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Riding the "Vomit Comet"

By Andrew Putnam

In April 2002, a team of five engineering students took part in the NASA Reduced Gravity Student Flight Opportunity Program, a research program that allows undergraduate research aboard the NASA KC-135 "Vomit Comet". This is a report from one of the students on their experiences.

The NASA KC-135, known as the "Vomit Comet" is similar to the Boeing 737 with bigger engines. It flies a series of parabolas that allow the occupants to experience various levels of gravity. At the top of the parabola you experience 0g. At the bottom, it's about 2g. The transition time is only about 3 seconds between the two, so you go from being pinned to the floor to floating in 3 seconds. On the other side, you go from floating to pinned to the floor in 3 seconds. You have to make sure your feet are pointed at the ground before the 2g part hits or you'll land hard. You do 30-40 parabolas in a row.

("Comet" continued on page 2)



Seniors Jeff Lavery and Andrew Putnam under varying levels of gravity aboard the "Vomit Comet"

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**Pentagon Remote Delivery Facility
Sustainable Building Design**

Sustainable Design:

Engineering for the Environment

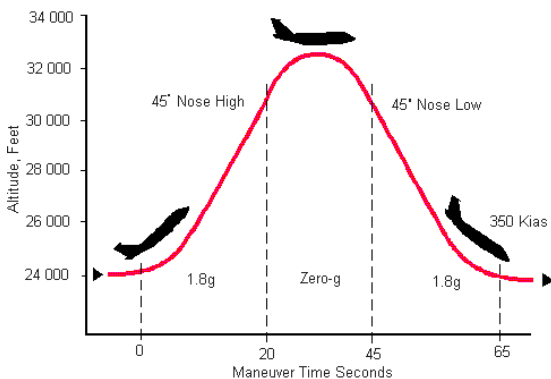
Sustainable design strategies are used to positively influence construction design in terms of its impact on the environment. Strategies include use of sustainable site materials, indigenous vegetation, and water re-use, building control systems for energy efficiency and indoor air quality, and sustainable material selection for reduced environmental impact and building occupant well-being.

("Sustainable Design" continued on page 3)

“Comet” cont’d

The last two parabolas are a Lunar and a Martian, meaning the Moon’s gravity and Mars’ gravity. The Lunar is fun; you get to bounce around and look like the moon-men walking. You move around like you’re in the movie the Matrix.

It’s called the Vomit Comet for a reason. Out of our flights, 3 of 11 students got sick on Thursday’s flight (no USD students), and 5 of 11 got sick on Friday’s flight (including one USD student, Jeff Lavery, who is training to be a Navy Seal). Getting sick has nothing to do with physical condition or previous history of motion sickness. (And really, once you throw up, you feel a lot better and can keep going.)



Range of Gravitational Force over Flight Parabola

The student project investigates Faraday Waves in zero gravity. The team consists of:

- ♦ Andrew Putnam – Senior EE/CS/Physics major – Team Leader
- ♦ Jeffery Lavery – Senior EE major
- ♦ Asher Langton – Senior Math major
- ♦ Oreste (Rusty) Lencioni – Sophomore Engineering major
- ♦ Jonathan Velte-Smith – Sophomore Engineering major

The faculty advisor for the team was Dr. Jeff Wright of Mathematics and Computer Science department.

The project investigated Faraday waves, waves formed at the boundary between two non-mixing fluids, such as oil and water. When you shake the fluids up and down at a constant frequency, the fluids form sinusoidal waves that oscillate vertically at half the frequency that the tank is being oscillated. Faraday waves form at the threshold just before the two fluids mix. By knowing how Faraday waves form, you know the exact minimum amount of force needed to mix two fluids.

The application of Faraday waves really only important in space. On Earth, mixing two fluids is a simple matter of shaking the fluids at amplitudes beyond where Faraday waves form.

When you shake a bottle of Italian salad dressing, you generally shake the bottle much harder than the minimum necessary to mix the oil and vinegar. In space, every action has a reaction that is not damped by gravity. When you shake the salad dressing on Earth, the earth shakes in response to your movement. With the size of the earth and its gravitational pull, this reaction is immeasurably small. In space, however, you only have the vehicle you are in to damp your motion. When someone shakes a bottle of dressing in space, the force is enough to send the person tumbling around the cabin. For this reason, it is best to minimize the force put into shaking so that the reaction and effect on the space shuttle or space station is minimized. (*What this means: in zero gravity, it looks like your Coke would crawl right out of your Big Gulp cup on its own.*)

The idea of the apparatus to test Faraday waves is simple. We needed a large fluid tank that would oscillate vertically at various frequencies. Unfortunately, this is no easy task, especially given NASA’s requirements that the experiment be able to withstand a 9g impact and weigh less than 300 pounds. The 9g-impact requirement was our primary concern, so we made the experiment bulletproof, literally. We used ¼” bulletproof Lexan for the tank and waterproof shielding. We used aluminum alloy for the crank mechanism, and a solid steel frame. Our experiment was really capable of withstanding a 100-g impact. It turned out that we went over our 300-pound weight limit, but they liked us and let us fly anyway. In total it took about 80 hours to build.

The flight was the best part of the week. Jeff and I bounced around the aircraft at every opportunity. I did 12 summersaults in a row without touching the ground. Jeff, who is training to be a Navy Seal, tried push-ups at 2g. (He could only do 6 instead of his usual 100 or so). It was a great experience.



Seniors Jeff Lavery and Andrew Putnam back at 1G

Mechanical Engineering Is Coming to USD

Upon the accreditation of the Industrial & Systems Engineering Program, plans began for a third engineering major. A task force of four faculty (Dr. Ernest Kim, Dr. Kathleen Kramer, Dr. Jose Macedo, and Dr. Rick Olson) worked with Dean Curtis Cook to study which discipline would be the best choice. As part of this process, a graduate course in marketing taught by Dr. John Ronchetto of the USD School of Business Administration included a student project considering the choices and their suitability to USD and local industry. The overwhelming choice from all concerned:

Mechanical Engineering should be the next engineering program at USD.

Dr. Nihad Hussein, Professor Emeritus of Mechanical Engineering and former Associate Dean at San Diego State, has been selected to lead development of this program. In addition to his administrative and leadership skills, his expertise and interests are in the allied fields of heat transfer, fluid mechanics, thermodynamics and energy systems. Dr. Hussein will be a Visiting Professor of Mechanical Engineering and USD's first Mechanical Engineering faculty member.



Dr. Nihad Hussein

The major in mechanical engineering is planned to be offered to students beginning in Fall 2003. Nationally the second largest engineering discipline, Mechanical Engineering (ME) is a broad field of study primarily concerned with the conversion and transmission of energy. It includes study in four areas, Thermal Sciences, Mechanisms, Materials, and System Design.

"Sustainable Design" cont'd

One such "green" project is taking place at the Pentagon in Washington, D.C. under the direction of USD Engineering alum, Michaela Wright.



Michaela Wright, USD Engineering '92

Michaela Wright, USD Engineering '92, is Director of Sustainable Design Services for HDR and will become Vice President just after the new year. HDR is a leading architecture and engineering consulting firm headquartered in Omaha, Nebraska. It has 60 offices worldwide.

Work at the Pentagon began in 1999 with the Remote Delivery Facility (RDF). One of the first projects to use the LEED™ Rating System in the U.S., it is a 250,000-square-foot facility designed to improve the security of the Pentagon. This design-build structure uses the topography and a landscaped roof to integrate the design into the site and create a more energy efficient solution.

Another project – the Pentagon W-edge 2 renovation – is the second phase of an unprecedented undertaking for renovating the world's largest office building. Defense Department employees will enjoy environmentally responsible workspace designed for the occupant's well being. Project highlights for the renovated Pentagon include more than four million square feet of renovated space; a construction waste management program that will ensure the recycling of up to 75 percent of 350 million pounds of construction waste and enough new construction to fill the volumes of two Empire State Buildings; and the creation of flexible spaces that reduce operations and maintenance. For this renovation, the LEED Existing Building Pilot Program was used as a tool for towards integrating and tracking sustainable design solutions.

Electrical Engineering Advisory Board Is Formed

The Electrical Engineering Program is pleased to announce the formation of the Electrical Engineering Advisory Board (EEAB). USD Engineering has for several years had an Engineering Advisory Board (EAB) whose members are senior engineering leaders in a variety of disciplines. The new EEAB was formed to provide the Electrical Engineering Program with input from its constituents -- San Diego industry and EE Program alumni who are senior electrical engineers active in the field. The EEAB has assisted the Electrical Engineering Program by providing input regarding overall program objectives, evaluation of senior elective topics, and support for and evaluation of students' senior project activities. The following are the EEAB's founding members:

Charles N. Pateros (ViaSat, Inc.)

[Dr. Pateros is the Chair of the EEAB and also a member of the EAB.]

Dr. Charles N. Pateros is an Engineering Manager and Member of Technical Staff at ViaSat, Inc, in Carlsbad, CA. At ViaSat, Dr. Pateros has provided technical and program management for commercial and military programs involving digital signal processing and modem development and production. He has developed multi-rate modem algorithms and been issued a patent for an interference rejection algorithm. He is currently providing technical support at the corporate level, directing new concept and intellectual property development.

His Ph.D. (1993, Rensselaer Polytechnic Institute, Troy, NY) involved the invention and development of a multiple access digital receiver that incorporates the multi-path combiner of a RAKE receiver with an interference rejecting filter into one adaptive correlator structure; he won the Charles Close Doctoral Prize in 1993 for this work.

At ViaSat, Dr. Pateros has provided both technical and program management for commercial and military programs involving digital signal processing and modem development and production. He has developed multi-rate modem algorithms and has been issued a patent for an interference rejection algorithm.

Scott Denton (Applied Micro Circuit Corporation)

Scott Denton is a senior design engineering at Applied Micro Circuit Corporation (AMCC) where he has been project and design team leader on several projects including broadband transceivers, receivers, and

transmitters. He specializes in architectural specifications (EAS) creation, chip design and verification. He is project lead for "YUKON", the first single chip OC-48c SONET/SDH Framer/ Mapper with integrated clock recovery and clock synthesis. He has three patents currently in preparation. He received his BS/BA in Electrical Engineering from USD in 1997.

Terry Hache (Copper Mountain)

Terry Hache received her Bachelors degree from University of California, San Diego in Math/Computer Science. She has 15 years of real-time embedded software experience in DSP and Communications. She is currently working as a software engineer for Copper Mountain and has experience with several other companies including Ensemble Communications.

Keith Pflieger (TrellisWare Technologies)

Keith Pflieger is the Lead Hardware/Systems Engineer for TrellisWare Technologies where he performs system simulation, and does algorithm development and digital design. From 1994 to 2000, he was a lead hardware engineer at ViaSat, Inc., working on projects involving 2G-3G Cellular and other wireless communication waveforms, digital modem design, and advanced signal processing algorithms for data demodulation, and channel estimation and equalization. Mr. Pflieger has also worked at the Jet Propulsion Laboratory in Pasadena, CA, NavSys Corporation in Colorado Springs, CO, and LTX Corporation in Westwood, MA. He has an MSEE and a BSEE from Worcester Polytechnic Institute. He is a member of Eta Kappa Nu and Tau Beta Pi.

Cathleen Quick (Sun Microsystems)

Cathleen Quick is a staff engineer and project leader at Sun Microsystems doing design and development work on high-end enterprise computer servers. Prior to working at Sun Microsystems, she was a staff engineer at Hughes Network Systems and worked on design and development of digital telephony and satellite communications equipment. Ms. Quick received her BSEE from San Diego State University in 1990 and became a California state licensed PE in 1993. She is a member of IEEE, Eta Kappa Nu, and Tau Beta Pi.

Donald L. Reed (SAIC)

Mr. Donald L. Reed is currently employed by Science Applications International Corporation (SAIC), Navigation, Systems, and Knowledge Engineering Division, as Director of Navigation and Communications Research responsible for research, development, test and evaluation, and exploitation of Navigation and Communications Concepts. Mr. Reed is responsible for a team of engineers and programmers developing communications systems, Global Navigation Signal Simulators, GPS signal/satellite verification assets and next generation GPS receivers.

EEAB cont'd

For the last 4 year he has been supporting the Navy and GPS Joint Program Office's GPS Modernization programs, as well as the develop-ment of Direct Digital Synthesizers and Digital Receivers utilizing FPGA technologies. Mr. Reed received his BS in Computer Engineering from Wright State University in 1985. Before joining, SAIC he was employed by CSC as a Senior Engineer, where he ran an Air Force communications, navigation, and identifications research laboratory. At CSC he was instrumental in the development of the GPS Antenna WaveFront Simulator (AWFS) and Avionics Wind Tunnel at Wright-Patterson AFB.

Jarvis Tou (Silicon Wave)

[Mr. Tou is also a member of the EAB.]

Jarvis Tou is Vice President, Marketing & Product Management, for Silicon Wave, the San Diego

company responsible for the Bluetooth Technology applications that are revolutionizing personal-area and local-area-networks. He holds a BSEE from the University of Michigan, MSEE from Purdue University, an MBA from Arizona State University, and has also participated in the Executive Development Program at the Wharton School of the University of Pennsylvania. Prior to joining Silicon Wave, Jarvis co-founded the Wireless Products Operation for Intel Corporation where as managing director, he was responsible for developing and delivering branded personal wireless products for end-users based on Bluetooth technologies. Previously at Motorola, Mr. Tou was a project leader and VLSI design engineer for silicon compiler and memory design with the ASIC Division, and also held positions in the BiCMOS technology development and CMOS manufacturing groups.

Projects in Computer Vision

Dr. Jose Macedo participated in the 2001NASA Summer Faculty Fellow program at the Jet Propulsion Laboratory (JPL) in Pasadena, CA. He conducted research in the area of computer vision in collaboration with NASA's scientists. The two research projects he participated in were: statistical pattern recognition of laser radar on vegetated terrain and development of algorithms for robust visual position estimation of Mars rovers using omni-directional and stereo vision.

In January 2002, Dr Macedo organized and conducted a two-day workshop on LabView and computer vision



Dr. Jose Macedo with the Athena Rover at the Mars Yard at JPL-NASA in Pasadena, CA

for industrial inspection for engineers from the San Diego area. In April 2002, Dr. Macedo gave an invited presentation to the San Diego-Tijuana LabView User's Group hosted at Sony in Tijuana, where he presented results of his work on computer vision and image processing. Dr. Macedo has been invited to give a presentation on methodology and applications of computer vision and image processing at the Robotics and Automation Conference at CETYS University in Tijuana this month.

Meet John Crow

Our newest staff member, John W. Crow, is an Engineering Technician who has expertise in mechanical and manufacturing processes. John has certificate qualifications in CAD/ CAM programming. John completed several years at Rohr Aerospace (now B.F. Goodrich) in a tool and die apprenticeship.



John Crow, Engineering Technician

John also has a Masters in Oriental Medicine from Pacific College of Oriental Medicine and is a California State Board licensed acupuncturist. He has studied martial arts including Pedoy Escrima, Wing Chun, and Hsing I Chuan for the past fifteen years.

John, his wife Jackie, and their children, live in Spring Valley. John has coached his son's baseball teams for the past eight years. John's son, Elijah, is a member of the Helix High School Junior Varsity Baseball Team. John's daughter, Alyssa, competes in archery at the ARCO Olympic Training Center.

Class of 2002 Is Biggest Yet!

The USD Engineering class of 2002 is expected to include 22 graduates – 17 Electrical Engineers and 5 Industrial & Systems Engineers. Of the 22 graduates, 3 have managed to graduate in four years rather than the nominal 4½ years it is expected to take to earn a BS/BA in Engineering. The graduates' job offers and graduate school plans reflect a shift in the local economy that has de-emphasized the telecommunications sector and emphasized defense and government initiatives. These graduates have reported their future plans or current positions:

- ♦ Travis Amrine (EE) plans to be a nuclear submarine officer in the Navy
- ♦ Brandon Decker (EE) has been accepted to Santa Clara University to study towards an MSEE. His recent orders have redirected him to the Navy's flight school.
- ♦ John Duca (EE) is working at SAIC.
- ♦ Emmanuel Dulay (EE) is applying to be an officer in the Air Force.
- ♦ Lisa Duvall has received an offer from SPAWAR
- ♦ John Kammerer (ISE) is currently working at SONY and has received an offer to be an engineer at SPAWAR
- ♦ Tony Mireles (EE) is working as a Signal/Image Processing HW/SW Engineer at PAR Government Systems Corporation.
- ♦ Eric Namek (EE) has been accepted to San Jose State University's MBA program.
- ♦ Ian Nauhaus (EE) plans to study towards a PhD in Electrical Engineering. He has been accepted into doctoral programs at University of Arizona and University of Pittsburgh.
- ♦ Estrellina Pacis (EE) is an engineering manager at SPAWAR.
- ♦ Christopher Smith (EE) has received an offer from TRW
- ♦ Michael Spencer (EE) is scheduled to begin work at SPAWAR as an engineer on May 20.
- ♦ Jaclyn Sonico (ISE) is an Associate Procurement Specialist Pacific Gas & Electric.
- ♦ Jacalyn Thomas (EE) has received an offer from NASSCO.

USD Engineering Joins the San Diego Science Alliance

During National Engineers Week this year, Engineering faculty members Dr. Ernest Kim, Dr. Kathleen Kramer, Dr. Susan Lord, Dr. Rick Olson, and the on-sabbatical Dr. Thomas Schubert participated as exhibitors in the San Diego Science Alliance (SDSA) High Tech Fair. The San Diego Science Alliance is a consortium of businesses and local institutions of research and higher education who are committed to fostering interest and ability in engineering and science in San Diego youth.

More than 2,000 students, all anxious for a glimpse into what their futures might hold, visited 52 exhibits and participated in hands-on demonstrations during the Tech Fair on February 20, 2002, in Crosby Hall at the Del Mar Fairgrounds.

The purpose of the Tech Fair is to get students excited about mathematics, science, and technology. The event is sponsored by the San Diego Science Alliance with the support of the San Diego Congressional Delegation. Both Congressman Randy "Duke" Cunningham and Congresswoman Susan Davis attended this year. "For a lot of young men and women in high school and junior high school, technology is something that is kind of spooky. This gives them a hands-on feel. Quite often we take a little flame and turn it into an afterburner with these kids." Cunningham said.¹

USD Engineering's exhibit included hands-on demonstrations of optical communications and ergonomics.



Dr. Thomas F. Schubert working with high school students at the SDSA High Tech Fair

¹ From the SDSA March 2002 Newsletter

Spring Open House Features Latest Student Projects

On May 9, the Spring Open House featured the latest EE senior design projects, ISE quality improvement and manufacturing projects, and freshmen NIFTY projects. The next Open House will be Friday, December 13.



The Internet Shopper Team—Seniors M. Glazebrook, D. Brennan, D. Trushiem, and A. Putnam—presented their project, a device to use JAVA and barcodes to compare prices



D. Guzman, N. Hoffman, and A. Milam show off their junior digital project, a combination lock & alarm



Seniors S. Feyka, A. Shelley, and R. Munera presented their autonomous car design



Frosh B. Chicotka with his team's NIFTY car wash



J. Grudovich and C. Robinson with their NIFTY team's candy dispenser

Faculty Happenings

Organizational matters: Dr. Kathleen Kramer, Associate Professor of Electrical Engineering has been named Chair of Electrical Engineering. Dr. Rick Olson, Associate Professor of Industrial & Systems Engineering, has been named Chair of Industrial & Systems Engineering. Dr. Thomas F. Schubert, Jr. will continue as the Director of Engineering.

Dr. Bradley Chase, Assistant Professor of Industrial & Systems Engineering, and his wife, Dr. Holly Irwin-Chase welcomed the birth of the second child, Rachel Elizabeth Chase, on June 8, 2001.

Dr. Ernest M. Kim, will be taking a leave of absence for the 2002-03 academic year to work as an electrical engineer for a San Diego company. We will look forward to his return.

Dr. Michael S. Morse, Associate Professor of Electrical Engineering, satisfied longtime dream in 2001. He sailed from San Diego, to Hawaii, and then onto Alaska.

Dr. Susan Lord, Associate Professor of Electrical Engineering, and her husband, Mr. Victor Chang welcomed their second child, a baby girl named Kyrielle Wen-su Lord, at 10:44 pm on May 3. [True to form, Dr. Lord was observed helping students in her electronics lab at 6 pm on that very evening.]



Dr. Susan Lord with Marissa Rose and Kyrielle

Alumni News

Class of 1992

Michael Duenas is reported to be living in Agana, Guam.

Lt. Glen Hickok is still with the Navy and is currently living in Alexandria, VA.

Class of 1993

Robert Boerner is President of GECKO Financial Services and lives in the Pacific Beach area with his wife, Laura.

Tarek Derbas is a Senior Product Design Engineer for High End Server Engineering at Sun Microsystems Inc. in Palo Alto, CA.

Class of 1994

Daniel Ettlich was married on March 9th 2001 to the lovely Jenna Fischer (now Ettlich). They met on the University of Arizona (UofA) triathlon team. Jenna now has her MA in Communications from the

University of Arizona. While Daniel was at UofA assigned as an NROTC instructor, he completed his MBA. They are no longer doing triathlons due to lack of time, but in the four years Dan competed, he finished over 50 races, including the New Zealand Ironman, the Tucson Marathon, and others. In August, he and Jenna moved to Monterey so that Daniel could attend the Naval Postgraduate School. He is studying towards an MSEE and, having benefited from his dual-degree in EE, plans to apply for a dual degree in MSEE and MSCS. Daniel also plans to apply for the single opening they have each year for a PhD in EE.

Don Jenkins will be graduating with an MS in Operations Research in June from the Naval Postgraduate School in Monterey, CA. He is currently finishing up his thesis on data-mining to find fraud in Dept of Defense payments. He then expects to be moving back east for Submarine Officer Department Head School in Connecticut. Don is still running and will be in the Big Sur International Marathon this month. He and wife, Lorrie, spend a lot

of time taking daughter, Alex to and from her dance company activities (Ballet, Tap and Irish) and just being parents of an eight year old. He reports, "Couldn't be happier!!!"

Dominic Pimentel and his wife, Arlene, are the proud parents of Troy Edward Pimentel, born October 9, 2001. Dom has been working for a startup called Monterey Design Systems since February of last year.



Dominic Pimentel ('94) with his family

Lisa Smith Corcoran and her husband James welcomed their second child, Justin James Corcoran, into the world on July 14, 2001.



Justin and Lexi Corcoran, courtesy of Lisa Smith Corcoran ('94)

Class of 1995

Jorge Geremia was recently promoted to Senior Design Engineer at Applied Micro Circuits Corporation.

Barbara Hammack and her husband, Fred, welcomed their second child into their family, a daughter, Jacqueline Michelle Hammack. She was born on January 17, 2002, weighing in at 6 lb. 15 oz, and 20 inches long. Their son, Joseph, just turned two years old on April 1, 2002 so they say, "we have our hands full with two small children, but we are very happy." Barbara has taken an indefinite leave of absence from her position as President and Engineer of HAVS, Inc. (Hammack Audio Video Solutions) to stay home with the children. She still occasionally works from home as time permits but family is a higher priority right now, she reports.

Class of 1996

Daniel Leuthner left the Marines in January 2002 and began work at Anheuser Busch in Fairfield, CA. He is a brewing group manager, managing the personnel that brew Budweiser. His duties are in the area production management. He has found his new work to be quite interesting – "it gets really exciting when things break down." He does a great deal of process analysis trying to correct minor problems. He will take control of a shift this summer.

Class of 1997

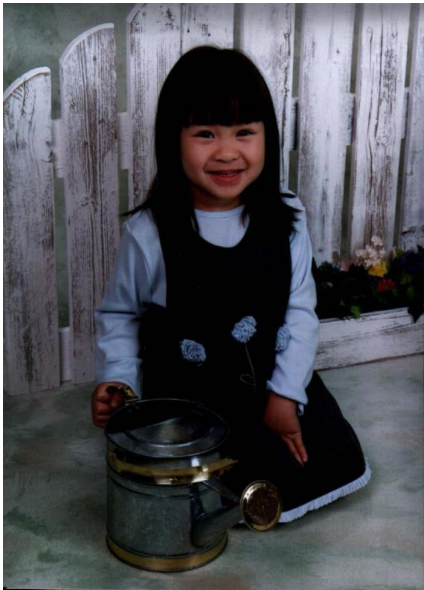
Lt. Tom Mack is currently stationed onboard the USS SACRAMENTO (AOE 1) in Bremerton, WA. Tom came back from a 6- month cruise in support of Operation Enduring Freedom in January. Tom's wife, Kary and son, Joey, are currently living in San Diego. They recently bought a new home in South San Diego. Tom will be transferring to shore duty in San Diego in January.

Christine Bridewell Keefe and her husband, Greg, are the proud parents of Alese Mackenzie Keefe, born October 11, 2001.



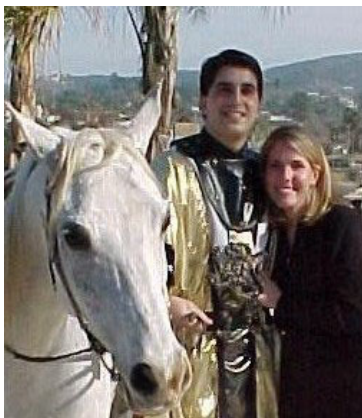
Christine Bridewell Keefe ('97) and her new daughter, Alese

Joy Sotic was promoted to Senior Software Engineer at Cubic, Inc working on embedded communications. She reports, "I'm really enjoying my job." She and her husband, Dennis Balagtas, recently bought a home in the San Diego area and are experiencing the joys and pains of home ownership. Their daughter, Melissa, is about to turn four.

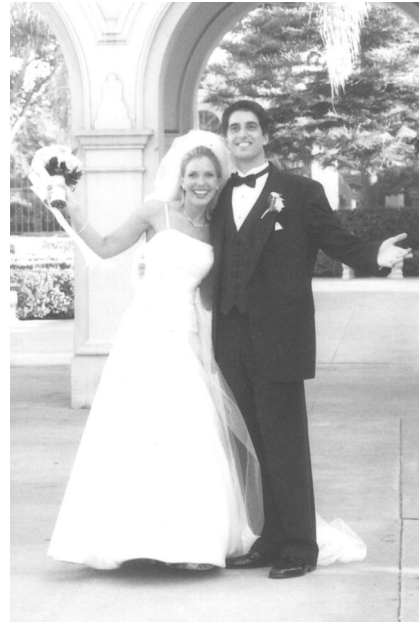


**Future USD Alum, Melissa Balagtas
daughter of Mary Joy Sotic ('97)**

Maureen Feiner (Colucci) and Paul Colucci were married at USD on September 15th, 2001. In the spring of 2000, Maureen returned from working at Quantum Corporation in the bay area and Paul returned from working at Goldman Sachs in New York City. Paul proposed to Maureen in San Diego on December 23rd, 2000 as a knight in shining armor on a beautiful white stallion. Maureen is a Business Development Program Manager for Cisco Systems in Carmel Valley developing broadband solution offerings with Cisco's Global/National partners. Paul owns a real estate investment firm in San Diego.



**Maureen Feiner Colucci ('97)
with white horse and knight**



**Maureen Feiner Colucci ('97) with her husband
Paul Colucci on a Septmeber 15, 2001 visit to
their alma mater**

Class of 1999

Michael Dunn is a Sales Engineer at Agilent Technologies in San Diego.

Forest Stephens is working as a Hardware Engineer at ViaSat, Inc. in Carlsbad. He and his wife, Sherry Klomp Stephens, another USD graduate, were married last summer and recently purchased a house in Poway. He is also enrolled in the Masters of Engineering program at UCSD. They are expecting their first child this year.

Zaldy Valenzuela, when last heard from, was stationed in San Diego onboard the USS Bonhomme Richard. He has had a chance to see places like Singapore, Thailand, Hong Kong, and various hot spots in the Middle East. He also reports that he is engaged to be married.

Class of 2000

Claudio Castanheira has been working at Telena Communications as a hardware engineer for more than a year now. Telena is a startup company that designs switches and routers for optical networks. It is a very small company, so his responsibilities are usually multiplexed between the design, testing, documentation, and whatever else comes his way. He reports, "I like it a lot and they treat me very well here, although we're always on our toes to keep funding coming in (but that's part of the fun too)."

("Alumni News" continued on page 11)

Daniel Empeno married his high school sweetheart, Jessica Hargrove, at USD on March 9, 2002. Jessica recently received her masters degree in social work from SDSU. Daniel is an engineering consultant with The Anteon Corporation, and is currently consulting at SPAWAR.



Daniel Empeno ('00) with his new wife, Jessica

Emiliano Gallego is an industrial engineer with Pagasa, a family company in Tijuana, Mexico founded in 1958 that produces pasta and cookies. Currently, the Pagasa work force consists of more than 300 workers, producing over 30 different shapes of pasta and 20 varieties of cookies. Products are sold throughout the Baja California Peninsula and adjacent states both of Mexico and the U.S.A.

Thomas Guzman is the First Lt. on the USS Sides FFG14 (Fast Frigate -- small, heavily armed ship). He is currently getting his surface warfare qualification. He is scheduled to be deployed to the South China sea for operations. When last heard from, he was guarding our coast. In September, he will be attending Nuclear Power School in South Carolina, to act as a nuclear engineer about aircraft carriers. His wife, Mina Guzman, is an assistant in the Office of the Registrar at USD and is currently finishing a Masters in History here. They and their dog, Bailey, a gray toy poodle, live near the university.

Grant Markewitz is reported to be working at Intel making test wafers for a chip fabrication facility in Israel.

Dureid Rabban is working as an engineer with Clean Air Partners, a company developing technology focused on using natural gas as the primary fuel for diesel engines. He hopes to enroll in graduate school in the coming year.

Soren Solari is a Senior Test Engineer at Tality Corporation (formerly Cadence). He will be attending graduate school this Fall at UCSD pursuing a masters degree in intelligence systems and control.

Ricardo Valerdi is a System Engineer at Motorola in the Public Safety Communications group. He recently led an effort that resulted in a contract award of \$70M for a communication system for the Los Angeles Metropolitan Transit Authority. Ricardo will be graduating in May with an MS from the System Architecting and Engineering program at the University of Southern California (USC). He will be pursuing a PhD in Industrial and Systems Engineering there starting this fall. He has also accepted a position as a Research Associate at the Center for Software Engineering at USC.

Class of 2001

Amanda Bishop is working on FPGA design on the Comanche helicopter's CNI (Comm/Nav/Id) system for TRW Radio Systems. She will be moving over to the Joint Strike Fighter project doing the same kind of work in July.

Christian Geist is working at Sony in Rancho Bernardo. His area assembles laptops and desktops. One of the recent projects he's worked on is to improve the procedures used to build the "made-to-order" laptops.

Mike Hawkins is working at Motorola in the Broadband Communications Sector. In January, he took a surf trip to Costa Rica, and then went to Kazakhstan for two months to install a satellite television network. He lives in Pacific Beach and spends his free time surfing.

Sally Mahdavi is an engineer at SAIC in the Space, Air and Information Group where she divides her time between technical projects a business management. She just completed a Systems Engineering course and earned 24 units toward PMI (Program Management Institute) Certification. She was recently nominated by the intern special events committee to

Alumni news cont'd

be this year's speaker at the SAIC Intern Dinner on May 8 at the La Jolla Marriott.

Chris Miller is working in Roseville, CA for the Storage Division of Hewlett-Packard (HP). He reports that the merger with Compaq is making for interesting events there. The lab he works in develops an enterprise storage array called the XP used by companies ranging from Amazon.com to the New York Stock Exchange. Basically, it is a big box that holds 1024 disk drives. His team works on Linux I/O connectivity by altering the Linux kernel and developing patches for Fiber Channel drivers. The work is interesting with challenging deadlines. Chris also began his studies towards a Masters degree in Computer Engineering from Columbia University earlier this year. Getting a degree from the NY university while working in northern California is made possible by a distance learning program that allows him to take the classes in HP conference rooms.

Alex Rosas had a job in purchasing/procurement for Colgate in NYC. He was there on 9/11. He has since left Colgate and is working in a similar job for Raytheon in San Diego.

Please update your contact information via email to usdengr@sandiego.edu or by calling Bernadette Maldonado at 619-260-4627.



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