



Two New Professors to Join Department

Two new assistant professors will join the SSU Department of Physics and Astronomy in the fall of 2007. Both will be seeking students to join them in their research programs.

Dr. Jeremy Qualls brings with him an extensive background in material development and a passion for teaching. He received his Ph.D. in physics from Florida State University while working at the National High Magnetic Field Laboratory in Tallahassee, Florida in 1999. Since then he has taught at Wake Forest University and the University of Texas-Pan American. He has established himself as an experimental physicist in the field of solid state physics working in the low temperature and high magnetic field regime.



With the transition to SSU, Dr. Qualls will bring with him many components of his current research endeavors, including synthesis and characterization of novel electronic structures such as charge transfer salts and molecular conductors, as well as his work on active photonic systems which was recently funded by the National Science Foundation. The research is attractive both in the scope of the science and in the potential for commercial application. He will establish a new research lab at SSU to be used by students and collaborators. The experiences undergraduates receive in his research lab often set them apart from others and dramatically improve their chances at entering strong graduate programs or a technical career. Over the last 5 years a number of students from Dr. Qualls' lab have been quite successful, going on to graduate programs at Cornell University, Texas A&M, and the University of New Mexico.

Interested students and others from the community are welcomed to contact Dr. Qualls and learn more about his work.

Dr. Scott Severson joins our department from the University of California Santa Cruz, where he was an Associate Research Astronomer. He received his Ph.D. in Astronomy and Astrophysics from The University of Chicago and his B.S. from the University of Wisconsin. His research has focused on experimental astrophysics, and he has built and used world-class telescopes and instruments, such as the Lick Observatory Adaptive Optics system, and the SPIREX near-infrared telescope located at the South Pole.



Dr. Severson will lead the effort to construct a state-of-the-art remote controlled telescope at the Galbreath Wildlands Preserve using environmentally friendly technology. He works in the cross-disciplinary field of adaptive optics and will operate a laboratory on-site at SSU. He looks forward to working with Sonoma State University students on these activities and in astronomical observing programs.

Scott Severson brings to Sonoma State University his passion to teach. His teaching interests include: innovative teaching practices, such as project- and inquiry-based learning; mentoring the next generation of scientists and engineers; and recruiting, educating and retaining a diverse population of scientists. Scott has taught astronomy at the COSMOS summer school program at UCSC, mentored undergraduate and graduate students, and will be chief coordinator for an advanced summer school in adaptive optics in summer 2007. He is excited to teach at Sonoma State University and serve the Sonoma County community.



Darwin Hall Move is Over!

By Professor Lynn Cominsky, Chair

It was a tough three weeks in August, 2006, but once the building was approved for occupancy, we moved in as fast as we could, unpacking just what we needed to get ready for classes that started on August 22. And for the first time in a long time, we had new equipment for our lower division labs, and of course all of that had to be set up and connected. Thanks to Steve Anderson and Dr. Hongtao Shi for their heroic efforts in getting everything in order to get classes and laboratories started on time.



We now have two beautiful, lower-division labs, located conveniently on either side of the stockroom. Each lab is equipped with networked iMacs, oscilloscopes, function generators and PASCO interfaces. Ample storage within each lab abounds, allowing us to keep most of the equipment nearby.



Upper division laboratories include a new Nuclear Lab facility with special storage for radioactive materials, a gowning room, and a materials prep lab with viewing window; our materials analysis lab, which has a chemical vapor deposition system (currently being refurbished); an optics lab (currently waiting for new faculty member Dr. Scott Severson and the return of our equipment temporarily housed in Salazar), and another laboratory with plenty of space for new faculty member Dr. Jeremy Qualls to set up his 17-Tesla magnet and associated analysis facilities. And of course, an astronomy imaging lab, filled with various types of computers for analyzing data from the SSU Observatory, and the NASA-sponsored remotely operated telescope at Pepperwood.



We are very proud of our new facilities and invite anyone who is in the area to come by for a tour!



Big Changes in the NASA Education and Public Outreach Group

By Prof. Lynn Cominsky, Chair and E/PO Group Director

This past year has seen many changes in the NASA Education and Public Outreach group. Just when we thought all the moving was over, and the Department was settling into Darwin, came extremely welcome news that the E/PO group would also be moving. At the end of the fall semester, the group moved to spacious new quarters on the third floor of the Schulz Information Center. Complete with private offices, a large stockroom and even a kitchen/meeting room, we spent most of the month of January moving in and reclaiming all of our educational materials from locations scattered around campus.

And then, after we got unpacked and began to enjoy our new space, many of the long-time personnel announced their departures from their comfortable new private offices. In February, Instructional Technology expert Tim Graves, '01, took a position as a business analyst at Pacific Pulmonary Services in Novato. Graves leaves behind a major legacy with the group, having been responsible for building the GLAST Optical Robotic Telescope (GORT), which the group remotely operates at the Pepperwood Preserve. Taking over Graves' responsibilities for the telescope is Dr. Kevin McLin, who has been a lecturer in the Physics and Astronomy Department for the past several years. McLin and new part-time systems administrator David McCall, seem to have gotten to the bottom of the problems with the remote network and we are looking forward to a great summer of observations. Prof. Gordon Spear has also been using (and debugging) GORT via observations with new Global Telescope Network partners at San Francisco State University and SSU students Katy Wyman, David Cranford, Chris Johnson and Ryan McDaniel, '06.

Next to leave was Logan Hill, '06, who is now working as a purchaser at Voodoo Lab in Santa Rosa. His humorous writings will be missed! In April, Dr. Phil Plait, the NASA Education Resource Director (NERD) got a book contract, quit his job and sold

his house all in a few weeks. He is moving to Boulder, Colorado, and writing "Death from the Skies" which should be published by Viking Press in the Spring of 2008. It will be hard to miss Phil on talk shows and the radio when it is time to promote his new work. And then, sticking to her "five-year" plan to become a wealthy businesswoman, E/PO group Program Manager Sarah Silva, '02, is finishing out her final month in the group, polishing up a few educationally-oriented projects and organizing things so that those of us who remain can survive without her. It will be tough, as there will be that much more work to go around for the rest of us, and I will have to figure out what to do without Sarah reminding me. We are looking forward to hiring two new people, and to the launch of the Gamma-ray Large Area Space Telescope (GLAST) at the end of 2007. GLAST will join Swift (launched in 2004) in orbit, where together they will open up an even wider window on the gamma-ray sky.

You can follow the progress of GLAST and Swift on MySpace pages:

<http://myspace.com/glast>

<http://myspace.com/swiftsatellite>

Both satellites also have "logo" items such as hats, tee-shirts, and even postage stamps for sale through CafePress:

<http://cafepress.com/glast>

<http://cafepress.com/swiftsatellite>



<http://epo.sonoma.edu>



The Galbreath Observatory Project - *A large telescope for SSU students and faculty*

By Prof. Gordon Spear, Observatory Director

The project to establish a large 1-meter class telescope in the Galbreath Wildlands Preserve (GWP) is proceeding. The Galbreath family donated GWP to the university in 2004, and the project to establish a major astronomical observatory within the preserve began in earnest in 2006 with a survey of the preserve for possible observatory sites. GWP promises to be an ideal location for an observatory since it is within 2 hours of the campus, it has some of the darkest skies in Northern California, and it appears to be fundamentally fog-free. A possible observatory site has been identified in the Western Highlands of the preserve in an area, which we are now calling Observatory Ridge. Site validation has begun using instrumentation, which includes a weather station, a cloud sensor, and a seeing monitor. An area of ground near the crest of Observatory Ridge has been leveled and a platform has been constructed to mount the instrumentation. The system is solar powered and under the control of a computer which also logs the data. The system will begin collecting and recording data every 30 minutes 24 hours a day by the end of the spring semester. Ryan McDaniel, '06, is assisting with the calibration and interpretation of the seeing data.

This observatory facility will be designed to be totally remotely accessible and controllable over the internet. This will be modeled after GORT, the robotic telescope at the Pepperwood Preserve developed and managed by Dr. Lynn Cominsky's NASA E/PO group. The Galbreath Observatory will be available for instructional and research uses by SSU students and faculty and by interested K-12 teachers and their students.



“Site validation has begun using instrumentation, which includes a weather station, a cloud sensor, and a seeing monitor.”

Our newly hired astronomer, Dr. Scott Severson, has extensive experience with developing major astronomical research facilities, and he will be spending part of his time on the Galbreath Observatory project. So what else is needed to insure the success of this project? Why funding, of course! We are hoping to partner with several other public and private universities who have interest in a major research observatory. We will also be seeking grant funding, and donations from individuals and organizations interested in supporting astronomy, supporting educational opportunities for our students, and supporting Sonoma State University. Stay in touch and watch the new observatory develop.

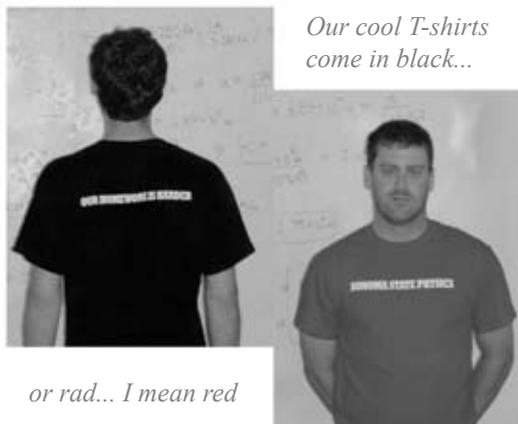


Get to Know Your Society of Physics Students

Pat Brown, SPS President

We are physics majors. Our homework is harder. Harder than that of ANY other major offered...anywhere. If you don't think so, I invite you to take P475, physics of semiconductors next time it comes around. It takes a very resourceful and moderately intelligent student to survive analytical mechanics. Quantum. 'Nuff said. In light of your elite intellectual status, I would like to tell you all—both returning and incoming physics majors—about the Society of Physics Students (SPS). The SPS is a group of your peers sharing your interest in physics who meet regularly to talk about classes and department news, plan events and simply hang out with like minds. We generally meet one Thursday a month in the basement of Darwin Hall during the noon hour.

In addition to keeping up to date with department events and providing a forum for student feedback for the department and faculty, we meet in order to plan field trips and exciting fundraising projects, to talk with guest speakers and to decide what to do with our club money. This year we decided to spend our funds on new t-shirts. The "Our Homework Is Harder" slogan is very eye-catching on a red shirt even if it's a bit controversial with other majors. Nevertheless the shirts are nothing if not truthful.



*Our cool T-shirts
come in black...*

or rad... I mean red

We took a trip to Lawrence Berkeley National Laboratories (LBNL) this year and toured their laser lab and the Advanced Light Source. The ALS is a synchrotron radiation facility that produces very bright and energetic radiation for use in a wide range of sciences and experiments. In the laser lab, we got to see the facility's plasma accelerator which they boast can produce GeV levels of energy in just 3.3 centimeters. Next year we would like to visit the much larger Stanford Linear Accelerator.



Our visit of the LBNL laser lab

*..quite inspiring as
you can see...*



Our crowning achievement in this past year has been our tutoring program. Inspired by Dr. Bryant Hichwa, the SPS has created its own program in recognition of the historic lack of math and physics tutors here on campus. We recognized that we are a whole group of students more qualified than anyone else on campus to tutor these subjects, so we enlisted eight or ten SPS tutors and put the word and the flyers out. We have been charging ten dollars per hour with 25% going to SPS for fundraising, but soon hope to be able to subsidize our tutors with funds from the student union. In the past two semesters, I am proud to say that we have helped over 35 students to better understand math and physics, to complete their homework and to pass their exams.

I would like to invite all of our physics majors to join us this coming year as SPS continues to grow and evolve. I personally have gained a comforting sense of camaraderie with my physics friends and have found an invaluable support network therein. I liken SPS to a colony of bees—we are busy as hell, you don't want to make us mad, and we have this wonderful emergent property in that the whole is greater than the sum of our parts. I look forward to seeing all of our physics majors, both new and returning, next semester, and don't forget to join National SPS. There are multiple benefits to doing so, and you can check it all out at www.spsnational.org. To get on the SPS email list for upcoming meeting notifications, email me at:

patrickbrown@universe.sonoma.edu

Goodbye and Good Luck Grads!

Hello and Good Luck Freshmen!

We had a winner!

By j. robert dobbson ('89)

John Ray Dunning's career was recently celebrated at an alumni reunion that included presentation of the new Darwin Hall. After touring the new physics labs, alumni and students enjoyed a reception in the commons which had been beautifully decorated by Sarah Silva ('02) and a cast of current students.

Dr. Dunning, who taught physics at Sonoma State for 37 enthusiastic years was honored for his chalkboard-fu and his commitment to physics education.

Seventy people gathered in the commons for dinner and testimonials to the inspirational Professor Dunning. Gary Zupan ('69) and Roberto Ramirez ('72) were the alumni who traveled furthest through time to attend while Gary Zupan ('69) of West Chester, PA, and David Munton ('82) of Austin, TX traveled furthest through space to attend. Thanks to generous donors, current students were able to attend for free.

After dinner, Professor Joe Tenn made a beautiful presentation of John's career at Sonoma. Eighteen encomia were delivered by former students, faculty, and current Dean Saeid Rahimi. Emotion was so high, our talented tech Steve Anderson was inspired to spontaneously take the lectern in praise of John's professional professionalism.

"Some of the more fond memories include writing with one hand while erasing with the other."



A lovely memory book was assembled by Dan Nicholas ('06) and presented to John. This included many pictures and all the tributes as well as two pages of memories written by those present at the event.

With his Einsteinian hair flying, Dr Dunning answered his praise with a few words in favor of nuclear energy.



Many of us remember the years when Dr. Dunning would hold office hours while flat on his back and yet maintain his boundless energy. Some of the more fond memories include writing with one hand while erasing with the other, the invitation to accept a challenging problem and the handshake and hearty congratulations received upon successfully rising to the challenge.



After touring physics labs, and students reception in the

All of the pictures and tributes in the memory book are available to anyone who donates to any of the departments. <http://www.phys-astro.sonoma.edu/PublicSupport> If any of those donations are to the Student Development Fund, they will be matched by a generous anonymous donor.



Enjoying dinner in the commons



The "new" Darwin Hall



Sharing memories...



...the new alumni enjoyed a commons

ALUMNOTES

Gary Zupan ('69) is an engineer working for the Food and Drug Administration on approval and regulation of medical devices with embedded software such as MRI, CAT-scan, ultrasound, pacemakers, infusion pumps and dialysis. He was formerly a consulting software engineer with Legendary Systems, Inc. and was a self-employed software engineer for many years. He earned an M.Ed. at Hyles-Anderson College in 1983.

Eileen Leidel Albertsen ('77) teaches ice skating at the Genoveva Chavez Community Center in Santa Fe, NM and runs a jewelry-making business.

Alan DeMars ('78) is a member of the DSP/BIOS Kernel development team at Texas Instruments in Santa Barbara, CA. He was formerly manager of DSP applications development with Ericsson IP Network Edge & Access in Santa Barbara. He received an M.S. in scientific instrumentation at UC Santa Barbara in 1980. He writes, "I learned a fair amount of programming and applied physics at SSU. I use these skills not only in my daily job but in many other aspects of my life."

Jim Pisano ('82) is a software engineer at the National Radio Astronomy Observatory in Charlottesville, VA, where he develops software for the Atacama Large Millimeter Array. He writes, "For me it all started at SSU: physics, astronomy, software development, and real-time instrumentation. I got the foundations all of these skills in my undergraduate training at SSU."

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Hall Effect with the 2007 Newkirk Award

By Ryan Olson

In everyday life electromagnetic forces are overwhelmingly dominant and are well understood. For example, when a semiconductor, which carries negatively charged electrons or positively charged holes after doping, is placed in an external magnetic field, a Lorentz force is going to push these carriers to move in a direction perpendicular to their motion, resulting in the so-called *Hall effect* in semiconductors. The knowledge of this phenomenon has become increasingly important as device sensitivity increases. Silicon and gallium arsenide are the most often used semiconductors, of which high performance devices are made. Using the *Hall effect*, one can determine the two most important parameters in semiconductors: the concentration of carriers in the material, and the mobility, for example, how fast carriers move in an external electric field.

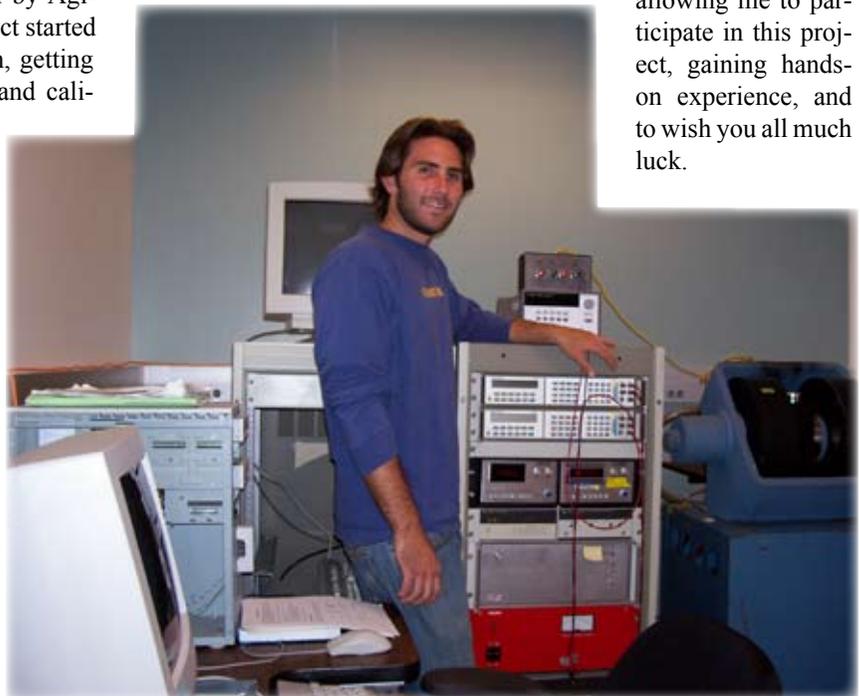
“Using the Hall effect, one can determine the two most important parameters in semiconductors: the concentration of carriers in the material, and the mobility...”

Over the past few months, I have worked closely with Dr. Hongtao Shi in the renovated Darwin on a Hall Measurement System, which was donated by Agilent Technologies in Santa Rosa. The project started from basics: making spaces for the system, getting water and power for the magnet, testing and calibrating all components, and then doing all the measurements. The instrument worked well in Windows 3.1, if you remember those old DOS times. Unfortunately, the hard drive crashed before the system was delivered to the Department, so we would like to transform it to Windows XP. The fun part was to test all the electronics and then develop a C++ program to analyze the data we take. Once the program gets a hold of information such as the voltage and current with different configurations, it will then calculate the sheet resistance, carrier concentration, and mobility, namely, the parameters that are related to the electrical properties.

At this point we can manually set the current, voltage, and the magnetic field to run all measurements. We are hoping in the near future we can automate the whole system by using LabView, which will allow us to measure the temperature dependence of all parameters as well. At the moment I am writing this article, PHYS 366 is using the instrument to run their samples at room temperature and at liquid nitrogen temperature, which is very exciting.

Working on this system while concurrently taking Physics of Semiconductors (PHYS 475), has helped me to better visualize what is really happening in these materials in an external electromagnetic field. I have even got a better picture of the concepts introduced in Electricity and Magnetism (PHYS 430). The Newkirk Award also gives me an opportunity to gain insight on time management and organization in the lab environment, which I had hoped from the start. I have also become aware of the dynamics and skills required to work in this type of position. Therefore, I highly recommend all physics majors to take full advantage of every opportunity that presents itself in the way of working in the lab. It has helped me to narrow the path I plan to take in the future after I graduate in May. I would like to thank the Department along with

the Newkirk family for allowing me to participate in this project, gaining hands-on experience, and to wish you all much luck.



Ryan Olson with the Hall Measurement System

Astronomical Research with the McQuillen Award

By Kevin John

Sonoma State University offers physics students many outstanding research opportunities, one of the most extensive of which is the McQuillen summer research award. One student per summer is granted this \$3,000 award to pursue full time research with a faculty member for eight to twelve weeks. Unlike research opportunities available throughout the semester, the McQuillen award offers students a chance to experience what full-time research feels like. This award is made possible by a generous donation from Mike & Sheila McQuillen.

My summer research project was an observation of the binary star system Z-Drac using Sonoma State's robotic telescope GORT. Z-Drac is what is known as an eclipsing binary star system. Binary indicates that two stars near one another orbit about their common center of mass. Eclipsing means that the orbital plane of the stars is aligned with our line of sight so that such that as the stars rotate one passes in front of the other and blocks the light from that star.

In most binary systems, one star is brighter than the other. When the brighter star is eclipsed by the darker star, the light from the system will reach its lowest value; we refer to this as the primary minimum. When the darker star is eclipsed by the brighter star the intensity of light from the system reaches its second lowest value, called the secondary minimum. If the time between primary and secondary minima were both exactly the same, we would know that the stars have equal mass. Of course, this is usually not the case, and by analysis of the difference in times between minima we can calculate the relative masses of the stars.

Taking time series data meant long hours in front of the telescope. Fortunately, since GORT can be operated remotely from anywhere with good internet connection, this meant long hours in front of my computer from the comfort of home. At dusk, the telescope had to be brought online, calibrated and focused, and made ready to observe. With the telescope ready to go, I would find my star and let the telescope start to take data. I would take data for as long as I could, usually until the fog rolled in at about two o'clock. The last step was analyzing the data, which meant running my thousands of images through Maxim, our analysis software, and finally putting the information into our Binary Maker software to build a mathematical model of the system.

I worked with two professors during my research, Dr. Gordon Spear and Dr. Kevin McLin. Ultimately, it was a very rewarding experience. I hadn't been able to fit any astronomy classes at Sonoma State into my schedule, and the summer research allowed me to get hands on research in that field. Sonoma State's telescope is always open to any students who may want to use it for their own research.

ALUMNOTES

James Aroyan ('87) is the principal of JRJ Simulation & Design, providing consulting services in physical, numerical, and biological modeling. He earned his Ph.D. in physics in 1996 at the University of California, Santa Cruz, where he developed 3-D bioacoustic simulations for modeling dolphin biosonar and hearing. He continues to do research in bioacoustic modeling, dolphin biosonar, and marine mammal hearing. He writes, "Physics is an excellent major for anyone seeking a broad science and math education. I use the math, E&M, optics, and programming skills that I learned as a physics major at SSU on a daily basis in my consulting work. SSU is a great place to learn and study physics."

Kenneth Ritley ('88) is a consultant at Hewlett-Packard-Consulting in Germany, but he spends much of each year working in India. Formerly a postdoctoral researcher at the Max Planck Institute for Metals Research in Stuttgart, he earned a Ph.D. in physics at the University of Illinois in 1998. He writes, "I believe fully in the idea of getting a degree in Physics. It's terrific training for almost anything."

Dan Wilcox ('89) is a research support specialist at Cornell University's Space Sciences Lab. He was for many years an electronics technician at the Canada-France-Hawaii Telescope in Hawaii.

Keith Waxman ('90) was appointed instructor of astronomy at Santa Rosa Jr. College in Fall 2006. He was previously a part-time lecturer there, at San Francisco State University, where he earned an M.S. in earth and space science in 1994, and at SSU. He writes, "My education and experience at SSU were instrumental in me earning this position. I want to thank the SSU Physics and Astronomy faculty and staff for all that they have given me."

Steve Grossberg ('92) is now teaching mathematics and computer applications at Oakridge High School in Oakridge, OR. From 2004-06 he taught high school mathematics, including International Baccalaureate courses, at the European School in Heredia, Costa Rica. Previously he taught math and science at Geyserville Educational Park, along with numerous courses for Sonoma State University's PreCollege Programs.

ALUMNOTES

Stephen K. Mosier ('90) is a clinical assistant professor in the Department of Anesthesia and Critical Care at the University of Pittsburgh. He earned his M.D. at the State University of New York at Brooklyn in 1998 and completed his residency in anesthesiology at the University of Pittsburgh in 2002. He writes, "As an Anesthesiologist, my job requires that I have a detailed understanding of human physiology. Most of our physiologic functions, particularly cardiovascular and pulmonary functions, can be modeled by electrical, mechanical and fluid dynamics systems. My education in Physics from SSU has given me a greater understanding of these systems which has translated into better care for my patients."

Suryadi Wijono ('94) is a manager for BASF in Jakarta, Indonesia, where he works with chemical and plastic products.

Willie Rodriguez ('97) is a wastewater treatment plant operator for the Graton Community Services District in Graton, CA. He was formerly a product safety engineer at Agilent Technologies in Santa Rosa.

Tim Graves ('01) is a business analyst with Pacific Pulmonary Services in Novato. For ten years he was an educational developer and information technology consultant on the NASA Education and Public Outreach team at Sonoma State University.

Kevin Thomas ('02) is a Police Officer working for the California State University system. He writes, "My general knowledge of physics helps me understand defensive driving, accident reconstruction, ballistics, fingerprint analysis, means of entry, and many other aspects of my job."

Student profile of Gabi Sanz-Douglass

By Gabi Sanz-Douglass



I am a junior at Sonoma State University majoring in Physics and minoring in Mathematics. Besides all the school work I work for Learning Skills Services as a math, chemistry and physics tutor. My plans for this summer are to attend an 8 week paid summer undergraduate research internship through the National High Magnet Field Laboratory at the University of Florida, Gainesville under Mark Meisel, Professor of Physics. The type of research I will be doing is "low gravity" work. Also, I will be visiting some family in Pennsylvania and studying for the physics GRE subject test.

ALUMNOTES

Jerilynn Schisser ('03) is teaching physics and chemistry at Bethel High School in Vallejo. She was formerly an optical engineer developing three-dimensional graphics systems with Real D in Beverly Hills.

Lorie Siebler ('03) is the parent voices coordinator for the Community Child Care Council of Sonoma County. She writes, "My ability to think things through analytically and my knowledge of Excel come in handy daily and can largely be attributed to my time spent at SSU."

Michelle Valencia ('03) is a revenue auditor at Sho-KaWah casino in Hopland while studying for a teaching credential at Dominican University of California.

Corey McCarthy ('04) is a pilot with Atlantic Southeast Airlines. He graduated from the Commercial Airline Pilot Training program at Embry-Riddle Aeronautical University in Daytona Beach, Florida in 2005.

Peter Quinliven ('04) is an energy analyst with the California Energy Commission. He earned an M.S. in physics at the University of California, Davis in 2005.

Andrew Clawson ('05) is an optical engineer with OptoSigma in Santa Ana.

Patrick Colbus ('05) is a senior technician in the molecular beam epitaxy engineering group at Agilent Technologies in Santa Rosa.

David Gray ('05) is a Project Engineer at Deposition Sciences Inc. in Santa Rosa.

Jeanie Mar ('05) is a graduate student and teaching assistant in mechanical engineering at the University of Colorado, Boulder.

Tim McKernan ('05) is an application engineer at Fronius USA Solar Electronics Division in Brighton, Michigan.

Daniel Nicholas ('06) is a technical services engineer at EandM in Healdsburg.

A Record Year for Donations!

This was an unusual year, and we are grateful to all of the donors to the Physics and Astronomy Department Equipment Fund who made our move back into Darwin so much easier by allowing us to buy badly needed laboratory equipment for our new facilities.

Many donors as well contributed to keeping the weekly "What Physicists Do" series going for the 72nd and 73rd semesters, packing the house many times over in the new Darwin 103 lecture room. In the fall, we heard talks in an alternative energy sub-theme about global warming by Dr. Philip Duffy from the Lawrence Livermore National Laboratory, nuclear energy by Dr. Jasmina Vujic from UC Berkeley, the plug-in hybrid by Dr. Andrew Frank of UC Davis, and hydrogen fuel cells by Dr. Joan Ogden from UC Davis. A second popular sub-theme on cosmology featured authors Dr. Joel Primack and Nancy Abrams from UC Santa Cruz, and Dr. Leonard Susskind from Stanford University.

Highlights of the spring semester ranged from the historical secrets of the Archimedes Palimpsest revealed by Dr. Uwe Bergmann from the Stanford Linear Accelerator Center, to the ultramodern, ultrafast lasers described by Dr. Jim Kafka, of Spectra-Physics and laser accelerators discussed by Dr. Wim Leemans from the Lawrence Berkeley Laboratory. Not to be missed was the talk by MacArthur Foundation fellowship winner Ned Kahn, who showed many video clips of his physics-inspired, turbulent public artworks.

And last but certainly not least, we had a huge response to our Department's Seventh reunion, which honored Prof. John Dunning on his retirement, and brought many alums back to SSU to tour the new Darwin facilities. We are grateful for the outpouring of support for our Student Development fund, which will benefit students doing research with our new faculty, as well as enabling many of our current students to attend the reunion dinner. We are also grateful to an anonymous donor who has pledged to match funds newly donated to this program.

This year we thank the following donors:

Physics & Astronomy Public Programs: Anonymous, Stephen & Elizabeth Bursch, Francis & Patricia Marshall, Meng-Chih & Suzan Chan Su, Donald & Diane Farmer, Robert S. Tuttle DDS, Forestville Mini Storage (Ed J. LeDu), George Splane, Martha D. Peterson, Robert A. Fisher, Lynn Cominsky & Garrett Jernigan, Carolyn Clary-Macy & David Macy, Don Herriott, '72, & the Roche Carolina Matching Gifts Program, Alan DeMars, '78, & Susan Schroeder

Physics & Astronomy Equipment & Supplies: Bernard & Barbara Meyers, Matthew, '93, & Sharon Davis, Donald & Diane Farmer, Tim P. Finnegan, '84, David Hawk, '77, Gary & Lynn Imm, Max Machinery Inc. in memory of John Max, Lauren J. Novatne, '89, Don Herriott, '72, Robert M. Chavez, '03, James, '87, & Ramona Aroyan, Tony & Joan Marie De Bellis.

Physics & Astronomy Student Development: Mike & Sheila McQuillen, Joe & Eileen Tenn, Roberto Ramirez, '72, Jerilynn Schisser, '03, Daniel, '06, & Galadriel Nicholas, David C. Munton, '82, & Wen-Hua Teng, John F. Collins, '03, & Kimberly Blinoff, Miriam Tobin Jewell, '90, Don Herriott, '72, June Ratto, Bradley N. Yearwood, Frederick Arioli, '75, Katherine C. Chelton, '81, Stephan, '82, & Sandra Crandall, Patrick Colbus, '05, Kevin Ablett, '83, & Shok Ting Ch'ng, Marie & Brian Carlisle, Sarah L. Silva, '02, Daniel Nicholas, '06, j. robert dobbson, '93, James Musto, '88, & Mary Farkas, Robert M. Chavez, '03, David Nielsen, '74, Stephan, '82, & Sandra Crandall, Duncan & Marion Poland, Keyvan Farahani, '85.

Physics & Astronomy Scholarship (endowment): Lynn Cominsky and Garrett Jernigan.

Science at Work Endowment (to support What Physicists Do): Max Machinery, Inc., in memory of John Max.

Sol & Edith Tenn Scholarship: Joe Tenn.

Tenn Takes Office in HAD



In February SSU Professor Joe Tenn became secretary-treasurer of the Historical Astronomy Division (HAD) of the American Astronomical Society. Among other duties, this makes him webmaster and newsletter editor of the HAD.

Dr. Tenn has presented papers at the last three January meetings of the HAD. The most recent, in 2007, was titled “Lowell Observatory Enters the Twentieth Century—in the 1950s,” and was part of a sym-

posium on Case Studies in How 20th Century Observatory Directors Got Chosen. His paper, based primarily on research conducted in the Lowell Observatory archives the week before the Seattle meeting, has since been published in the *Journal of Astronomical History and Heritage*. He also interviewed a number of people, including 1950s Lowell Observatory Director Albert G. Wilson, who now lives in Sebastopol and occasionally attends “What Physicists Do” lectures.

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