting research projects.

Pacific is a member of an 80-university consortium that received a \$25,000 grant from the Department of Energy to revitalize electric power engineering education by state of the art laboratories. We are improving course offerings in the energy systems area and are acquiring new laboratory equipment for use in conjunction with a power electronics class offering next year.

For more information please contact Dr. Cherian Matthews at 209.946.3075.

School News

- Engineering Management
- Mechanical Engineering

Engineering Management

Alumni report on outreach and grad school activities

The economy is crummy. It is not hard to see, or feel, the economic difficulties faced by our communities, our neighbors, and by those around us. Yet updates from alumni prove they are rising above troubling times. One Engineering Management alumnus is leading an effort to build an orphanage in Ecuador. This past summer an Engineering Management student spent 10 weeks in Namibia interning in an NGO. Another mentors two low-income Sacramento high school students though his own construction company still faces difficult times. And these are just few examples.

In light of a difficult job market, many of our recent graduates of the past two years have chosen graduate school (University of Southern California, Santa Clara University, Pacific and others). These decisions have paid off: a 2008 Engineering Management graduate is getting his JD from Santa Clara University School of Law this coming May; a 2007 Engineering Management graduate got her MFA from the prestigious Academy of Art in San Francisco and is now a product designer for Gama Go; a 2008 Engineering Management student got her MS in Civil Engineering from USC and is now a transportation planner for

AECOM in Southern California. Still more and more Engineering Management students are taking advantage of Pacific's nascent graduate engineering program and staying here for their MS in Engineering Science.

Yes, the economy is still crummy. Yes, it is a difficult job market. But, as exemplified by our students and graduates there is opportunity, energy and, more importantly, hope.

For more information, contact Dr. Abel Fernandez at 209.946.3061 or afernandez@pacific.edu.

Mechanical Engineering

Faculty highlights and student projects

This past fall, the Mechanical Engineering Concentration for the new Master of Science in Engineering Science (MSES) Program began with expanded course options. Courses that teach students about research techniques, business principles and how to bring their engineered ideas to the marketplace enhance the core courses and technical electives like *Combustion, Polymers and Composite Materials, Advanced Computer-Aided Manufacturing, and Advanced Mechatronics*. It's exciting to have this unique master's program running and it is helping us to build the core undergraduate program by providing new students with advanced courses and the opportunity to complete their bachelor's and master's degrees in five years through the Blended MSES Program.

Faculty highlights this year include the following: Professor Ashland Brown received an NSF grant as part of a multi-university project to continue the integration of Finite Element

Analysis into the undergraduate curriculum. Professor Larwood has initiated his research on wind energy and was recently designated as an expert on wind turbine light effects for the European Wind Energy Association's Environmental Impact Information Tool. Professor Jiancheng Liu, instrumental in getting the CIMS laboratory operational, continues with his research in manufacturing and is offering an *Advanced Computer-Aided Machining* course for the MSES Program. Professor Kyle Watson, a combustion expert, will offer an advanced course on the subject for the MSES Program. Professor Brian Weick will teach a *Polymer and Composite Materials* advanced course for the MSES Program and will continue his research on advanced polymer materials for the *Information Storage Industry Consortium*. Professor Chi-Wook Lee continues to collaborate with colleagues in Korea on research projects, and will offer an Advanced Mechatronics

class for the MSES Program. Professor Said Shakerin worked with an Independent Study student last year to develop scientific fluid-flow demonstrations. Professor Ed Pejack has continued his solar energy research during his retirement. Dr. Andy Lutzhas, with a background in thermodynamics, heat transfer, and combustion, has joined the department as an Adjunct Professor teaching dynamics.

Student projects last year included a Bend Resistance Tester for the MTS machine in the Materials Lab, a Portable Drum Riser System, and a prototype Stirling engine for residential use. In addition, a team of sophomore and junior students have been working on a solar studies project to help install a solar energy research station on the roof of the CTC building.

For more information, please contact Dr. Brian Weick at 209.946.3084 or bweick@pacific.edu.

PROGRAM UPDATE

International Engineering Co-Op Program



Vikas Azad (EE, '06) interned in Japan as part of the IECOP Co-Op Program.

As one of Pacific's most distinctive programs, the *International Engineering CO-OP Program (IECP)* provides students the opportunity to use their theory and practical knowledge of engineering and computer science in a global work place and to deepen their understanding of different cultures by living and working abroad. The program currently offers opportunities in Germany and Japan and, by 2011, 46 students will have participated.

Vikas Azad (EE, '06) is a prime example of the results of the program. He interned in Japan at *Daiwabo Polytec Co. LTD.* The

company does research and development, and manufactures synthetic fiber. He learned about Daiwabo's synthetic fiber business, the research and development of products, and how to build professional relationships with young engineers. He returned home with a greater appreciation of the global market. After graduating, Vikas was employed by a Japanese-based company in Michigan. He returned to Pacific in August 2010 to complete his master's degree.

For more information, contact Terri Takahashi at ttakahashi@pacific.edu.

Master of Science in Engineering Science



Field research as part of the Master of Science Civil Environmental Engineering program.

By allowing students to begin graduate course work during their senior year at Pacific, they can complete their undergraduate and master's degrees with concentrations in Civil Engineering (Environmental and Structural), Computer/Electrical Engineering, Computer Science, and Mechanical Engineering in five years.

Some possible research areas for the thesis-based program are composite materials, computational intelligence, computer simulation, data-intensive computing, engineering management, environmental engineering, power electronics, renewable energy, structural engineering, virtual reality, and water quality.

For most students, undergraduate scholarships and other types of financial aid will continue through this fifth year of studies. Students who need additional support may receive up to nine units of tuition per semester plus a monthly stipend through teaching or research assistantships. In addition, *Directed Experiential Learning (DEXL)* are paid graduate internships that can lead to permanent job offers; the Master of Science Industry Fellowship is a graduate internship with professional-level pay, and allows students to remain with the company upon graduation.

For more information, contact Dr. Louise Stark at lstark@pacific.edu.

Ecological Engineering Research Program



Dr. Will Stringfellow

The California Department of Fish and Game has awarded more than \$2.9 million to the Ecological Engineering Research Program to investigate oxygen consuming materials and the impacts of agricultural and urban discharges in the San Joaquin River. The concentration of dissolved oxygen has been periodically low in the river for many years. Low levels of dissolved oxygen impact critical fish habitat and other native organisms. The river has also historically served as an important salmon migration route and low dissolved oxygen is a major impediment to the restoration of this critical salmon run.

Dr. Will Stringfellow, Director of the Ecological Engineering Research Program, will serve as principal investigator for the project. He and his research team will integrate science, field activities, and modeling to understand the root causes of the low dissolved oxygen condition. The project aims to create a water quality model applicable to the dissolved oxygen total maximum daily load (TMDL) for the river between Bear Creek (Lander Avenue) and Disappointment Slough. Ideally, the project will develop one integrated model for management of the dissolved oxygen TMDL for the river. The model will also be used as a catalyst for developing a broader model of water quality and food-web dynamics in the San Joaquin River and South Delta.

For more information, contact Dr. Will Stringfellow at wstringfellow@pacific.edu



Research Brief:

Partnering in NSF-funded Research to Better Understand Complex Atmospheric Nucleation

The National Science Foundation granted a Cyber-Enabled Discovery and Innovation Program award (CDI) to Assistant Professor Jinzhu Gao from Pacific's School of Engineering and Computer Science and three other collaborators from the University of Minnesota for a collaborative research project on the development of computational algorithms and analysis tools for molecular-level understanding of complex atmospheric nucleation processes.

The goals of this project are (a) to develop computational algorithms and analysis tools for efficient investigations of multi-component gas-to-particle nucleation processes, (b) to explain atmospherically relevant nucleation processes and to validate the rate predictions through strategically selected laboratory experiments measuring cluster size and mass distributions at the sub-3 nm scale, and (c) to deploy a freely-available cyber-tool that transforms data to knowledge by enabling large-scale modelers and experimental researchers to harvest predicted atmospheric nucleation rates and learn about mechanisms, by providing a general framework to visualize and analyze the abundance of digital data generated by particle-based simulations for any type of gas-to-particles nucleation process, and by being an aid for teaching about nucleation.

Gao's proposal responsibility is to oversee the computer science aspects of the development of a cyber tool for investigating the multi-component gas-to-particle (atmospheric) nucleation pathways (CT-IANP), which will include a user-friendly interface (GUI), the scalability of the analysis algorithms, and I/O using remote servers.

Launching a Career with

NASA

He hasn't graduated yet, but when he does, Todd Heino (CS, CE and EE; '11) will work in the spacecraft software engineering branch at the National Aeronautics and Space Administration (NASA), thanks to the career launch pad that Pacific's co-op program provided.

Now in the final third of his year-long internship at NASA, Heino has gained valuable experience in robotics and software engineering. During the first segment of the internship – called a “tour” – he worked on the humanoid Robonaut 2, the first robot built to work side-by-side with astronauts on the International Space Station. Heino built and tested the electronics for the robot's hands and forearms.

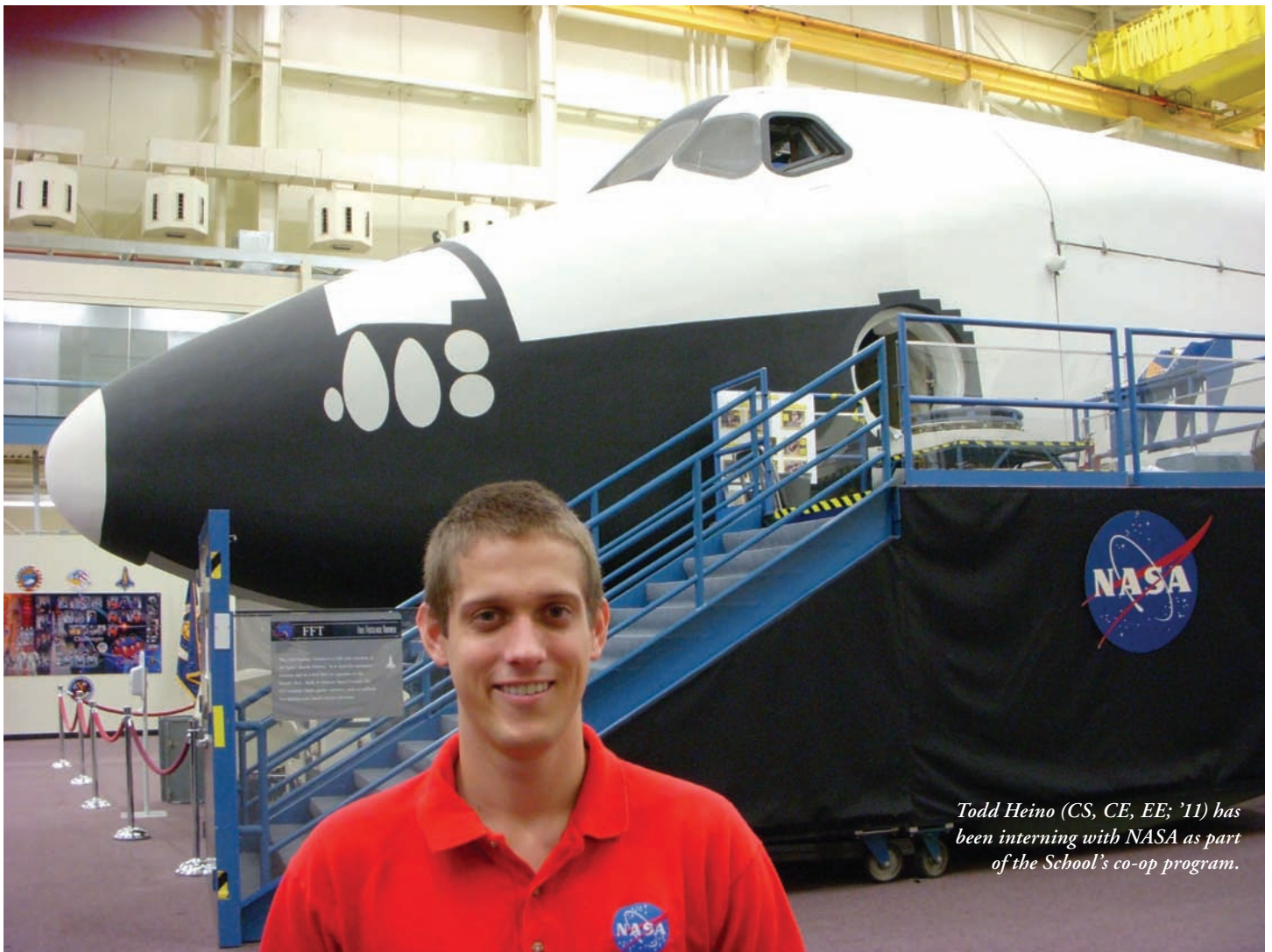
“I tested and characterized motors and sensors, physically soldered and built connectors, printed circuit boards and designed my own printed circuit boards,” he says. He also wrote high level programming code for a graphics user interface for a testbed that the team was developing.

During his second tour, he developed on-board flight displays for a concept hazard detection system named Autonomous Landing and Hazard Avoidance Technology (ALHAT). “ALHAT is an auto-lander for terrestrial bodies which allows astronauts to know what's going on with the landing and be able to manually control or adjust the system if necessary,” he explains. “My work involved developing a two-dimensional graphical display and working


with three-dimensional renderings of statistically generated lunar terrain for use in a virtual reality dome.” He also co-authored an academic paper on the development of the system that was recently accepted for publication in the AIAA Big Sky aerospace conference.

Now in his third tour, Heino is in Houston working at the Johnson Space Center developing flight software for the vertical test bed project. He is creating the data storage system for the craft, which involves writing both flight code and working with hardware for the processor box on the craft.

“The co-op program has been one of the best experiences of my life and I definitely encourage other students to apply to NASA,” he says.



Todd Heino (CS, CE, EE; '11) has been interning with NASA as part of the School's co-op program.



ALUMNI IN ACTION

Heather Worden Makes a Difference for Amputees

MEET HEATHER WORDEN (ME, '08)

Then:

As an undergraduate, Worden engaged in multiple internships and volunteer jobs including research with the Physical Therapy Department, volunteering with Hanger O&P, working as a project engineer for General Mills, and as an R&D engineer for Pathway Medical.

Now:

Prosthetic Resident at Veterans Affairs Medical Center (VAMC) Long Beach

Impact:

Co-researcher of projects utilizing the VA national gait laboratory investigating the biomechanics of gait in bilateral trans-tibial amputations

Q. *How did your experience at Pacific influence where you are today?*

A. The faculty and staff always encouraged me to pursue my interests. One semester I inquired about substituting a required elective with a biomechanics course that would eventually be very helpful to me in my career. Thankfully the request was approved. I am pretty sure that if the professors had not been so open to alternative areas of engineering, I would not be where I am today. The support I received from the faculty and staff at Pacific were invaluable and I am particularly thankful to the mechanical engineering faculty.

Q. *What was the most significant experience you have had during your career? Why this experience?*

A. I would have to say that being a part of a prosthetic team that helped make a leg for a surfer from South Africa. The patient came to the U.S. on holiday and inquired about getting a dedicated surfing leg so he could return to his beloved sport. The previous year the patient had fallen victim to a hit and run accident in South Africa – to him life was really not worth living if he could not return to surfing. A team of prosthetists from Southern California worked together to get the materials, components, time and expertise necessary to tackle the task. Their mission was to make him a limb that was light weight, strong, yet could accomplish the difficult alignment that would allow him to be able to place his leg on the surf board like he used to. Often it is difficult to get people what they need due to challenges associated with insurance. The system often

falls short of providing what a person really needs to get back to living their life as they did prior to their amputation. In this case, the patient was able to become active like he used to before his accident.

Q. *What are your goals for the future and why?*

A. I am very passionate about working with patients and creating a relationship that not only addresses their physical needs, but creates a lifelong memory and a change in the patient's life for the better. I recently accepted a position at Loma Linda University teaching for their entry-level master's program in orthotics and prosthetics as well as working clinically with the prosthetics and orthotics department at the medical center. I am thrilled about all the opportunities I will have to touch the lives of so many locally as well as those abroad through outreach programs. In a nutshell, I hope to be a knowledgeable and effective instructor, giving back what I received at Pacific and being able to change the lives of the students and patients I come in contact with.

Q. *What advice would you give a graduating senior?*

A. I would encourage any graduating senior to explore the world of engineering and all the various avenues that are influenced by engineering. I cannot tell you how blessed I feel to have had the great education and preparation from Pacific. There is power in finding your niche and being passionate about the work you do every day. With a background in engineering the possibilities are endless.

Rear Admiral Paula C. Brown

Named 2011 Distinguished Alumnus



A Navy civil engineer veteran has been named the School's 2011 Distinguished Alumnus. Rear Admiral Paula C. Brown (CE, '82) was a direct commission to the Navy Civil Engineer Corps after graduation and reported to active duty in Washington, D.C. through December 1986. She completed her master's degree at George Washington University in January 1987 and subsequently entered the Navy Reserves in 1988.

She has held numerous reserve component commands and has been recalled to active duty three times; to Port Hueneme, California for 13 months in 1990 for Operation Desert Shield; to Pearl Harbor and on to Iraq for 14 months in 2005 – 2006 as Regimental Commander for the First and Thirtieth Naval Construction Regiments in support of Operation Iraqi Freedom; then again in 2009 to Pearl Harbor for seven months as Deputy Commander for Naval Facilities Engineering Command, Pacific. She is a Seabee Combat Warfare Officer and Fleet Marine Force Officer Qualified and has received numerous awards including the Legion of Merit, Bronze Star, and Navy meritorious Service Medal, and the Navy and Marine Corps Commendation and Achievement Medals; is a member of the Defense Acquisition Professional Community; and is registered as a Professional Civil Engineer in both Oregon and California and as an Environmental Engineer in Oregon.

Rear Admiral Brown recently completed her latest assignment serving as Deputy Chief of Staff for Engineering, Naval Forces Korea, and is currently assigned as Deputy Commander, First Naval Construction Division.

Upon reflection, Admiral Brown attributes a great deal of her success and determination to her relationship with Professor Emeritus Dave Fletcher. "Dave was one of the most influential people in my life. He made me think. He made us all think. He always supported me and encouraged me to persevere when I had doubts," she says. "When I look back on some of my accomplishments they were only possible because Dr. Fletcher helped me cultivate a strong sense of determination." Admiral Brown also acknowledged Professor Emeritus Andres Rodriguez, "I only wish I could thank Dr. Rodriguez in person," commented Brown. Dr. Rodriguez passed away in 2004. She also wished to recognize Mr. Tom Cheney who was also always a supportive and important link back to UOP while away on Co-op. Mr. Cheney passed away in 2009.

2010 Distinguished Alumnus **Ted Wulfman** (ME, '86)

has 19 patents and several pending. In 1998, he and his business partner Tom Clement started Pathway Medical Technologies where they create innovative medical technologies like cardiovascular catheters. Wulfman has been a strong proponent of Pacific's co-op program, hosting nine students at the company. "The best part about hiring co-op students is having the chance to watch them learn and grow during their time with us. Not only do we provide hands-on experience, but our company also benefits from their learning immensely. Pacific's co-op is unique – it lasts longer than most university internships. It gives our company and the student time to really understand what we do and how to do it," stated Wulfman.



Naming Project to Honor Black Alumni



You may not know the name yet – but a group of alumni is aspiring to make the Kemet Conference Room a common reference to the first floor conference facility in the John T. Chambers Technology Center.

Created to honor black alumni of the Pacific School of Engineering and Computer Science, the name “kemet” has significant relationship to African American heritage. It is not only the ancient name for Egypt, meaning “land of the blacks,” but a cultural reference to black land, the rich soil along the Nile and to African people.

The name was chosen as a way to define a sense of place for black alumni on the Pacific campus and to leave a legacy representative of Pacific’s black alumni yesterday, today and tomorrow.

Alumni Donna-Marie Davis Spencer (BSEE, ’86), Carol Smith (BSEE, ’86), Ingrid Batiste Hunt (BSCE, ’03) and Janet Y. Spears (BSEE, ’86), are spearheading the campaign.

For more information or to support the initiative, email projectkemet@pacific.edu or call Amanda Kennedy, Director of External Relations at 209.946.2643.

Kids Have Fun While Their Parents Learn at Night of Science



In October, Pacific’s Society of Hispanic Professional Engineers’ (SHPE) annual Noche de Ciencias (Night of Science) engaged thirty 4–8th grade students, from the Stockton, Lodi and Linden school districts, in learning about science and engineering while having fun. The event is funded by Advancing Hispanic Excellence in Technology Engineering Math and Science (AHETEMS) with the intent to inspire children at a young age with an interest in the science, technology, engineering and math (STEM) fields.

While the students built drag racers and gumball structures and launched balloon

rockets, their parents attended workshops concerning financial aid and college planning. These seminars were presented in both Spanish and English. Pacific’s SHPE did such a good job the parents of Madison Middle School, in Stockton, have invited them to provide the workshops at the school for the parents of all students.

Senior Project Day and Award Banquet Set for April 30

ENGINEERING AND COMPUTER SCIENCE SENIOR PROJECT DAY AND AWARD BANQUET

Saturday, April 30, 2011

Projects on display from 2 – 4 p.m. in the School’s general area

Banquet at the DeRosa University Center Ballroom, Pacific Campus

Reception: 5:00pm – 6:00pm

Dinner and Program: 6:00pm – 8:00pm

The culmination of four years of learning and group collaboration will go on display April 30 at the annual Senior Project Day. All alumni, industry partners and friends of Pacific are encouraged to come see the student projects in the School of Engineering and Computer Science general area from 2 – 4 p.m.

Later that evening, seniors will be honored for their academic achievements and dedication at the annual Senior Award Banquet. The evening will feature a keynote address which, at this writing, will be given by our distinguished alumnus of the year. Departmental award presentations will follow.

Table sponsorships for the banquet are available, and are a great way to support the School and gain exposure to our students,

faculty and guests. Sponsorships include recognition of your company in the running slide show, at your table and from the podium, as well as two complimentary banquet tickets so you may host your table.

For more information, please contact Assistant Dean Gary Martin directly at 209.946.3064 or gmartin@pacific.edu.

Update from Pacific's Society of Women Engineers



SWE Region A president-elect Siddika Demir spoke at the School in February.

The past year was a busy one for Pacific's Society of Women Engineers (SWE).

In February, the chapter hosted 136 collegiate and professional members from California, Nevada, and Hawaii at the annual Region A Conference. The Educating the Engineers of Today, Enhancing the Engineers of Tomorrow conference featured 18 workshops focused on technical, professional, collegiate and personal development, and SWE tracks, as well as a career fair and a reception dinner. Pacific's President Dr. Pamela Eibeck, Dean Ravi Jain and Region A president-elect Siddika Demir addressed the group.

In October, the chapter hosted their annual Expanding Your Horizon's (EYH) event at the University where young women in grades 6 through 12 were introduced to a variety of diverse and challenging careers in science and math. The girls participated in fun skills development workshops and a career fair.

They were introduced to mentors and were encouraged in developing their skills in math and science. More than 150 faculty, staff, alumni and students volunteered as assistants and chaperones during the event, and 27 workshops were conducted by community members, Pacific, Lawrence Livermore National Labs, and Sandia Labs. Professors Luke Lee and Hector Estrada presented a Bridges and Earthquakes workshop; Professor Camilla Saviz presented Engineering the River of Doom: Bridge Engineering Saves the Day; Professor Mike Doherty presented Computer Animation; and Professor Shakerin presented Fountain Design.

Chapter members were part of the 5,000-strong crowd that attended the SWE annual conference in November, in Orlando, Florida, where more than 100 workshops were offered that embodied this year's theme: Launching Innovation. Defining Success. Professional and personal development workshops and

a career fair featuring more than 200 exhibitors were part of the conference. Additionally, Pacific was represented by nine students who took part in the conference's Team Tech competition, where they improved their networking skills, met SWE members from around the country, developed new ideas to grow and improve as a section, and spoke with employers to learn about job opportunities throughout the country. Notably, Dr. Louise Stark, Associate Dean and Graduate Director for the School of Engineering and Computer Science, received the Outstanding Faculty Advisor Award from SWE at the conference. Dr. Stark was selected for her exceptional dedication as a SWE faculty advisor and her contributions to the engineering profession. Dr. Stark works to further the field of engineering and helps her students find experiences in which they can learn and grow.

Recent Faculty Appointments

Dr. James Eason

Dr. Eason received his Ph.D. in Biomedical Engineering from Duke University. His research includes work with cardiac arrhythmias, systems biology, and scientific computing and visualization.

Dr. Henghu Sun

Dr. Sun is the founding Director of the Pacific Resources Research Center (PRRC). He is an internationally recognized scientist hailing from the world-renowned Tsinghu University. Dr. Sun pioneered Sialite technology – a new kind of silica-alumina-based cementitious material, which was developed based on earth science, by simulation of the earth's natural diagenesis process. He is advancing this innovation toward global production and application.

Dr. Anahita Zarei

Dr. Zarei received her Ph.D. in Electrical Engineering from the University of Washington. Her research areas include: random signals and stochastic processes, linear systems, digital signal processing, computational intelligence, and digital design. She recently developed a family of neural-network-based models for prediction and a fuzzy rule-based model for assessment of orthodontic treatment outcome.

Dr. Jinzhu Gao

Dr. Gao received her Ph.D. in Computer and Information Science from The Ohio State University where she was a Presidential Fellow. Dr. Gao is a talented designer and co-developer of innovative computer systems that received international recognition.

Dr. Luke Lee

Dr. Lee received his Ph.D. in Structural Engineering from University of California at San Diego. His current research areas include: infrastructure renewal, service life estimation, electrokinetic, nanoparticle treatment, structural health monitoring, and durability of composite materials.

Dr. Jennifer Ross

Dr. Ross graduated with a Ph.D. in Electrical Engineering from University of California at Berkeley and helped pioneer Pacific's Bioengineering Program. She brings tremendous industry-related research experience to Pacific from Lawrence Berkeley Laboratories.

Dr. Zengdi Cui

Dr. Cui received her Ph.D. from Shandong University and has focused her research on managing global marketing and technology transfer, solid waste usage and the ecosystem, economic development and sustainability, and simulation of natural rock formation. Dr. Cui serves as a founding member and Assistant Director of the Pacific Resources Research Center (PRRC).

Dr. William T. Stringfellow

An accomplished scientist, Dr. Stringfellow holds degrees from North Carolina – Chapel Hill and Virginia Polytechnic Institute. He has split his time over the last four years as Director of the Ecological Engineering Research Program at Pacific and Lawrence Livermore Berkeley National Lab. He has published more than 25 refereed submissions, holds two patents, nearly 40 technical reports, and is a distinguished presenter at national and international conferences. Dr. Stringfellow has also garnered more than \$10 million in grant funding and is an active consultant for 28 companies located world-wide.

Dr. Scott Larwood

A successful scholar, Dr. Larwood obtained degrees from Stanford University and University of California at Davis. Previously, he has taught at Pacific as an adjunct professor and also served as an engineer at several private companies and also the National Renewable Energy Laboratory in Golden Colorado, and the NASA Ames Research Center. His research focus is alternate and renewable energy and he has worked primarily on wind energy related projects. He has ten different publications, most notably the *Aerodynamic Design of the Da Vinci Human-Powered Helicopter*.

Dr. Mary Kay Camarillo

A licensed professional engineer in California and Washington, Dr. Camarillo obtained her graduate degrees from University of California, Davis. She has done water quality research for the Water Environment Research Foundation and WaterReuse Foundation. Her primary research focuses are water reclamation and reuse issues, UV and chlorine disinfection, and microbial risk assessments for water and wastewater. She has been published by *Applied Geochemistry* and presented at several national conferences. Dr. Camarillo has also been honored by the University of California and University of Washington for her scholarship achievements.

Dr. Elizabeth Basha

A 2003 computer engineering graduate and valedictorian of the University of the Pacific School of Engineering, Dr. Basha has returned to her undergraduate alma mater as a professor. She obtained her graduate degrees at the prestigious Massachusetts Institute of Technology in electrical engineering and computer science. Dr. Basha's research focuses on developing distributed prediction algorithms on sensor network platforms for applications that include river flooding, solar currents, and job congestion. While at MIT, she co-founded FloodSafe Honduras, a student organization to assist in developing technology for international development in Honduras. She also won numerous fellowships including one with Xerox Research, and received a National Science Foundation grant to collaborate with Commonwealth Scientific and Industrial Research Organisation (Brisbane, Australia) as a visiting research scientist in 2009.



Dr. James Eason



Dr. Henghu Sun



Dr. Anahita Zarei



Dr. Jinzhu Gao



Dr. Luke Lee



Dr. Jennifer Ross



Dr. Zengdi Cui



Dr. William T.
Stringfellow



Dr. Scott Larwood



Dr. Mary Kay
Camarillo



Dr. Elizabeth Basha



Dr. Scott Merry



Dr. Jeff Shafer

Dr. Scott Merry

Dr. Merry received his Ph.D. in civil engineering from the University of California at Berkeley. He has published in various journals including *Civil Engineering* magazine and ASCE *Journal of Geotechnical and Geoenvironmental Engineering*. He has also participated in national and international conferences. He has nine years of distinguished teaching experience and is a highly successful professional engineer with over seven years of industry experience, including five years serving as a Senior Engineer at the internationally recognized firm of Kleinfelder. Recently, he served as the senior technical lead for the geotechnical data, alternatives analysis, and geotechnical basis of design reports for the Natomas levee improvement project (Sacramento, California). He is a registered professional civil engineer in Arizona and a registered geotechnical engineer in the state of California.

Dr. Jeff Shafer

Dr. Shafer received his Ph.D. from Rice University in electrical and computer engineering. A talented researcher, he focuses on data-intensive computing, datacenter networks, virtualization, and embedded systems. His research has led to his participation in national and international conferences and a patent application for *Method and System for Scalable Ethernet* (application pending). Dr. Shafer served as a graduate student researcher for the US Air Force Research Laboratory (Wright-Patterson Air Force Base, Ohio). While there, he researched real-time video compression algorithms and designed a multimedia processor architecture to execute the algorithms on Field-programmable Gate Array (FPGA) hardware.

Thank You

Dear Alumni, Industry Partners and Friends:

Pacific's John T. Chambers Technology Center would not have been possible without your continual and generous support. Thank you.

In addition to the successful completion of the Technology Center, your continual annual support has enhanced our teaching and learning infrastructure. Your dollars go directly to senior projects, student clubs and conferences, lab updates and faculty development. When you make a gift to the School of Engineering and Computer Science, everyone benefits.

The School's goal is twofold: become a national leader in technological innovation by building strong relationships with alumni, industry and friends; and provide our students with an excellent education. Pacific will not reach this goal without deepening the relationships that we have and reaching out to new friends in order to share with them the experience of a truly excellent University.

We are incredibly grateful for all that you have done for the School of Engineering and Computer Science. Thank you, and I encourage your continued support.

Warm regards,

Amanda Kennedy
Director of External Relations
Tel 209.946.2643
akennedy2@pacific.edu



Calling all Alumni of University of the Pacific School of Engineering and Computer Science

Get involved in our Alumni Calling Students Program. The School is looking for volunteers to call accepted and prospective students in Spring 2011.

Share your experiences. Have you started a company? Moved to a foreign location? Climbed up a corporate ladder? Let us know.



Call or email: Veronica Ensiso at 209.946.7499 or vensiso@pacific.edu

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Mark your calendar for **April 30** – the Engineering and Computer Science Senior Project Day and Award Banquet. Plan to attend and sponsor a banquet table. You'll support the School and gain exposure to our students, faculty and guests.

Sponsorships include recognition of your company in these ways:

- On the event slide show
- At your table
- From the podium

You'll also receive two complimentary banquet tickets so you may host your table.

For more information, please contact:

Assistant Dean Gary Martin at 209.946.3064 or gmartin@pacific.edu