

#### Dean's Message — Spring 2017

As I look outside my window, there is a gloomy and steady rain falling, which is in great contrast to the energy inside the School of Science and Technology (SST). We are mid-way through our Spring 2017 semester and we have lots to share with you.

In this issue you will learn about efforts to improve student success, support faculty and staff excellence, and build community inside and outside of SST. Several SST initiatives—including the Women in Tech initiative—exemplify our commitment to increasing diversity and inclusivity. Our supporters, including donors and volunteers, share our vision and help us to move forward.

President Judy Sakaki has been listening to stakeholders, taking stock of campus assets, and identifying opportunities for growth and distinction. We look forward to celebrating President Sakaki's investiture on Thursday, April 20 and invite you to be part of the planned mini-conference, ceremony and celebration. Watch the SSU website for details and plan to join us.

The SST Science Symposium is our school's biggest event of the year. This has grown into a remarkable showcase of student scholarship. Student presenters and symposium participants fill the Student Center Ballroom with lively conversations of science and technology. And, I must give a special mention

to the many nursing and kinesiology scholars whose impressive work seeks to improve the health and wellbeing of all of us. The 5th Annual Science Symposium is on Wednesday, May 3, 4-6 pm—hope you will come!

With Commencement ceremonies approaching, our senior class is more busy than ever as they advance their senior capstone projects, prepare job and graduate school dossiers, and imagine their lives and careers after graduation. This graduating class will have a new Commencement experience as we move to School-based ceremonies in Weill Hall at the Green Music Center. We are looking forward to recognizing our graduates and celebrating their achievement with their family and friends on Saturday, May 20 at 1 pm. With the back of Weill Hall open to the lawns, there is plenty of room for all.

It's an exciting time to be a part of the School of Science & Technology. I am proud of our accomplishments and look forward to educating the next generation, driven by our values, fueled by our excellent faculty and staff, and propelled forward by our engaged supporters, alumni, and friends.

Wishing you a wonderful spring!

Lynn Stauffer, Dean  
School of Science & Technology

# Galbreath Spring Activities

With over 70 inches of rain this season, the Center for Environmental Inquiry's [Galbreath Wildlands Preserve](#) in southern Mendocino County is looking forward to a rejuvenating spring. In addition to welcoming back classes and researchers from campus, the Preserve's new Curiosity Corps is planning a series of spring and summer one-day workshops. All are free and open to students, staff, and faculty. We need to manage our numbers, however, so please make a reservation if you plan to join us.

## Pond Ecology – March 11 and April 15

In partnership with [Anderson Valley Land Trust \(AVLT\)](#), the Center is hosting a two-part series on pond ecology led by Kate Marianchild, author of *Secrets of the Oak Woodlands*. RSVP to [avlt@mcn.org](mailto:avlt@mcn.org).

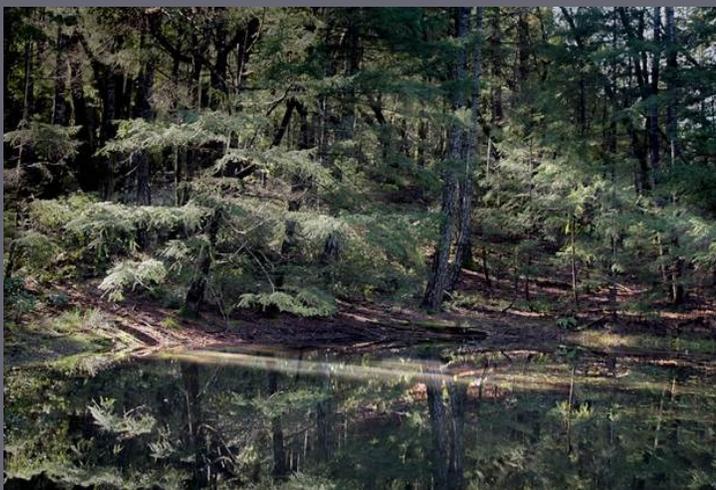
- Pond Ecology Part One will be in Boonville on March 11 from 3:00 to 5:00 pm.
- Pond Ecology Part Two will be at the Galbreath Preserve Wood Duck Pond on April 15 from 10:00 am to 1:00 pm.

## Wildflower Walk – May 6

Also with AVLT, we are hosting a Wildflower Walk on May 6 at the Galbreath Preserve, probably in the morning. Details to follow. RSVP to [avlt@mcn.org](mailto:avlt@mcn.org).

## Birds – May TBD

A final spring activity will be a bird study on the Preserve designed by experts from the [Peregrine Audubon](#) and [Mendocino Coast Audubon](#). It will resemble the fabled [Christmas Bird Count](#) and may be done on a continual schedule through the year. Details are in the works on this one, too, but it will probably happen in early May. RSVP to Margot Rawlins at [margot.rawlins@sonoma.edu](mailto:margot.rawlins@sonoma.edu).



Wood Duck Pond at SSU's Galbreath Wildlands Preserve. Photo by Charlie Judson.

# NoCal UMC 2017

Sonoma State will once again host the Northern California Undergraduate Mathematics Conference (NoCal UMC) in Spring 2017. The conference was established at Sonoma State University in 2005 by Drs. Brigitte Lahme, Jerry Morris, and Izabela Kanaana. With the help of an initial NSF grant, the conference ran for five years at SSU before rotating among other nearby hosting institutions. It returns home this year on Saturday, March 25.



Francis Su



Cornelia Van Cott

This conference provides undergraduate mathematics students the opportunity to give and/or attend 15-minute presentations about projects from a wide range of mathematical and statistical fields. These projects can include undergraduate research projects, independent study projects, or any other work they are doing that goes beyond the standard course curriculum. The conference will include two invited keynote talks: Francis Su, the out-

going president of the Mathematical Association of America and professor at Harvey Mudd College, will lead an interactive discussion about the culture of mathematics with a focus on equity titled, "Inclusion and Exclusion in the Math Community"; Cornelia Van Cott of the University of San Francisco will give a mathematical talk tailored to undergraduate students titled, "Crows, taxicabs, and Minkowski geometry."

This year's conference organizers encourage students and faculty from all departments to attend! You can find more information, including a link to the free registration form, at <http://bit.ly/2kamTSG>.

—Drs. Martha Byrne and Martha Shott

This spring and summer, SSU's 41-year-old observatory, operated and maintained by the Department of Physics and Astronomy, will receive some much needed renovations. The renovations will address current structural shortcomings as well as make the space more compatible with digital presentation tools. The observatory is set to re-open September 8, 2017 with a ribbon cutting ceremony, followed by the first [public viewing night](#) of the fall 2017 semester. You can read more of the details [here](#).

# MATH FEST

The Math and Stats Department will celebrate its annual Math Festival on March 29, 2017. The day will kick off with a poster and puzzle session over the lunch hour in the Darwin Lobby.

The highlight of the day will be a special colloquium talk by Margot Gerritsen, Professor and Director of the Institute for Computational and Mathematical Engineering at Stanford University, followed by the awards dinner for students and alums. The talk, titled "Mathematics Gives You Wings," will be in Darwin 103 at 4 pm and it is open to the public—all are welcome!



Margot Gerritsen

*Talk abstract:* Is it difficult to believe that linear algebra, of all subjects, is critically important and downright beautiful? In this talk I will discuss the ways in which linear algebra is at the very core of science and engineering, and is foundational to hot areas such as data science. Did you know, for example, that the algorithm that started Google is nothing but an eigenvalue problem? Did you know that machine learning needs orthogonal decompositions and that many programs that recommend movies or books (or people!) you might like are really just big matrix completion problems?

**2017 Science Symposium**  
Part of SSU Symposium on Research and Creativity  
May 3, 2017  
Student Center Ballroom  
[www.sonoma.edu/scitech/symposium](http://www.sonoma.edu/scitech/symposium)

**Program:**

- 4-6 pm Poster Session and Reception
- 6 pm Awards Presentation

**Presenter Registration:**  
Go to:  
[www.sonoma.edu/scitech/symposium](http://www.sonoma.edu/scitech/symposium)

1. Pre-register by April 15 (project title only)
2. Register by April 21 and submit an ABSTRACT to qualify for AWARDS and receive a FREE t-shirt

The Symposium is open to all students, faculty, staff and community members

The symposium features a poster session showcasing the scholarship and achievements of students in the *School of Science and Technology* as well as collaborations across disciplines and with community partners as part of the WATERS Collaborative

SONOMA STATE UNIVERSITY School of Science and Technology WATERS Collaborative

# WEEK 333

Geek Week is an event supported by the math and science clubs of Sonoma State University to bring together and unite the geeks. Tabling by each club, various games, and even fundraisers occur during the week. The games are included as part of the Darwin Cup and each year's winner gets the Official Darwin Cup Trophy engraved with their club's name to display in their respective display case!

This year, Geek Week runs March 19 through 25. Club teams will participate in the following events:

March 19, 12 pm: Dodgeball – McKinley Gym in the Rec Center

March 20, 12 pm: Logics – Darwin Quad

March 21, 12 pm: Water Relay – Darwin Quad

March 22, 12 pm: Giant Jenga – Darwin Quad

March 23, 12 pm: Tug-of-War – Darwin Quad

March 24, 12 pm: Egg Drop – Darwin Quad

March 25, 6 pm: Laser Tag – Laser Tag of Santa Rosa



# SST in the Community

The Chemistry Club at Sonoma State University regularly volunteers in the community to provide hands-on science opportunities to elementary school children. On Monday, September 19, 2016, the Chemistry Club went to Proctor Terrace Elementary in Santa Rosa for "Science Night". They invited kids from K-3<sup>rd</sup> grade to participate in chemistry experiments. Parents, educators, and kids had a great time and really appreciated the opportunity to have a night of science.

"Science Night was a hit! So fun! We got to talk about the different types of matter, the different types of science and what they study, and a few of the chemical reactions we saw on our walk home. Thank you so much to whoever planned tonight's event. And thank you also to Sonoma State and the [SRJC] for lending us a few scientists!" exclaimed a parent.

Other parents echoed the same sentiment: "Such a fun event, way cool!"; "Very kind of you all to donate your time and resources"; "So fun, kids loved it."



A young scientist experiences the "leaky faucet" (dry ice bubbles)



For a second year, the SSU Society of Physics Students (SPS) chapter, with equipment provided by Steven Anderson of the Physics and Astronomy Department, performed geometric optics demonstrations for local teacher and SSU alum Ryan Kurada's class at University Elementary in Rohnert Park. Each year, Kurada's students do light projects which are presented at an exhibit attended by parents. This year, SPS provided demonstrations of concave and convex mirrors, a mirascope, class II laser pointers, and Justin Hoijer (pictured above) presented the Michelson interferometer.

The demonstrations were a huge hit with the students and parents. Kurada writes that the demonstrations "helped inspire and pique children's curiosity about light," and "the parents were happy to see how SSU contributed to [their] projects." He hopes to make this an annual event and continued collaboration with SPS and the Physics and Astronomy Department.



Amir Arshi, Patricia De La Torre, Howie Tomson, Annika Holms, Valeria Suarez, and Brandon Jolly. Not shown but major contributors: Liridona Leti (photographer) and Josh Salem.





During the Fall 2016 semester, Dr. Kurt Sollanek from the Department of Kinesiology helped to initiate a free community-based group fitness program called “3 WINS Fitness.” The program consists of SSU Kinesiology students who run a 1 hour long group fitness class 3 days per week at a local park in Rohnert Park.

To accomplish this, the SSU students bring out an array of equipment (yoga mats, medicine balls, battle ropes, etc.) to the park and they instruct the community participants on proper exercise instruction while leading them through the exercise class.

It is important to note that this program (3 WINS Fitness) started back in 2011 in Southern California. During that year, faculty members at California State University Northridge (CSUN) started a free fitness program that was offered to citizens in the San Fernando City area. This project was initially called “100 Citizens” and it heavily involved the Kinesiology undergraduate students at CSUN with the purpose of helping them to understand the value of their education for improving the public’s health. The intention was to show the students how they could create a free, sustainable and replicable program that was based on the philosophy of seeking a minimum of 3 wins in all endeavors: student benefit, participant fitness, and community health.

In 2016, the program officially changed its name to “3 WINS Fitness” and has proven itself sustainable, with the program expanding to 4 public parks in the San Fernando Valley area serving over 200 participants, and 3 programs at sister universities in San Francisco, Stanislaus County, and Los Angeles; all are free for participants with no external funding. Importantly, during the Spring 2017 semester, various CSU institutions started implementing this same program: CSU San Bernardino, CSU Long Beach, CSU Bakersfield, CSU Chico, CSU Monterey Bay, Cal Poly San Luis Obispo, and SSU.

Here at SSU, the program is being run by a core of undergraduate Kinesiology students with assistance from a CSUN graduate student, who is helping to train the SSU students. The undergraduate students have to complete a series of weekend training sessions before they can help in the program. Currently, the tentative initiation date is mid-March 2017. Dr. Sollanek and the rest of the Kinesiology Department faculty are excited to see the enthusiasm displayed by the undergraduate students thus far. At first, this free community-based fitness program will be implemented at just one location in Rohnert Park (to be determined). Based upon the initial results, Dr. Sollanek would like to see this program expand into other parks in the local area as well (e.g., Santa Rosa, Petaluma, etc.). This program holds great promise for increasing the level of physical activity in the community as well as helping us (SSU) become more involved in our local community. Currently, the SSU students have identified our 3 wins as: student development, community participation/community health, and University recognition. As the program gets implemented, more details will be disseminated to the SSU community for those who want to get involved.

—Dr. Kurt Sollanek



## Engineering Professional Day

The Department of Engineering Science hosted its first ever Engineering Professional Day on Saturday, November 19, 2016. The event was designed to have students interact with a panel of professional engineers from the industry. The panel spoke about their experiences in the workforce and students had a chance to ask questions and receive feedback.

The five guest panelists were Leticia Martinez from PG&E, Manuel Vera from MUNI, Monica Harrison from Keysight, Neveia Chappell from Parker Hannifin, and Paulina Brassington. Additionally, Martinez and Vera are members of the Society of Hispanic Professional Engineers; Harrison and Chappell are members of the Society of Women Engineers. The panel stressed the importance of being active in a professional society, where many support and networking opportunities are offered.

Over 25 students participated in the event, with majors ranging from Electrical Engineering, Early Childhood Studies, Biology, and Undeclared.

“This was a great opportunity for me to learn more about what engineers experience on a day to day basis,” said an engineering student.

After the panel, students participated in one of the two parallel one-hour workshops that were offered. Harrison from Keysight gave a workshop titled “Professional Networking with Social Media,” where students learned the importance of online presence and tips on how to successfully connect with potential employers. Dr. Carolyn Peruta, Director of MESA at SSU, led the other workshop, “Make Your Own Circuit,” where students learned how to build a small flashing LED circuit.

“I learned a lot from this [networking] workshop that I didn’t know before,” said one student.

“Thanks for having an event like this available to students.”

For any comments or questions please contact Dr. Sara Kassis: [sara.kassis@sonoma.edu](mailto:sara.kassis@sonoma.edu).



# North Bay Science Discovery Day



What is a watershed? Which organisms inhabit our watershed in Sonoma County? How can you reduce your impact and water use? These were some of the questions that Sonoma State University students helped families explore at last fall's [North Bay Science Discovery Day](#). This incredible free event brings many thousands of children and their families together with, as event organizer Carol Bennett states, "a primary objective of getting kids excited about STEM." The School of Science and Technology has created an interactive exhibit at the event every year since its inception in 2011, this year joining forces with several groups on campus including Biodiversity Outreach, The Biology Club, students in the Biology 320 course, and the Center for Environmental Inquiry.

Community members this year took a "walk through the watershed," engaging with ecosystems one would find on a journey from the headwaters out to the ocean. At the first stop, participants had a chance to hold live insects, learn about oak galls and the wasps that live inside, and examine owl pellets under a microscope in a display about the oak woodland habitat. They learned about graduate student Kandis Gilmore's research on pollinators in the vernal pool habitat; played a game about birds in the marshland; made pet rocks while pondering what shape and color say about their origin; gasped at a rattlesnake skeleton and preserved gray fox in the coastal prairie; and felt the soft fur of an otter pelt in the estuary. Lastly, they learned about their own water "footprint" and why it's important to pay attention to how we influence nature.

This year's event drew over 15,000 people, and SST's exhibit was praised by event staff. Organiz-

er Lyman Black applauded SST's work saying, "I stopped by the booth a few times during the day. There was always enough of a crowd that I didn't want to distract any of you from interacting with the kids. That is a good sign that the booth was engaging the target audience and that the content was compelling. From my point of view, the booth design and staff seemed inviting and energetic, so I can't add much for improvement."

Experiences such as these benefit not only the Discovery Day visitors, but also the SSU students who are teaching. Concepts learned in the classroom are reinforced through the science communication process. Biology student Kristin Dinelli reported, "At one station at the North Bay Science Discovery Day, we demonstrated to the children the concept of adaptation through an activity titled Bird Feet Matching Game... The different adaptations in the birds living in the local ecosystems of Laguna de Santa Rosa can be compared to the adaptations of the anoles which I learned about in my Biology 320 course."

Another upside? People had a blast! Biodiversity Outreach staff member Ivy Burge commented, "Everyone who stopped by seemed to like it a lot and complimented them... This was a lot of fun to work." Kerry Winger, a graduate student in the Biology Department and Coordinator for the Biodiversity Outreach Program, remarked "it's always rewarding to see a child purport to be 'afraid of bugs,' but then 5 minutes later hold a darkling beetle, walking stick, or tarantula. Watching transformations occur in both the children and the student workers, while scientific knowledge is getting out there into the community, is really what it's all about."

For more information on activities of the Biodiversity Outreach Program and Biology Club, visit the [Biology Department Facebook page](#) and [Biology Club Facebook page](#). For the Center for Environmental Inquiry, visit their [webpage](#).

—Kerry Winger



Kerry Winger, Kristin Dinelli, Veronica Nabor, Garrett Shipway, Ivy Burge, Samantha Steen, Julianne Bradbury, and Jazmin Morales.



The Engineering students at Sonoma State University also participated in the North Bay Science Discovery Day this past fall. Abe Palmerin, David Story, Leeana Vargas and Cristin Faria, representing the Engineering Club and Society of Women Engineerings (SWE) at SSU, presented several exciting hands-on activities for participating students. These activities included building simple electrical circuits, demonstrations on how to make Apps for smart phones using App Inventor, and how to use cell phones to control robots.

"We are excited to be a part of this exhibition. This is a great opportunity for our students to reach out and interact with young kids interested in STEM," points out Dr. Sara Kassis, SWE club faculty advisor.

"It was great seeing the kids being so interested and engaged in building simple circuits and connecting lights, batteries, and motors together; they just did not want to leave!" noted Shahram Marivani, an SSU lecturer who maned the circuit-building table non-stop for six hours!

"The need for engineering education in the North Bay area is growing and many local high-tech companies are recognizing a shortage of engineers and other high-technology employees in the area," says Dr. Farid Farahmand, Engineering Science Department Chair. "At Sonoma State University we are trying to highlight the importance of Technology and Engineering education in STEM and attract more students to the engineering fields."

*Photos above courtesy of Shahram Marivani.*

# ES Students Win Major Innovation Award

SSU students and faculty from biology, chemistry, and engineering presented at the 29<sup>th</sup> [CSU Annual Biotechnology Symposium](#), sponsored by [CSUPERB](#), which took place January 5 through 7 in Santa Clara. At the Symposium, engineering students Michael Vargas, Nader Srouji, and Jose Avila participated in the I-Corps Challenge where they presented two prototypes, both named SpecDetect, which detect and reduce the risk of kidney disease. After making it to the final round of the challenge, with only a handful of other teams, the group received the I-Corps Special Recognition Award for their SpecDetect prototypes.

The team initially created a device that uses spectroscopy to test urine for excess albumin. The device, which is intended for at-home use, had strong support from doctors but not from patients. Vargas's own brother, who recovered from kidney disease, even said he wouldn't use it. The team was quite surprised by this and decided to develop a different approach.

After talking with personal trainers about ways to motivate patients to take better care of themselves, they decided to look at prevention rather than just detection. Thus, the second SpecDetect was created. The device is actually an infrared camera that shows active muscles and heart rate in real-time during a workout. This allows trainers to better communicate proper form and technique, which in turn motivates clients and creates a more efficient workout. Not only does this help trainers, but it helps their target group of those at risk for kidney disease maintain better overall health and reduce the risk of conditions that can lead to kidney disease.

By winning the I-Corps Special Recognition Award, the team is now eligible to apply for a \$50,000 NSF grant to fully develop their product.



Back row: CSU I-Corps evaluators Craig Pritsky, Elise Brownell, Luanne Meyer, and David Hackadon. Front row: Nader Srouji, Michael Vargas, and Jose Avila.



Is there much physics in cooking? Surprisingly, the answer is a resounding yes.

Physics is a discipline that emphasizes problem solving and figuring out how things work. It is not always about equations, fundamental discoveries, or mysteries of the universe. *PHYS 102: Conceptual Physics Laboratory* is a unique course in its ability to introduce physics concepts in innovative ways. By utilizing a contemporary theme as a focus, students get a fresh take on one of the oldest disciplines. Previous offerings have included the *Physics of Toys* and the *Physics of Martial Arts*. However, for the first time, Dr. So Young Han is teaching it as *Physics in the Kitchens*. The title is a slight play on words as it focuses on cooking while utilizing the SSU dining area “The Kitchens”.

By collaborating with culinary services and Executive Chef Alex Purroy, physics is strangely becoming quite delicious. Making delicate blend patterns with butternut squash and roasted pepper soups or creating the perfect-layered Arnold Palmer all require mastery of density and basic physics. Instead of just learning about heat transfer methods of convection, conduction, or radiation, they create separate egg dishes based on each method. Executive Chef Alex Purroy amazes students with demonstrations of fine cuisine cooking. Sabayon, hollandaise sauce, and salad dressings are all on the menu when studying emulsions. Working as a team, Dr. Han and Chef Purroy provide students a unique opportunity to explore physics concepts under real world conditions.

—Dr. Jeremy Qualls

# X S E D E

Professor Mark Perri, Department of Chemistry, has been named the Sonoma State “Campus Champion” for the National Science Foundation’s [XSEDE](#) supercomputer network. As the Campus Champion, Perri has time allocations on all of NSF’s supercomputing and visualization resources. These allocations are for SSU use; any faculty can request computer time in order to run calculations. There is installed software from most disciplines, and other software can be installed by the user. The idea for the allocation is to provide easy access to these resources so that faculty can gain experience using them. Once a faculty member has some experience with the resource

they will be able to write an application for a startup allocation to use the resources for their research. If anyone is interested in using computer time, email Mark Perri: [mark.perri@sonoma.edu](mailto:mark.perri@sonoma.edu).

# Slàinte mhath!

Professor Tom Targett will be offering a new course titled "PHYS 396: Scotch Whisky & Distilling" over summer 2017 through the School of Extended and International Education.

This course focuses on the distilling and production of Scotch whisky, and will additionally review its history, culture, and business significance. Students will become familiar with the physical processes of distillation from grain to glass and learn how the culture

of Scotland’s five main whisky-producing regions has influenced the characters of their whisky. The lecture series will also include a demonstration of distilling and a tour of the Sonoma County Distilling facility in Rohnert Park.

# Hydration Study

In December 2016, Dr. Kurt Sollanek from the Department of Kinesiology received funding from Entrinsic Health Solutions, LLC (Norwood, Massachusetts) to conduct a study investigating how well certain beverages can hydrate individuals. Recently, a metric was created to rank beverages based upon their hydrating potential with plain water being the baseline. This metric is called the “beverage hydration index” (BHI). Essentially, beverages that cause greater fluid retention are given higher BHI scores. For example, beverages with carbohydrates and protein, such as milk and orange juice, are retained better than beverages with alcohol (e.g., beer). Therefore, milk and orange juice have a higher BHI than beer.

Another beverage that demonstrated a higher BHI was an oral rehydration solution (ORS). ORS are used in clinical situations to help patients recover from dehydration. Commonly used ORS are Gatorade® and Pedialyte®. For those who do not know, one of the main ingredients in many of these beverages is sugar, which has been shown to enhance the rehydration process when combined with fluid and electrolytes (e.g., salt and potassium). This is a good thing. However, there are some clinical populations that are unable to process sugar, which makes it difficult for us to find beverages to help keep them hydrated or help them recover from dehydration. For example, one of the common side effects that cancer patients undergoing treatment (i.e., chemotherapy and/or radiation) experience is gastrointestinal distress and subsequent diarrhea, which can lead to severe dehydration. Moreover, it turns out that giving these patients sugar containing beverages exacerbates their symptoms, thus making their dehydration worse. Interestingly, Entrinsic Health Solutions, LLC has created a sugar-free beverage containing a special mixture of amino acids and electrolytes, called Enterade®. This beverage has been well tolerated by cancer patients and seems to help enhance the hydration status of this clinical population. Therefore, Dr. Sollanek and his students, with support from the company, will seek to further characterize Enterade® and other ORS (Gatorade® and Pedialyte®) by determining the BHI of these beverages. Dr.

Sollanek thinks that this beverage holds great promise since there are other clinical populations that seek to minimize their consumption of sugar during their rehydration process (e.g., diabetic patients, weight loss patients, etc.). Dr. Sollanek will be collecting data on this project during the Spring 2017 semester. —Dr. Kurt Sollanek



# Need a Nurse?



Molly Andich



Jotham Gikuhi

We don't frequently think about nurses until we need one. But the Healthcare Foundation of Northern Sonoma County thinks about them all the time. Their donors are committed to education and invest in local nurses and doctors—keeping quality

healthcare close to home. For the fourth year, the Healthcare Foundation has helped Sonoma State's master's level nursing students—many of whom are working parents—with significant scholarships to help offset the cost of tuition. This year's scholarship recipients are Family Nurse Practitioner (FNP) students Molly Andich and Jotham Gikuhi.

SSU's program graduates top-notch FNPs who serve patients throughout Sonoma County, California, and beyond. FNPs are registered nurses who go on to receive advanced education and clinical training that permits them to diagnose and treat acute and chronic conditions in the primary care setting with a focus on prevention and health maintenance.

“I would like to thank the Healthcare Foundation of Northern Sonoma County and Sonoma State University FNP program faculty for availing this scholarship to FNP students. Thank you to all donors who made this contribution possible,” said Gikuhi, Nursing M.S. expected 2017. Both Andrich and Gikuhi hope to work with the Santa Rosa Community Health Center when they graduate.

—Michelle Covington



Barbara Grasseschi, board chair; Debbie Mason, CEO; Molly Andich; and Ariel Kelley, board member and fund development chair.

Several Nursing students attended the **California Nursing Student Association (CNSA) Annual Convention** in Visalia, CA on October 7 through 9.

At the convention, Shauna Fassino, senior nursing student, ran for a CNSA California State Board position. While Fassino serves as president of the SSU Nursing Club, an official CNSA chapter, she wanted to do more for advancing nursing education and the profession of nursing. She was elected by the delegates at the convention for the position of Community Health Director and will serve a one year term. In addition to being elected to her new position, Fassino received an Association of California Nurse Leaders (ACNL) scholarship at the convention

Fassino will also be representing SSU at the National Student Nursing Association (NSNA) Convention in Dallas, Texas. Professor Rachel Napoli, Department of Nursing, will also be attending the convention along with other nursing students. At the convention, Napoli will be participating in the Consultant/Advisor Certificate Program provided by NSNA to better serve students.



**The SSU Society of Physics Students (SPS)** group has won outstanding chapter status for a second year in a row. This is the highest level of distinction given to the top 10% of SPS chapters. The status is in recognition of their exceptional levels of service to the community, such as demonstrations at local schools, and support of community STEM events. The group also secured grants to conduct these outreach activities. On campus, the SPS chapter conducts free tutoring for physics classes and peer-to-peer skills lab instruction.



# Alumni



**Matea Alvarado and Fabian Santiago** are second year Ph.D. students at UC Merced in the Applied Mathematics program. Alvarado is working on modeling fluid-elastic material interactions,

which will later be applied to modeling fluid flow around pulsing soft corals. The primary focus of Santiago's research is the development of models to better understand antibiotic resistance. While pursuing their doctorates, Alvarado and Santiago are working as research and teaching assistants at UC Merced.



Alvarado and Santiago both graduated (with distinction) from the SSU Math and Stats department with BS degrees in Applied Mathematics in spring 2015. During their time at SSU they both participated in a variety of research experiences.

Alvarado did a summer research program and she was part of the McNair's Scholars program working with Martha Shott in the Math and Stats Department on modeling the dosage of cancer drugs. She presented her work at several conferences, including the Pi Mu Epsilon Applied Math conference in fall 2014 and the SSU Science Symposium in spring 2015. Santiago was part of a research group led by Suzanne Rivoire in the Computer Science department. The group published several articles about their research on energy efficiency in high performance computing.

Alvarado is originally from Calistoga and Santiago is from Windsor.

Alvarado and Santiago recommend that undergraduates thinking about going to a Ph.D. program get involved in research early on. Alvarado says, "Apply to Research Experiences for Undergraduates (REUs) for the summer and don't be afraid to apply to REUs/graduate programs that you don't think you'll get into."

Santiago adds, "While at SSU, I found that many professors had projects that they were working on but Research Experience for Undergraduates (REU) programs are also a great place to start. Undergraduate research is a great way to both find an area of research that interests you and a better way to decide what graduate schools to apply to. I believe that this is also the best way to prepare for graduate school."



Drs. Austin Griffith and Heather Anderson with their daughter, Avery, and family pup

Alumni **Austin Griffith** and **Heather Anderson** were both members of the [Health Professions Advisory Program](#) while at SSU in order to prepare for applying to dental school. After completing dental school at NYU College of Dentistry, they returned to Sonoma County and are part owners at local practices. Anderson writes:

*I have great memories of my time at SSU. After receiving my bachelor's in psychology from UC Berkeley, I found myself waiting tables at a local restaurant and wondering what the next step should be. I met Austin while working there and long story short, we both decided to apply to dental school together. He was majoring in biology at SSU and I decided to take the pre-requisites for dental school along with him. The application process was arduous, but the HPAC committee prepped us well with the interview process and ultimately aided in our acceptance with outstanding letters of recommendation. I can't tell you how much I appreciated the practice interview when I was sitting there with one of the professors from NYU for the real deal. Yes, there was anxious giggling, but I got through it!*

*We both were accepted to NYU College of Dentistry and got married during our third year there. We thought if we could stand each other after 4 years of being in the same clinic and living in a 400 square foot apartment then we could get through anything! Dental school was tough but I believe our courses at SSU prepared us very well. I remember my classmates feeling completely lost during Immunology and being thankful that we had Dr. Seymor whose class was challenging. We both enjoyed really getting to know our professors, even going out for the occasional meal; one of the many advantages of smaller class sizes at SSU. I still keep in touch with several of my professors 10 years later.*

*After dental school, we both found great opportunities to become part owners at group practices: me at Fountaingrove Dentistry and Austin at Hillcrest Dental here in Sonoma County. We both enjoy our profession. It's so rewarding to put otherwise anxious patients at ease and improve people's smiles.*

*We recently welcomed our first child, Avery Jane Griffith on September 6, 2016. Her favorite things to do are making monster noises in front of the mirror and playing with her stuffed Elmo.*



Dean Lynn Stauffer getting a check-up by Dr. Griffith at Hillcrest Dental



Omar Alvarez Tinajero, far left

After graduating in May 2016, **Omar Alvarez Tinajero** (B.S. Electrical Engineering) started an internship at Okinawa Institute for Science and Technology (OIST) in Japan. Alvarez Tinajero will be as-

sisting the research team at OIST to develop the first remote power management system for Microbial Fuel Cells (MFCs) systems. The MFCs can extract electrical energy from winery wastewater while bringing the effluent water to a quality sufficient for use in irrigation. Alvarez Tinajero worked with Drs. Michael Cohen and Farid Farahmand to [develop and deploy an MFC at D'Argenzio winery](#) in Santa Rosa.



## Women In Tech (WIT)

As a response to the underrepresented number of female students in technology, the *Women In Tech* (WIT) initiative was created to support and encourage female students in computer science, engineering, and physics. Nationally, females only make up around 18% of the total graduating population in these fields. Even though SSU has 60% female students in the total student body, it only has female representation of around 20% for physics, 15% for computer science, and 11% for engineering.

The goal of the group is to help build community among the students allowing them to identify with being a female in a technology discipline, to offer support to these students, and to help build their confidence. Part of the initiative is to provide workshops and host events for female tech students at SSU. In the fall, Dr. Sara Kassis, WIT Director, organized the Create-An-App Workshop and hosted gatherings for the students. This spring, along with more gatherings and Create-An-App workshops, Dr. Kassis is forming a WIT team to compete in the 2017 California Solar Regatta and showing a viewing of the documentary *CODE: Debugging the Gender Gap* highlighting the lack of females in Computer Science. For a complete list of events, please see our [website](#).

### Create-An-App Workshop

Electrical Engineering student Cristin Faria and Computer Science students Deahja Powell and Tobi Otepola-Bello participated in leading the Create-An-App Workshop on Friday, February 17, 2017. This outreach event is the second of multiple sessions being offered at Sonoma State this semester due to popular demand following the first workshop's success last term.

The workshop was fully run by the female students and was designed to allow anyone to create a mobile application for Androids using the MIT App Inventor software, even with no prior programming experience. The one-hour event was open to anyone from SSU and ran at full capacity with 16 participants, including SSU faculty members. Participants successfully created a Whack-A-Mole app, where players earn points if they tap on the moving mole, some even customizing their app.

"I really enjoyed the app class today. Thank you for putting the whole thing together! It was wonderful to see those smart young women running a computer science APP class!" said one of the faculty attendees.

### 2017 California Solar Regatta

Women In Tech will be representing Sonoma State University in the [2017 California Solar Regatta](#) boat race, being held in Sacramento on May 5 and 6. The students will design and modify a boat using only solar energy and compete against other students from local universities and colleges in the collegiate competition. All are welcome to attend the race and watch as our students compete for the win!

For any comments or questions about WIT, please contact Dr. Sara Kassis at [sara.kassis@sonoma.edu](mailto:sara.kassis@sonoma.edu).

The WIT initiative is made possible by the generous support of donors.

## Adam Savage at the GMC

Professor Jeremy Qualls moderated a talk with Adam Savage, co-host of the popular show *MythBusters* on the Discovery Channel, this past October in Weill Hall. The event started with a conversation between Qualls and Savage centered on science, Makerspaces and the Maker Movement, and Savage's unique expertise—largely due to a career that has morphed into a mélange of theater, art, and science.

Savage then demonstrated his juggling abilities to impart the audience with his philosophy on failure. When Savage was younger, he took up juggling. He wasn't very good at first, as few are, but spent hours every day practicing. Oftentimes, whatever trick he was trying to perfect just wouldn't work, and his juggling balls would thump endlessly on his bedroom floor. But, at night, he would think on it, running the trick through his head, and the next day it would work—or work better. He now realizes that he was learning to learn, not just learning to juggle, and that failure was an essential part of learning. And, as they say in *MythBusters*, failure is always and option!

After inviting four students from the audience to perform the four person chair trick, Savage conducted a Q&A with the audience which included SSU faculty, staff, students, alumni, donors, and members of the community.

*Pictured above: Adam Savage with alumni and CS lecturers Brian McWilliams and Kristi Yost.*

