

UPCOMING EVENTS/ANNOUNCEMENTS



Welcome to all new and returning students

We hope that all have enjoyed a fun and refreshing summer and are ready for a new school year. Whether you are returning or beginning your journey at SCU, we wish you the best of luck with your classes this quarter and hope that if you have any questions you will stop by the Department office (238 Alumni Science).

CAMPUS NEWS

Two Biology Students Received the Robert Noyce Teacher Scholarship



Christine Szelong

Congratulations to Gerson Sandoval and Christine Szelong, two students majoring in biology who have received the Robert Noyce Teacher Scholarship. This program is offered to committed students who are preparing for a career in teaching middle or high school mathematics or science. The scholarship allows for Gerson and Christine to obtain a teaching credential from the SCU Department of Education and includes a commitment of at least two years of teaching in high-need school districts in the Santa Clara area. We wish the best for these two students.



Gerson Sandoval

Biology Professor Receives Research Award

The University presents two special awards for scholarly or creative excellence each year. The Award for Recent Achievement in Scholarship recognizes a tenured faculty member or senior lecturer whose scholarly or creative work over the previous five years at Santa Clara University represents a major contribution to a field of knowledge or to the arts.

The recipient of the Award for Recent Achievement in Scholarship is Michelle Marvier of the Department of Biology and the Environmental Studies Institute. Michelle's work has allowed for development of scientific analysis that is capable of informing the public on sustainability policies and issues, while concurrently contributing to the body of scientific knowledge. Her leading role in the development of SCU Environmental Studies Institute also makes her a main proponent in transforming SCU into a more just and sustainable university.



Michelle on a class field trip north of Santa Cruz (photo: E. C. Rooks)

DEPARTMENT NEWS

Global Health and Social Justice Events Fall 2009

This quarter Public Health Sciences is hosting several events concerning public health issues in our world. Everyone is welcome and encouraged to attend these events

Date	Event	Host	Description	Place and Time
Tuesday, October 13th	Advances in Vaccines for Global Health Threats	Dr. Jay Levy and Dr. Duncan Steele	Discussion on new vaccines for meningitis, bacterial pneumonia and HINI as well as research on malaria and HIV vaccines	3:30-5:00 p.m., CSTS Symposium
Tuesday, October 13 th - November 20 th	On the Same Map: A Photo Exhibition Celebrating Partners in Health's 20 Years of Health and Social Justice	Sponsored by the Partners in Health non-profit organization	Moving and beautiful photo exhibition depicting the clinics and communities where the Partners in Health organization have been working to fight AIDS, tuberculosis, hunger, poverty, and violence.	2 nd Floor of the Harrington Learning Commons, Sobrato Technology Center, and Orradre Library
Friday, October 16	Panel Discussion for Grand Reunion Weekend: Engaging Santa Clara for Global Health	SCU faculty, staff, students, and alumni	Reflection on the Santa Clara community's actions to promote global health, and discuss how to get involved	4-5:30 Saint Clare Room
Thursday, October 29 th	Book of the quarter discussion: <u>Mountains Beyond Mountains</u> , by Tracy Kidder	SCU community	Discussion on the powerful portrait of Dr. Paul Farmer, the roots and consequences of poverty and disease, and the moral imperative to improve the health of all people, regardless of geography, ethnicity, and socioeconomic status	7-8:30 p.m., Saint Clare Room
Friday, November 20 th	CSTS Conference: Change that Counts	Laureates from the Tech Awards for Technology Benefiting Humanity,	Measuring the impact of humanitarian technologies and socially-oriented business ventures	Time TBA, Nobili Hall

Summer Research at SCU

By: Allison Baker (2011) and Fernando Meza Guterrez (2011)

On a cold cloudy morning our sophomore year, sitting in a Biology 25 lecture we were jolted awake by a surprise visit. Dr. Miller, a biology professor and research mentor, entered the room and began to describe her exciting research. We were intrigued so we followed up on this short encounter. After casually meeting with her individually we learned that even as young aspiring biologists, there was a place for us in her research lab. We agreed to stay at SCU and work in the Miller lab throughout the summer. The rest is history.

Periodic Table of Elements

Legend - click to find out more...

- H - gas
- Li - solid
- Br - liquid
- Tc - synthetic
- Non-Metals
- Transition Metals
- Rare Earth Metals
- Halogens
- Alkali Metals
- Alkali Earth Metals
- Other Metals
- Inert Elements



Throughout the summer we got our first taste of real science. We learned how to take an experiment from hypothesis to results, all the while gaining problem-solving skills, perseverance, and a good amount of patience. Not only did we delve deeper into molecular biology and genetics- what we signed on for- but we were also exposed to the research of Biology and Chemistry labs at SCU. In our weekly Bio/Chem meetings we learned about the interesting research going on just down the hall and in a couple of Chemistry labs. We were also given the opportunity to present our own research in an informal setting.

After eleven weeks of intense but rewarding research, we joined our fellow undergraduate researchers for the Fourth Annual Joint Biology-Chemistry Research Symposium. We each prepared a half-hour presentation showcasing our projects for the summer. Preparing the talk gave us new insights about the details and implications of our research. In doing so we became more comfortable with explaining complex ideas to a group of faculty and students. In addition to giving our own talk, we were impressed by the variety of topics ranging from synthetic proteins to HIV and cancer research. Doesn't this sound better than your typical summer job?



Michael Hayes (2010) presented his work from his research in Dr. Suljak's Chemistry lab at the Biology-Chemistry Research Symposium (Photo: L. Miller)

FACULTY SPOTLIGHT

SCU Welcomes Dr. David Hess

By: Emily Scroggs

This year we have the pleasure of welcoming a new Assistant Professor in the Biology Department, Dr. David Hess. With a background in genetic and molecular biology and a particular focus on the yeast *Saccharomyces cerevisiae*, Dr. Hess comes to us from Princeton University with



excitement about his unique approach to research. His approach is that of using new technology to study the entire genome rather than focusing on a single protein.

I had the opportunity to interview Dr. Hess and it became immediately apparent that he has a true love for working on the genomic level. David described himself as "following this new genome revolution" which has been made possible by a dramatic increase in methods used for whole genome testing. These new methods led Dr. Hess to pursue a research path that, he explains, was not part of his original plan while working as a graduate student.

During his work, David's exposure to cutting edge technology really got him excited. The technology inspired him and as he says it made him "want to take the opportunity to use this technology and do something different". Once he did take this opportunity, he proclaims that he absolutely fell in love with it; it showed him that this was something that he really wanted to do.

Research is not all that makes Dr. Hess tick. For fun, he loves to hike and snowboard which are two additional reasons that he is excited to move out to California. He also has recently starting expanding his passion for art through his new hobby of making stain glass panels.

Besides the attraction of Santa Clara for its premier location for outdoor activities, David is attracted to Santa Clara University from an academic standpoint as a place where he can effectively balance his teaching and research. Dr. Hess says that he was lucky to have the opportunity at Princeton to do a lot of teaching and through this, discovered a love for teaching. Because of this, he was searching for a place where he could really focus on teaching. "Santa Clara has a reputation for having great students", Dr. Hess says, "and there is a focus on the students here that is unique and evident through the small class size". Hess explained that he could envision himself being a good teacher at Santa Clara. In addition to this, he has many close friends in the Bay Area who describe Santa Clara as a great place to live. He describes the combination of the ideal location and great reputation of Santa Clara as "a dream come true for me".

Coming to Santa Clara will be a different experience for Dr. Hess because it is an undergraduate institution with a different scale of research. A larger institution would be more likely to receive funding and technology for research projects but Dr. Hess is motivated to find a way to not let this fact compromise the quality of his research. As Hess says, "I think I can do a high quality of research here and I am excited to meet this challenge".

NEWS FROM THE FIELD

Global Health and Innovation Summit

By: Chris Freeburg (2011)

Biology and International Development Major

This past April, Unite for Sight sponsored the 6th annual Global Health and Innovation Summit at Yale University. Unite for Sight is a nonprofit organization that works globally to combat blindness. By engaging volunteers and financially supporting eye care services, Unite for Sight is able to support local clinics in their treatment of patients who cannot afford to pay. The 2009 Global Health and Innovation Summit gathered over 2,000 doctors, health professionals, economists, academics, and students from across the globe. The lectures, workshops, and panels highlighted the barriers currently facing the global community in the fight against disease and sickness. The Summit also exhibited various ways public health professionals have solved difficult problems by engaging various disciplines including, biology, chemistry, engineering, politics, and sociology.

The broad spectrum of professional disciplines present at the Summit created opportunities for conversation and collaboration. Keynote speaker, Al Sommer, MD and Professor and Dean Emeritus at John Hopkins Bloomberg School of Public Health, spoke of the need for a "systematic change" in the way healthcare is provided in the developing world. Sommer offered one finite example of how professionals must begin to search for answers outside the traditional medical toolbox in the fight against of blindness. Healthcare providers must work to create new methods of healthcare delivery and diagnosis so patients can be treated while they maintain a job. The luxury of insurance and benefits does not exist in the third world, so patients must be able to work as long as possible to support their families and pay for medical services. After the debilitating effects of blindness have set in, patients can no longer work and will not be able to afford medical treatment. Sommer also spoke to the desperate need to treat the effect of the Brain Drain, the emigration of professionals, including doctors, from developing countries. Sommer suggested development agencies should train cataract technicians instead of building new medical schools. These surgery technicians, who treat cases of blindness, would require a smaller investment of time and money in their education. This approach could be effective just a few years after implementation. The problems Sommer presented were not directly related to the art of cataract surgery, or the science of drugs used for post surgery. He showed that medical professionals must be creative and be educated in a cross discipline of studies.

Sommer's challenge to conference attendees was reinforced by multiple conference speakers, including New York Times columnist Nicholas Kristof, Medical Director of Partners in Health Joia Mukherjee, MD, and Special Advisor to U.N. Secretary-General Ban Ki-moon, Jeffrey Sachs, PhD. Kristof outlined the challenges of empowering women in societies where men seize all income-earning ventures. He also gave a striking example of a cross-discipline scenario in Africa where absenteeism in



Chris Freeburg spent 5 weeks this past summer working with Hands for Peacemaking Foundation, a development organization, and the Bethsheda Clinic in rural Guatemala. He is pictured with Dr. Guillermo Gonzalez.

elementary schools prevents learning. Instead of a societal problem, Kristof saw a lack of basic medicine, such as deworming kits, to keep young children healthy enough to attend school. Mukherjee spoke to the importance of walking with her Haitian and Ghanaian patients in solidarity. Such a perspective, she said, allowed her to experience the challenges facing their daily lives and helped her to understand how she could help them better. Lastly, Sachs stressed the importance of viewing challenges in global health not only as medical problems but also as environmental, economic, and gender equality problems.

The Unite for Sight Conference emphasized the importance of a multi-disciplinary education such as that offered at Santa Clara University. SCU prepares chemists who think progressively about how the drugs they engineer will be distributed and educates biologists who will engage governmental agencies and citizens in their work for a stronger, cleaner and healthier environment. Just as important, Santa Clara prepares pre-med students to view their patients with compassion and business students to engage their work with conscience. The Unite for Sight Global Health and Innovation Summit only increased my appreciation of the Jesuit education at SCU.

INTERSHIP AND GRANT INFORMATION

Internship and job opportunities are constantly being updated on our website. Visit www.scu.edu/biology and click on the "Careers and Internships" tab for more information.

Also, the Career Center homepage has added a new section specifically for students interested in careers in healthcare. Check out their website for more information: <http://www.scu.edu/careercenter/featured/HealthCare.cfm>

BIOLOGY COURSE FOR WINTER 2010

BIOL 6 Oceans ¹	BIOL 140 Let Your Life Speak: Science ¹
BIOL 19 Biology for Teachers L&L ¹	BIOL 144 Natural History of Baja
BIOL 22 Intro to Ecology and Evolution	BIOL 145 Virology
BIOL 25 Investigations in Cell and Molecular Biology L&L	BIOL 150 Conservation Biology L&L
BIOL 28 Human Sexuality ¹	BIOL 164 Behavioral Ecology
BIOL 109 Genetics and Society ^{1,2}	BIOL 174 Cell Biology L&L
BIOL 124 Human Physiology L&L	BIOL 176 Recombinant DNA Technology L&L
BIOL 134 CA Plant Diversity	PHSC 100 Epidemiology ³

1- Does not count towards Biology major

2- Fulfills Technology requirement (STS for New Core)

3- May count towards Biology major (TBA)