

Volume 4, Issue 1

October 8, 2014

Greetings!

Welcome to the Fall 2014 semester. As fall colors begin to appear, we are well into our semester. We greeted the biggest ever freshman class in August. The School of Science & Technology also welcomed back returning students to biology, biochemistry, chemistry, computer science, engineering, geology, kinesiology, mathematics, statistics, nursing and physics programs. A record number of 9,310 students attend Sonoma State.

We are very pleased to welcome two new permanent faculty to our school – Dr. Martha Shott in Mathematics & Statistics and Dr. Sean Place in Biology. They join talented instructors from across our School teaching nearly 2,300 FTES (full-time equivalent students) in general education, core required curricula, and advanced studies.

BIOL 320A & 320B, and SCIENCE 120 are just two examples of faculty innovation and student engagement. For the Fall, *BIOL 320A Ecology and Evolution - an Integrative Approach*, and in the Spring *BIOL 320B Molecular Biology, Cell Biology and Physiology*, will demonstrate the integrative nature of these typically separate subjects. *SCIENCE 120 – A Watershed Year* continues to immerse freshmen into an inquiry-based academic learning community covering core topics in biology, mathematics, and critical thinking while addressing environmental sustainability issues. The year-long 12-unit course stresses lab and field experience and utilizes the SSU Preserves and various community partners like the Sonoma

County Water Agency as real-world test sites for investigation and experimentation. Now in its third year, this integrated program is yielding positive results. SCIENCE 120 students are three times more likely to enter a science, technology, engineering, or math (STEM) major and are more likely to return as sophomores.

In his Fall Convocation address, President Armiñana proposed a three-prong strategy for academic success over the next three years. These prongs are: hiring more tenure-track faculty; expanded support for faculty mentors working with students engaged in research, scholarship, and creative achievement; and enhanced advising capacity. This year we plan to hire six new permanent faculty in biology, computer science, geology, kinesiology, nursing and physics. This is a great step forward that we hope to build on. We will also expand mentoring and advising support for students in Science and Technology.

This newsletter is filled with the latest on the many exciting efforts underway in Science & Tech. We have a lot to be proud of! If you would like to know more, please be in touch.

Warm regards,



Lynn Stauffer, Dean  
School of Science & Technology

## \$130,000 in New Funding

ORNL and SST collaboration

Dr. Suzanne Rivoire of the Computer Science Department received \$130,000 in new funding from Oak Ridge National Laboratories (ORNL). The collaboration between ORNL and Dr. Rivoire, which centers on recognizing supercomputing applications based on patterns in their power consumption, is now in its third year.

Oak Ridge National Laboratories initially approached Dr. Rivoire because her research focuses on the energy efficiency of large-scale computing facilities, and ORNL needed to better understand the energy consumption behavior of various systems in such facilities. To do this, Dr. Rivoire assembled a group of undergrads to build a database detailing the power curves for the workloads running in their systems. The approach was two-pronged: build the database and then analyze the data—a mix of mechanics and research. According to Stephen Poole and Chung-Hsing Hsu of ORNL, the “SSU undergrads involved in this project did an exceptional job at both sides of the problem.” The students not only built their first database, they “proposed a variety of good methods to analyze the power curves/signatures.” It is in large part due to ORNL’s experience and the exceptional quality of the students’ work that they have decided to continue working with Dr. Rivoire and SSU.

In total for 2014, the project supported nine undergraduate student researchers and resulted in one peer-reviewed paper with SSU undergraduate authors.



Over the summer, fifteen of Sonoma County's top high school science students participated in the School of Science and Technology's seventh annual Summer High School Internship Program (SHIP). These students participated in research projects alongside SST faculty mentors from the departments of Biology, Chemistry, Computer Science, Engineering Science, Kinesiology, and Physics & Astronomy. On September 10, the students presented their research results at a symposium held at SSU.

SHIP is coordinated by Dr. Suzanne Rivoire of the Computer Science Department. Her work on the program, along with this year’s interns, were featured in a piece in the [Press Democrat](#).

Faculty mentors are supported by a generous donation from Chuck and Cathi Williamson. For more information on the program, please visit the [SHIP website](#).



## Lynn Cominsky Honored by Women in Aerospace Organization

### **Learning by Making: Update**

Last spring, Dr. Lynn Cominsky and Early Academic Outreach Director Susan Wandling were awarded a \$3 million grant from the U.S. Department of Education for “Learning by Making: STEM Success for Mendocino County.” The aim of the project is to teach Mendocino high school students how to construct and design their own hands-on science and engineering experiments that involve making scientific measurements pertinent to the future of our planet and economy.

This June, the team held their Summer Institute with the first cohort of teachers from MCOE. The teachers participated in various activities that highlighted central concepts integral to implementing Next Generation Science Standards in their courses.

In October 2014, Physics & Astronomy Prof. Lynn Cominsky will travel to Washington, D.C. to receive the “Aerospace Awareness” award from the Women in Aerospace professional organization. The award recognizes “excellence in outreach and building public awareness of aerospace programs and developments; innovative approaches to increasing public understanding of aerospace development and activities; commitment to advancing and defining the roles that aerospace plays in all aspects of society; commitment to professional growth; and service as a role model or mentor that shows dedication to the advancement of women in aerospace.” Cominsky is being honored for “her excellent leadership and sustained dedication to aerospace education and for her tenacious advocacy for girls and young women in aerospace.”

# Acoustic Measurement of Weill Hall and the GMC

By Dr. Mike Jones

It is quite possible that Weill Hall, the feature venue of the Green Music Center, is the finest concert hall located on a university campus. The presence of the Hall presents Sonoma State with unique educational and research opportunities. In the Spring of 2011, in anticipation of the completion of the Green Music Center, the Physics and Astronomy Department reestablished the Physics of Music (PHYS 300) course. The new version of the course is being taught for the fifth time during the Fall 2014 semester.

The GMC is the ideal venue to learn about acoustics because of the extraordinary level and variety of acoustic control present in the different venues. Students are given a one or two class period tour featuring the solo and group practice rooms, the smaller concert rooms and finally Weill Hall. The students are fascinated by the elements of acoustic design on display and the distinct acoustic environments created. The tour is always the highlight of the class for the students.

In the Fall of 2013, the department proposed the purchase and utilization of a room acoustics measurement system.

The funding was granted as a Green Music Center Academic Integration proposal, and the equipment was purchased in early 2014. The system utilizes the Dirac measurement and analysis software and includes both omnidirectional and vocal-simulation sources along with omnidirectional and bidirectional microphones.

Weill Hall is not just invaluable for demonstrating the principles of musical acoustics it also offers a unique facility for research into concert hall acoustics. Last spring, senior Jacob Lewis' Capstone Project included the first measurements of Weill Hall. Jacob assembled and calibrated the complete system described above. Several classrooms in Darwin Hall were measured to establish a baseline and to confirm the correct operation of the measurement system. Measurements at twelve locations within Weill Hall were completed in April and the results were presented at the SST Science Symposium in May.

It is hoped that future research will result in extensive measurements of the acoustic parameters of the hall as a function of listener location, under different arrangements of the acoustic curtains, and with and without the rear wall open. The Green Music Center is not just an artistic asset but a valuable scientific and educational asset for the Sonoma State University community.

## Deborah Roberts Receives Healthcare Leader Award

Dr. Deborah Roberts, Chair of the Nursing Department, was selected as a recipient of the 2014 Healthcare Leader Award from the [Northern California Center For Wellbeing \(NCCWB\)](#).

The NCCWB Celebration of Dreams honors leaders in Sonoma County who have demonstrated their commitment to individual, family and community health. The Center recognized individuals and organizations in five categories that have made a profound difference in the well-being of our community through promoting healthy lifestyles to create an environment that fosters healthy choices. Awardees were named in the following categories: Physician Leader, Community Leader, Healthcare Leader, Non-Physician, Healthy Business Leader, and Youth Leader.

Deborah Roberts' outstanding work in promoting health in the community was applauded. Her tireless efforts to meet the unmet needs in the region by creating SSU Nursing-Community partnerships and her clinical oversight of the [Jewish Community Free Clinic](#).

### Nursing Department News

- Dr. Mary Ellen Wilkosz was awarded Song Brown grant funding to begin a new program offering a certificate in nursing education for Family Nurse Practitioners wishing to pursue a teaching career. These students will do their student teaching at the Jewish Community Free Clinic with experienced nursing educators.
- The Transition into Practice nurse residency certificate program added a new partner this summer to include both Sutter Medical Center of Santa Rosa as well as the program's new addition of Santa Rosa Memorial Hospital. The program's 58 graduates were all offered RN positions in our community. Both Kaiser Permanente and Queen of the Valley Medical Center are joining the efforts next summer.
- For the third year running, the pre-licensure program has a 100% pass rate on the NCLEX-RN exam. The national pass rate is 89.7%.



Front row, left to right: the guide's dog, Sean Storey, Morgan Kent, Carley Dunleavy, David Morrison. Middle row: Lara Felixson, Jason Carman, Joe Giunchigliani. Back row: John McNier, Ryan Helms, Matt James, Conrad Black.

# A Wonderful Hike: SSU Geology Studies Cambrian Life in the Canadian Rockies

*By Phil Mooney*

Twelve hearty souls from the SSU Department of Geology recently embarked on a six day field trip to the Canadian Rockies in British Columbia and Alberta. The focus of the trip was a visit to the world-renown Burgess Shale, a UNESCO world heritage site widely lauded as the most important fossil locality in the world. This field trip ran in conjunction with the upper level Geology elective course, GEOL 321: Burgess Shale Paleontology, a class taught by the Department of Geology's paleontologist Matt James since 2003.

The fossils of Burgess Shale were discovered in 1909 during construction of the Trans-Canadian Railway. These 505 million year old fossils, remnants of creatures that once lived in a shallow sea, are the best record of the period of time after the appearance of modern hard-shelled multicellular animals and have proved pivotal to the study of Paleontology. They are located in the majestic Canadian Rockies on the eastern border of British Columbia, surrounded by stunningly beautiful mountains shaped by numerous glaciers. In short, a geologist's heaven!

After a day of travel to their home base in Field, British Columbia, the first full day in the field was spent traversing the massive Athabasca Glacier with a mountaineering guide. The Athabasca Glacier is a six km long sheet of blue-green ice that slowly cascades down a valley that is connected to the Columbia Icefield, transporting massive sediment loads as it travels nearly thirty meters a year. On an all-day six mile hike up the glacier, students learned about glaciology, saw fantastic examples of a landscape carved by glaciers, and witnessed firsthand the effects of climate change as the ice retreated up the valley.

Next on the agenda were two days exploring the world famous Burgess Shale on guided hikes to the Walcott Quarry and the Mt. Stephen Trilobite Beds. A strenuous thirteen mile hike, starting at a waterfall, heading uphill through beautiful forests, and traversing a mountain with stunning alpine scenery brought students to the most important of fossil sites, the historic Walcott Quarry where the Burgess Shale fossils were first discovered. Along the way students learned of exotic Cambrian animals such as the fearsome *Anomalocaris*, the five-eyed *Opabinia*, and the otherworldly *Hallucigenia*. The next day was a steep five mile hike up Mt. Stephen where there were so many trilobite fossils that you couldn't help but step on them! At both of these sites, students were rewarded for their physical effort with amazing fossil finds and breathtaking views of the surrounding mountains.

The last full day of the trip brought students into the world of mountains, faults, and glaciers with a hike around the gem of the Canadian Rockies, Lake Louise. A six mile hike brought students to a fantastic lunch at the Plain of Six Glaciers Tea Hut, a charming, historic, and primitive restaurant only accessible by foot. With bellies full of tea and hot scones,

the intrepid geologists continued up the valley to a scenic overlook and discussion of the tectonic formation of western North America. With weary legs, the group hiked down and enjoyed a wonderful sendoff dinner, sampling meat from the characteristic terrestrial megafauna of a North America (Buffalo, Caribou, Elk, etc.) at the Emerald Lake Lodge.

The sixth day was a day for travel, but along the way students were treated to a private tour of the Royal Tyrell Museum of Paleontology in Drumheller, Alberta. With an all-access behind the scenes tour by a resident paleontologist, they learned about all the hard work that goes into the preservation of fossils, explored the back room archives, and enjoyed a private tour of the main exhibits of the museum.

With thirty plus miles of hiking packed into four full days, students traveled back to campus tired, in markedly better shape than when they began, and with a renewed vigor to continue their geologic education at SSU. There is no substitute for fieldwork and hands-on learning in the natural classroom of the Earth. Students had a great time on this trip, were exposed to beautiful and world-famous geology, and made memories to last a lifetime.

Carley Dunleavy, kneeling; left to right: Conrad Black, John McNair, Sean Storey, Ryan Helms, Morgan Kent, Paul (guide), Jason Carman, Matt James, Joe Giunchigliani, David Morrison, Lara Felixson.



# Engineering Science—Summer 2014 Happenings

## Hand Tremor Monitor Prototype

This summer, a team of interdisciplinary students at the AITIS Laboratory ([faridfarahmandresearch.blogspot.com](http://faridfarahmandresearch.blogspot.com)) in the Department of Engineering Science completed its first working prototype to monitor hand tremors in patients with Parkinson's disease. The researchers, Campbell Smith, Luis Reyes Arango, both Electrical Engineering majors, and Janene Grippi, a Kinesiology major, started the project in March of 2014 and have been working closely with their Medical advisor, Dr. Allan Bernstein. "This device can offer detailed reports about status of a Parkinson's disease patient's hand tremor, and thus allowing the neurologists and physicians to optimize their drug therapy," says Dr. Farahmand, the team's advisor. "The next phase of the project will be focusing on improving the software and finding more patients to use the device," he adds. This project was funded by CSUPERB (CSU Program for Education and Research in Biotechnology) and the students will be presenting their work at the [BioInterface 2014 Conference](#) in Redwood City, California.

The project was featured in the [Press Democrat](#).



Left to right: Luis Reyes, Janene Grippi, Campbell Smith.



## AITIS Laboratory and Summer Academy

In the summer of 2014, over twenty students ranging from high school to graduate level participated in AITIS Laboratory sponsored research activities and the second annual Summer Academy. The participants carried out three main research projects, all of which are expected to result in several poster presentations and conference publications.

The [AITIS Laboratory](#) is committed to utilize the engineering expertise and research activity of its faculty to initiate innovative and sustainable graduate and undergraduate projects to educate future environmentally responsible, community minded, and skilled engineers. The AITIS Laboratory not only partners with researches at other institutions, but regularly works with local industries to provide sustainable engineering solutions.

Students in the Summer Academy were funded by the [Summer High School Internship Program](#) and the [Agilent-BEST Scholarship Program](#). This summer's team was diverse and interdisciplinary; it included kinesiology, chemistry, and engineering students from all academic levels from four institutions: Windsor High School, Santa Rosa Junior College, SSU and UC Santa Barbara. The team also included three faculty members: Dr. Don Estreich, Dr. Ali Kujoory, and Dr. Bala Ravikumar.

Above, left to right: Jorge Solorio (SHIP student), Erik Zaro (Engineering), Janene Grippi (Kinesiology), Campbell Smith (Engineering), Scott Ireton (summer volunteer student from UC Santa Barbara), Alberto Martos (Engineering), Laura Buer (Chemistry), Cameron Gardner (Santa Rosa Junior College), Luis Reyes (Engineering), Allan Mejia Berzunza (visiting student from Mexico), and Dr. Farid Farahmand.

## Engineering Science Student Invited to NIWeek

The Santa Rosa-based National Instruments has sponsored Luis Reyes, a senior engineering major at SSU, to attend the 20th annual [NIWeek conference](#) presented by National Instruments in Austin, Texas. More than 3,200 innovators representing a spectrum of industries are expected to participate in this event. Reyes and his team, Janene Grippi, a kinesiology major, and Campbell Smith, an engineering major, have been developing a wearable device to quantify hand tremors in patients with Parkinson's disease. This project has been sponsored by the AITIS laboratory at SSU and fully funded by CSUPERB.



Luis Reyes.

# PhysTEC Grant

Dr. Scott Severson and Dr. Lynn Cominsky were awarded a \$30,000 recruitment grant from PhysTEC, the Physics Teacher Education Coalition. The 2013 National Task Force on Teacher Education reported, "the need for qualified physics teachers is greater now than at any previous time in U.S. history." Entitled "Building the Sonoma State University Physics Teacher Pipeline," the awarded grant responds to this need.

The grant centers on two major components: the recruitment of interested high school students; and the development of a supportive structure for undergraduate students as they gain teaching experiences within the department. The grant-supported work will include: building closer connections with instructors at area high schools and community colleges; the development of recruiting materials and classroom presentations; and meetings with Physics & Astronomy students that present innovative

teaching pedagogy in a fun and inspiring atmosphere. This recruiting effort strives to build and assess a sustainable model of preparing more physics teachers at Sonoma State University.



## Professional Development in Statistics Education

In June 2014, fifteen statistics instructors from the Department of Mathematics and Statistics spent two days of their summer at a workshop to learn about new approaches for teaching elementary statistics (Math 165). With technology making data simulations easily accessible for everybody, statistics education is moving to a more hands-on approach to teaching topics like confidence intervals and hypothesis testing. These new methods use bootstrap randomization methods.

On the first day of the workshop, the group of lecturers and tenure-track faculty learned about randomization and bootstrap methods from Patti Frazer Lock, a professor at St. Lawrence University and co-author of a new statistics textbook. Professor Susan Herring took over the workshop on the second day and led group activities and lesson planning sessions.

Aside from learning a great deal of new material, the faculty enjoyed spending two days collaborating and getting to know each other. For the new lecturers, it was a great way to get introduced to the department—the people as well as the culture that values supporting students at all levels. Everybody left energized and excited to bring the new ideas into their classes in the fall.

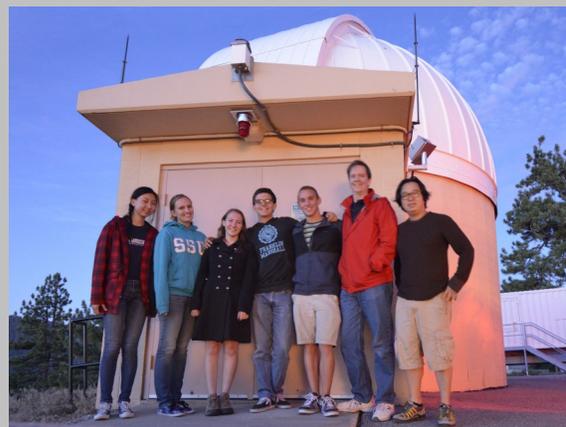
*Right: Susan Herring, left, and Wyndham Galbraith, right.*



## KAPAO Brings Adaptive Optics to SSU

Following four years of development at Sonoma State University and partner institution Pomona College, an advanced astronomical instrument, KAPAO, is in regular use observing the stars. Dr. Scott Severson of the Department of Physics & Astronomy works in a field called Adaptive Optics (AO), which uses advanced cameras, complex calculations, and a mirror that can change its shape up to one thousand times a second to remove the blurring "twinkle" introduced by the Earth's atmosphere. AO images can compete with space-based telescopes in terms of clarity.

KAPAO is located at the 1-meter telescope at Table Mountain Observatory in Southern California. Dr. Severson, along with his colleague Dr. Phil Choi of Pomona College (PC) and a team of undergraduate students, have begun their campaign of: observing stars known to host extrasolar planets, monitoring Jupiter's moon Io for volcanic activity, and probing the stellar population of star clusters. This summer saw the first use of the system remotely over the Internet from Sonoma State University, bringing this capability close to home.



The KAPAO team at dawn. Left to right: Greta Zhong (PC), Stephanie Church (SSU), Kelli Rockwell (PC), Franklin Marsh (PC), Henry Steiner (SHIP), Dr. Severson, and Dr. Choi.



Undergrads Stephanie Church (front) of SSU, and Greta Zhong (back) of PC operating the KAPAO instrument at Table



This past June, Fran Keller, lecturer in the Biology Department, participated in field research in Belize. Some might call research in the tropics a vacation, but there was no significant lounging around. The project goals were to create a major entomology collection housed in Belize, and to conduct bat inventories while there. The Maya Mountains of Belize are a biological hotspot. Belize has chosen to protect over one-quarter of their country as parks and preserves. Biological inventories help to better understand these protected areas while also providing specimens for research projects and species discoveries; if we don't know what exists in a region and its niche, then we cannot protect it. The Toucan Ridge Ecology and Education Society (TREES, treesociety.org) field station was the base of operations; the collection will be housed and maintained at Toucan Ridge. This facility is the headquarters of TREES—a scientific organization dedicated to the study of the biological and cultural diversity of Belize. The field station, owned by wildlife biologists Mathieu Charette and Vanessa Kilburn, is situated along the northern border of the Sibun Forest Reserve, a nearly 82,000-acre preserve.

The team included: Fran Keller, lecturer at SSU; Dave Wyatt, project leader and professor at Sacramento City College (SCC); Justin Kohn, student at SCC hoping to transfer to UC Davis to become an entomologist; Daniel Neal, a private industry biologist and environmental lawyer; and Krystal Pulsipher, who currently works as a field scientist for Bargas Environmental Consulting. Money for supplies and hotel costs were fundraised for the all-volunteer team through Experiment.com.

Since Keller's expertise is in Entomology and she has experience in museum collections, her role was to transport the collecting equipment to Belize and to facilitate insect curation to museum standards for the new collection. In addition, Keller trained the owners and managers of the TREES field station in the techniques for proper maintenance of entomology collections, insect curation techniques, and basic taxonomy of in-

sects. There were also student interns from Canada working at the field station while the team was there, giving Keller the opportunity for a few impromptu basic entomology lectures and insect pinning sessions.

Along the group picked up an unexpected collaborator: the Biodiversity Center of Belize (BioBelize). This is a research institute located near TREES field station in the city of Dangriga. The Director of Research is Stephen Harris, a PhD candidate in evolutionary biology at the City University of New York. Harris offered to conduct DNA barcoding of specimens the team collected in order to build a complimentary genetic library of the collection. BioBelize also works to train students from Galen University and other colleges in Belize to perform DNA barcoding. Traditional taxonomic methods were and will continue to be used to determine species' identities. That determination is then associated with the DNA barcode.

As for the bat inventories, when it wasn't raining at night in the rainforest, the mist nets went up just after dinner and the team waited very quietly in the dark away from the nets until their first catch. Bats are mammals and they have some very unique parasites. So another goal of the trip was for Wyatt to collect specific fly parasites off the bats, put them in alcohol and send them to Dr. Bruce Patterson from the Field Museum of Natural History in Chicago, and Dr. Carl Dick from Western Kentucky University, who both work on this specific group of parasites. Keller was able to help with the bats only a few nights because she was so busy curating the incredibly diverse insect population.

Each night at the field station, the team would find something new at the black lights (used to attract nocturnal insects). The team caught some hooded praying mantises that showed up at the lights for a free midnight meal. During the day, if the butterflies were not pre-occupied eating from a flower, then they were flying incredibly fast—there are probably a couple of YouTube videos of Keller frantically chasing the butterflies through the jungle with her net in hand.

Although this all sounds fun—and it was!—the work to pin thousands of insects, label them, identify them, and curate them for a collection is tremendously time consuming. Keller, Kohn and Wyatt would often work from 7 am until 3 or 4 am the next morning collecting and pinning specimens. They were unable to identify everything, but they were able to sort them based on rank, classification, and morphospecies. Specimens were left in Belize to start the collection, but many duplicate specimens were brought back to the Bohart Museum of Entomology at UC Davis.

Keller's goal is to offer two courses through SSU next summer in Belize at the TREES field station: a field biology course and a tropical biodiversity course that would total 8 units and consist of eighteen days in Belize and two days on campus. Students would get to participate in mist netting for birds during the day and bats at night, mammal trapping, and surveying amphibians and reptiles in the jungle around TREES. Students would also participate in lectures from local naturalists on ethnobotany, while learning how to identify tropical plants and also collect insects and add to the entomology collection at the field station.

If you are interested in the many fun adventures (and mishaps), you can visit their [Experiment.com](http://Experiment.com) webpage, where Wyatt blogged under the Lab Notes section.

# Entomology in Belize

By Dr. Fran Keller

# A Celebration of Careers

## Math & Stats Department says good-bye and thank-you to longtime faculty and staff

The 2013/14 academic year brought a lot of changes to the Department of Mathematics and Statistics.

In April, we celebrated the careers of Edie Mendez, Rick Luttmann and Bill Barnier who transitioned from the early retirement program into full time retirement. Hundreds of guests, including faculty, staff, students, alumni, family and friends, attended the retirement party at Prelude to honor the many contributions the trio has made to the department and the university throughout their combined 104 years of service. (Below: Rick Luttmann, Bill Barnier, Edie Mendez, left to right).



In June, the department and the School of Science and Technology said good-bye to long-term administrative coordinator and honorary “math-mom” Marybeth Hull. At a reception in her honor, a series of speakers remembered the many contributions and special talents that Marybeth had brought to her job—from comforting students and calming down parents to advocating for staff interests as the staff representative on the academic senate.



Marybeth Hull, right, with Dr. Brian Jersky, left, former Chair of Mathematics & Statistics at SSU and current Dean of Science at Cal Poly Pomona.

Over the summer, Sharon Cabaniss, another long term faculty member decided to retire. Later this year we will be honoring Sharon’s role in the department and the university at an event, which fits one of her passions: supporting the participation of women in math and science.

## 2014 Science Symposium

A WATERS and SST Collaboration

The School of Science and Technology (SST) in partnership with the WATERS Collaborative hosted the 2nd annual SSU Science Symposium on April 30, 2014. Held in the new Student Center, this event highlighted the research of over 140 students, and included both an open poster session and talks by Science 120 freshmen students. There were 68 research posters presented; fifty-six of the posters were from SST departments. The Physics & Astronomy and Chemistry departments tied for most posters at twelve each.

Students, faculty, staff, family and community members were welcomed by President Armiñana, Provost Rogerson, and Dean Stauffer. Attendees enjoyed light refreshments while talking with presenters and learning about their research. County Supervisor Shirlee Zane then presented awards in the following categories: Best Poster, Best Poster Runner Up, Best Water Related Poster, and Most Innovative Poster.

Physics major Hunter Mills was awarded Best Poster for “An Optical System for Application in Medical Physics and Astronomy.” The award for Best Poster Runner Up went to physics major Kevin Zack for “Putting Sonoma State University into Space.” Pasha Aboamery, Emma Anthony, Mark Castro, Devin Connor, Christopher Cunningham, Lauren James, Grace Lock, David Price, Justin Reacer, Quinten Rodriguez, and Kyle Towers of Dr. Michelle Goman’s Geography 317 class took the award for best Water Related Poster for their poster titled “Real Trees Have Curves: Dendrochronology at Fairfield Osborn Preserve.” Biology graduate student Julie Byrne won the Most Innovative Poster award for her poster “Determinants of Herpetofauna Distributions along Moisture Gradients.” Winners were presented with fifty dollar gift cards to Amazon.

Judges were not only thoroughly impressed with the quality of the posters and research, but also with the presenters’ ability to communicate their research to a general audience.



Hunter Mills, left, and Kevin Zack, right.

## Pi Mu Epsilon Mathematics Conference: Applications of Mathematics

By Jennifer Ganeles

The Sonoma State Chapter of the Pi Mu Epsilon Math Honor Society, in conjunction with the Mathematics and Statistics Clubs, will be hosting an undergraduate mathematics conference on Saturday, October 18, 2014 that emphasizes the applications of mathematics. This student-planned event will be held from 10 am to 5 pm in Ballrooms B and C of the Student Center and is free to the public.

Applied mathematics is not necessarily just doing math; rather, it is also how we use it in other fields. All areas of science and technology rely on mathematics, and there are applications to many other fields as well. Past student research presentations have included topics ranging from coexisting animal populations to hospital funding to imaging with coding apertures. Previous guest speakers have discussed probability in card games and sex determination in crocodilia.

This year's conference will include student talks on research in and different applications of mathematics, presentations about grad school options and requirements, and a career panel. Professors from various California colleges will also be presenting talks about specific applications of mathematics.

As a student club operating through Center for Student Leadership, Involvement, and Service (CSLIS), Pi Mu Epsilon functions under the motto, "To promote scholarship and mathematics." This conference demonstrates our commitment to this motto by working to expand peoples' perceptions of mathematics and its applications.

## Society of Women Engineers

SST's newest student club. *By Alyssa Afa'ese*

The Society of Women Engineers Club aims to increase diversity within science and technology studies and encourage more female students to pursue engineering careers. The club plans to create a suitable and scholarly environment for young women in STEM, providing each other with crucial support. Their goal is to push gender equality and promote the importance it has in future innovations. Upcoming events include field trips to nearby engineering facilities, inviting professional speakers to campus, as well as community outreach to local high schools. They also have future events to be planned with the Electrical Engineering Club and welcome all to join. The SST community and all interested parties are welcome to come out and see what the organization is about first hand. Please send any questions to [afaese@seawolf.sonoma.edu](mailto:afaese@seawolf.sonoma.edu).



Left to right: Hanan Sedaghatpish, Swathi Matsa, Kanti Bhat, Faiza Qadri, Gouri Thankam, Jennifer Nunn, Angelica Mendez, Miah Crockett, Maram Salameh, Alyssa Afa'ese.



## Pi Mu Epsilon

## I-Corps Microgrants

Three groups of SST students have been awarded a \$2,500 CSU Innovation Corps (I-Corps) microgrant:

- Gaby Arango (Biology) and Laura Buer (Chemistry): "A green waste water treatment using the water fern Azolla."
- Brent Barker (Biology): "Biosynthetic process to produce isoprenoid geranylgeraniol."
- Campbell Smith (ES): "Quantify tremors associated with Parkinson's Disease."

The students listed above will serve as their respective team's entrepreneurial lead. Kirsten Ely, Professor of Entrepreneurship & Accounting at SSU, will serve as each team's entrepreneurial mentor. Each team will also work with a Business student.

Dr. Michael Cohen and Dr. Farid Farahmand will work with Arango and Buer as faculty co-mentors. Arango and Buer's industry mentor is Igor Goryanin of the Okinawa Institute of Science and Technology. Dr. Michael Cohen is Brent Baker's faculty mentor. Barker's industry mentor is Lawrence Chao of Amyris, Inc.

For more information on the I-Corps program, please visit their [website](#).

Computer Science students Rachelle Thysell and Jolie Nazor received \$7,500 from the Computing Research Association for their research project, "Classifying Application-Level Power Consumption Patterns." Nazor presented her work in March 2014 at the Consortium for Computing Sciences in Colleges conference at CSU Northridge. Thysell earned an additional scholarship to present her work at the Grace Hopper Celebration of Women in Computing, to be held in Phoenix in October 2014.

# 2014 Daniel D. Arnheim Scholarship

Danielle Stensvold, ATC (Athletic Trainer Certified), a graduate student in the Kinesiology Master's Program, was recognized by the Far West Athletic Trainers' Association as the 2014 Daniel D. Arnheim Scholarship recipient. The plaque and scholarship funding is in recognition of her outstanding contribution and efforts as an athletic training student. Stensvold is the first participant in a program supported by the Department of Kinesiology and Dr. Steven V. Winter to bring certified athletic trainers to Sonoma County High Schools to support the sports medicine needs of the schools' student athletes, while at the same time furthering their education with a Master's Degree in Kinesiology.

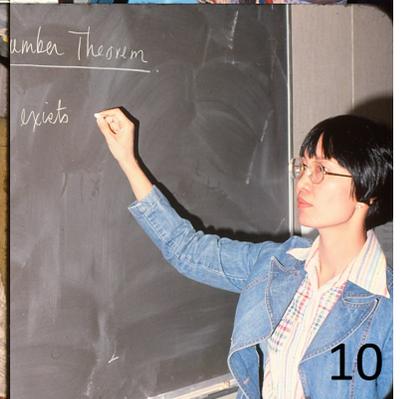
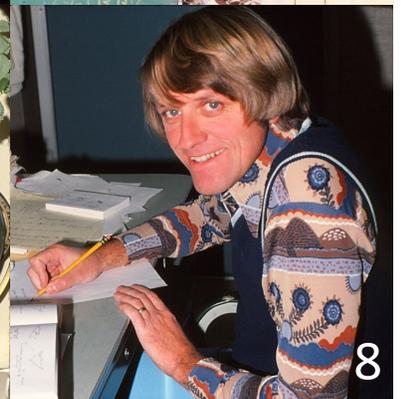
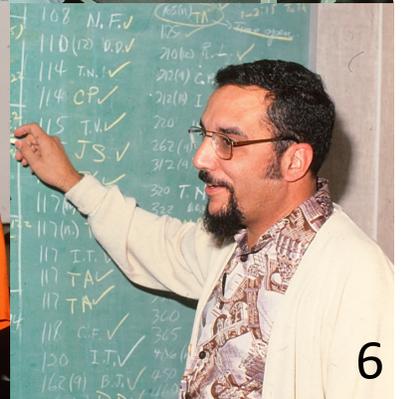
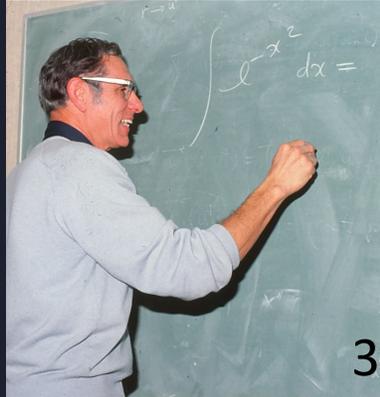
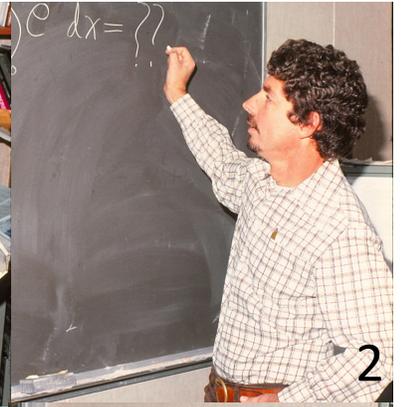
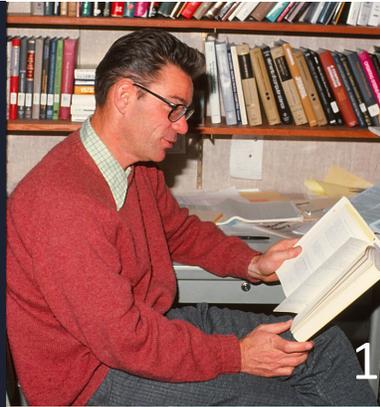
Stensvold received this award and scholarship in acknowledgement of her exceptional contributions as the first ever certified athletic trainer at Petaluma High School. This year, the new Athletic Trainer -Master's Degree partnership has brought certified athletic trainers to three area high schools that have never had the services of an ATC: Maria Carrillo, Montgomery and Santa Rosa High.

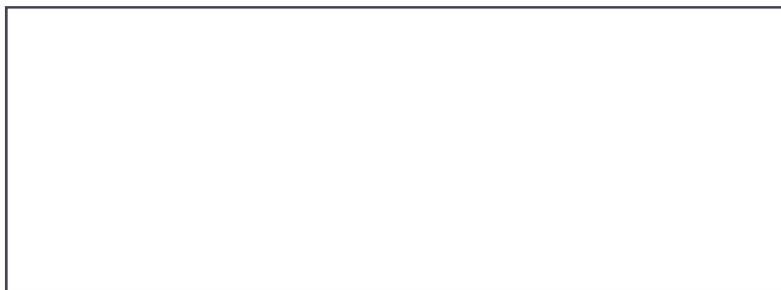


Danielle Stensvold, ATC.

Blast from the Past: can you name these math professors?

Answers on reverse.





Hi, my name is...

Sonoma State  
University



Dr. Lobo



Congratulations to Amandeep Gill, Physics & Astronomy major, whose submission was selected as the new name for SST's Lobo! Please say hello to Dr. Lobo!

### Blast from the Past: answers

1. Dr. Tom Nelson
2. Dr. Bill Barnier
3. Dr. Don Duncan
4. Dr. Charles Phillips
5. Dr. Norm Feldman
6. Dr. Clem Falbo
7. Dr. Rick Luttmann
8. Dr. Tom Volk
9. Dr. Bob Johnson
10. Dr. Jean Bee Chan