

UC **SANTA BARBARA**

Chemistry and Biochemistry

DCB TODAY

Department of Chemistry and Biochemistry Newsletter

A culture of success and diversity

The UCSB Department of Chemistry and Biochemistry provides stellar opportunities for study and research at the cutting edge of modern chemical science. With renowned faculty in all areas and two Nobel Prize winners, US News and World Reports ranks our Department among the top one hundred institutions worldwide. The strongly collaborative environment and interdisciplinary culture allow talent and vision to thrive. Graduates of the PhD program are well-equipped to pursue career options in a wide variety of areas. We are committed to recruiting and retaining the best world-class students and scholars, whose positive energy will continue to strengthen every aspect of the program.

For more information about the Chemistry and Biochemistry Program, please contact us at 805-893-5675.

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A Letter From the Chair



The Department of Chemistry and Biochemistry (DCB) has had a long and eventful year. With dedicated faculty, professional lecturers, and a team of staff, the department continues to strive to provide the best resources to our students (undergraduate, graduate, and post-doctoral fellows) to face challenges in academia and the world.

We welcomed a new faculty member, Dr. Vojtech Vlcek, who came to us from UCLA, as well as seven new staff members that joined us throughout the year. Regrettably, we had to say goodbye to two members of the department, Professor Emeritus Thomas C. Bruice, and staff member, Patricia Walker. We also had two faculty members, Professor Stanley M. Parsons and Dr. Paula Bruice, and staff member, Mary Drake, retire this past year.

The 2018 - 2019 school year has marked many new experiences for the department. A new logo for DCB was designed and created (more can be read on the next page) in the summer. The Chemistry Professional Development (ChemPD) cohort was created to provide more departmental support to our graduate students who are pursuing a career in industry. The Individual Development Plan (IDP) was launched by the Graduate Division and implementation has begun in the department. A new social media presence (LinkedIn, Instagram, and Twitter) was initiated and dedicated staff members work to keep the accounts active and up-to-date. Finally, chemistry apparel has been launched through the cooperation of undergraduate students and staff members and is available to purchase!

In the fall, we invited Professor Peter S. Kim from Stanford University as a guest lecturer for the 44th Annual B.R. Baker Memorial Lecture. In June, we graduated a class of talented students, who will now join our group of alumni and change the world! We are excited for their next chapters in life.

We, as a department, will continue to work to provide better resources for our students and researchers, to grow our faculty numbers, update and improve our curriculum, and carry out the ever-broadening vision of the department. We take pride in our outstanding faculty, as shown in the number of awards and honors they have received throughout the years.

I am happy to be serving as department chair once again and look forward to what is to come in the new academic year.

- Professor Steven K. Buratto, DCB Department Chair

Introducing the New Department Logo



In the summer of 2018, the Department of Chemistry and Biochemistry (DCB) Logo Competition Committee sent out suggestions to faculty of the chemistry department for suggestions and inputs for a new Department of Chemistry and Biochemistry logo. From here, our new logo was born.

Inspiration:



From the designer, Mohit Sharma of VMS Designs: "In this design I tried to combine chemistry & biochemistry. And what's best to represent biochemistry other than the DNA? The spiral shape of DNA is easily recognisable. For the chemistry part, I used simple circles to represent atoms."



IN MEMORY OF THOMAS C. BRUCE

Thomas C. Bruice, Professor Emeritus of the Department of Chemistry and Biochemistry passed away on February 15, 2019, with his wife of 48 years, Dr. Paula Bruice, at his side. Dr. Bruice obtained his Ph.D. in Organic Chemistry and Biochemistry at USC and did a post-doctoral fellowship at UCLA. He then went on to serve on the faculties of Yale University of Medicine, The Johns Hopkins University of Medicine, and Cornell University before joining the UCSB faculty in 1964. Dr. Bruice was a pioneer in the field of bioorganic chemistry and made fundamental contributions to nucleoside material chemistry, molecular dynamic simulations, and many other areas. He received numerous prestigious honors, including the National Academy of Sciences Award for Outstanding Contributions to the Chemical Sciences, the Alfred Bader Medal for Bioorganic Chemistry, the James Flack Norris Award in Physical Organic Chemistry and so much more. He was elected to the National Academy of Sciences in 1974 and was also a member of the American Academy of Arts and Sciences, a Fellow of the Royal Society of Chemistry, a Fellow of the American Association for the Advancement of Science, and a Guggenheim Fellow. With more than 600 publications to his name, he was consistently ranked as one of the most highly cited chemists in the world. Our hearts go out to Paula, to their children and grandchildren, and to their family, colleagues, and many friends. On March 1, 2019, our campus flag was lowered to half-staff in honor and memory of Professor Bruice.

IN MEMORY OF

PATRICIA WALKER

Patricia Walker was an incredible member of our team, beginning her career with the Center for Polymers and Organic Solids in 1988 and transitioning to the Department of Chemistry and Biochemistry in 2008.

Pat's supervisor has fond memories of her, stating: "I'm lucky to have been able to work with her over the past four years and was able to see how thoughtful and meticulous she was in her approach to the complexities of grant administration. I enjoyed seeing her fascination with science and how she applied her understanding to her work."

In Pat's spare time, she enjoyed working as a docent at Coal Oil Point Reserve (COPR), counting the snowy plover nests and hatchlings each year. We ask that you consider making a donation in her memory to COPR.



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FAREWELL RETIRING STAFF



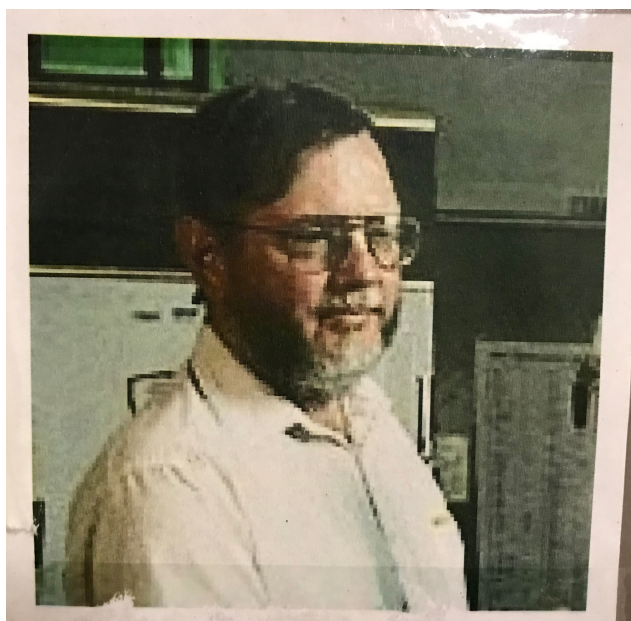
MARY DRAKE

Mary Drake has provided thirty years of service to UCSB. Throughout the years, Mary has worked in numerous departments, including Budget and planning, the College of Letters and Science Undergraduate Studies, and the Sociology department before fulfilling the position of Academic and Admin Analyst in the Department of Chemistry and Biochemistry.

Upon retirement, Mary plans to "lose the alarm clock, travel and finish her landscaping and crafting projects." She will be enjoying her own garden and the beautiful Santa Ynez Valley.

We wish Mary a happy retirement!

farewell RETIRING FACULTY



Dr. Stanley M. Parsons

Dr. Stanley Parsons received his Doctoral Degree in Chemistry from the California Institute of Technology in 1970. He pursued his postdoctoral studies at the University of California, Berkeley sponsored by the National Institutes of Health. Dr. Parsons joined the faculty at UCSB in 1972. He was President of the Pacific Slope Biochemical Conference in 1984, Javits Neuroscience Investigator 1986-1993, Member of the Editorial Board of the Journal of Neurochemistry 1990-2000, and a current Fellow of the American Association for the Advancement of Science since 2008. He is a member of the Society for Neuroscience, American Society for Neurochemistry, International Society for Neurochemistry, American Society for Biochemistry and Molecular Biology, and the American Chemical Society. He has 148 publications and 10 patents and is still an active faculty to the department.



Dr. Paula Y. Bruice

Dr. Paula Bruice received an A.B. (magna cum laude) from Mount Holyoke college and a Ph.D. (organic chemistry) from the University of Virginia. She was an NIH Postdoctoral fellow at the University of Virginia School of Medicine and did a postdoctoral work at Yale Medical School. She has been the recipient of the Associated Students Teaching Award, the Academic Senate Distinguished Teaching Award, the Mortar Board Professor of the Year Award, and the UCSB Alumni Association Teaching Award. Dr. Bruice is the Senior Lecturer SOE of organic chemistry and the Undergraduate Faculty Advisor of the department. She is the author of two textbooks: "Organic Chemistry" (6th edition) published in 2010 by Pearson, and "Essential Organic Chemistry" (2nd edition) published in 2009 by Pearson. She is also the author of the "Study Guide and Solutions Manual" and the Companion Website that accompanies each text. Dr. Paula Bruice will be greatly missed in the classrooms and by the department.

Welcome New Faculty!

DR. VOJTECH VLCEK

ASSISTANT PROFESSOR

The Department of Chemistry and Biochemistry welcomes our newest faculty member, Dr. Vojtech Vlcek!



Dr. Vojtech Vlcek received his PhD in 2016 jointly from the Hebrew University of Jerusalem (Israel) and University of Bayreuth (Germany), where he studied in the chemistry and physics departments. From 2016 till 2018, Dr. Vlcek continued as a postdoctoral researcher at UCLA in the department of Chemistry and Biochemistry.

Dr. Vlcek's group focuses on development of new theoretical approaches to electronic structures and dynamics. They combine density functional theory, quantum field theory and quantum statistical methods with radically new stochastic approaches to investigate large systems. In particular, the Vlcek group studies electronic excitations in chemically heterogeneous and complex nanoscale systems.

Faculty AWARDS & HONORS



Alison Butler

2019, Member of the American Academy of Arts and Science
2019, ACS Arthur C. Cope Scholar
2019, RSC Inorganic Mechanism Award



Trevor Hayton

2019, Friedrich Bessel Research Award
2018, Fellow of the American Association for the Advancement of Science



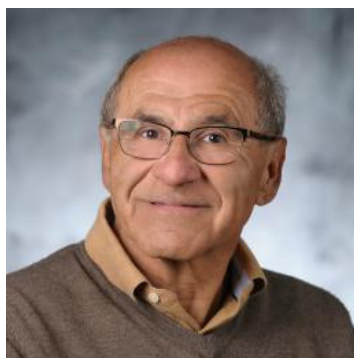
Song-I Han

2019, Fellow of the International Society of Magnetic Resonance
2019, Biophysical Society Innovation Award



Kevin Plaxco

2019, Fellow of the American Institute of Medical and Biological Engineering



Martin Moskovits

2019, E. Bright Wilson Award



Ram Seshadri

2018, Fellow of the American Association for the Advancement of Science



Mattanjan de Vries

2019, Fellow of the Royal Society of Chemistry



Craig Hawker



Thuc-Quyen Nguyen



Guillermo Bazan



Alan Heeger

Highly Cited Researchers of 2018

Welcome

New Staff!



Krista Mastres joined the department in the fall of 2018 as the new Business Officer. She has 15+ years of academic program management experience on campus from the Center for BioEngineering and the Biomolecular Science and Engineering Graduate Programs. Krista is an alumnus of UCSB with a BS in Pharmacology and an MA in Cell Biology & Marine Pharmacology. She was involved in teaching molecular modeling in the chemistry department when that new technology was in its infancy and in her spare time is the designated chemist for her wine making endeavors with her husband.



Alice Kojima joined the Department of Chemistry and Biochemistry in the fall of 2018. She is an alumnus of UCSB, now working with the Department's undergraduate students as the Undergraduate Program Coordinator. Working alongside the academic advisor, she works to advise students, coordinate DSP exams, and much more.



Elena Nicolae joined the staff team of the Center for Polymers and Organic Solids (CPOS) in the fall 2018. With a background in finance controlling, she joined the CPOS team as Financial and Faculty Assistant. She works with the faculty and the administration by performing a variety of financial and administrative tasks across the department. She has since transitioned into the role of CPOS Business Manager.



Olivia Hwang joined the department in the fall of 2018 as the Faculty and Administrative Assistant. She received her BA in Biological Anthropology from UCSB earlier in the spring. Olivia works with the faculty, administration, and students on a number of projects, including but not limited to the Chemistry Professional Development cohort and the department's social media pages. Olivia spent eight years in Shanghai before moving back to the U.S. and studied abroad in England and Sweden during her undergraduate studies.



Nikolai Evdokimov is the department's new Chemical Safety Officer. He coordinates with the faculty and EHS to improve safety culture in the laboratories and overall compliance with regulation agencies. Nikolai received his bachelors in Agronomy, his PhD in Chemistry, and his postdoctoral training at UCLA with Prof. Michael Jung in Synthetic Organic, Medicinal, and Radio Chemistry. In 2017, Nikolai joined Achaogen as a senior research associate and in 2018, he worked as a senior scientist in Ithaca, NY. Nikolai joined the UCSB Department of Chemistry and Biochemistry in early 2019.



Rosemary Rivas joined the department in the spring of 2019 as the department's Payroll Coordinator. She has extensive background in administrative and operations management, most recently with Keller Williams, the largest real estate company in U.S., and previously ran the LA office of Herman Miller for over fifteen years. She and her husband moved to Santa Barbara three years ago and have three daughters. She enjoys gardening, music and cooking.



Rob Marquez joined the department in June 2019 as a Research Administrator. Rob has been on campus since 2008 as a Research Administrator, first with the Institute for Terahertz Science & Technology, and then with the Physics Department. Rob works with faculty and administration on proposal preparation and management. When not at work, Rob enjoys spending time with his family and friends.

Keeping up with the Gauchos

Interview with alumni, Kaleb Asfaha and Kelsey Gorter, 12 years later.



Kaleb Asfaha graduated from UCSB with a Bachelor of Arts in Chemistry in 2007. He is from Addis Ababa, Ethiopia, and grew up in Montgomery Country, Maryland.

Kaleb chose UCSB because of the beautiful coastal campus location in California. He fell in love with the subject of chemistry in high school through his inspirational teacher, Mr. Stewart, at Damascus High School. Kaleb found the subject very interesting because he was good at it and the career paths available with a chemistry degree are numerous and vary in scope.

Upon graduation, the first thing Kaleb did was work at Alpha Analytics, a small environmental lab in Ukiah, CA. After many years of working in the

pharmaceutical sector, he decided to pursue an MS and Ph.D. degree at San Francisco State University and University of California Berkeley, respectively. Now, he is the CEO and Co-Founder of a start-up company, Merso Labs, Inc.. Kaleb chose the field he is in now and chose to start his own business because he has over a decade of industry and academic analytical chemistry experience. "I decided to become an entrepreneur and open up my own lab in a fast growing sector in the U.S."

During his time at UCSB, Kaleb reminisces that some of his fondest memories lie in "spending time at the beach, working at Montecito Bank and Trust, and riding my bike around campus." One of the most noteworthy things he did at UCSB was when he became a father during his junior year. "During my undergrad year, I'm most proud of my ability to work hard and to focus in order to complete my studies without taking time off."

A Gaucho from San Luis Obispo, **Kelsey Gorter** received her Bachelor of Science in Biochemistry in 2007. Kelsey's passion for biochemistry developed through her engagement in research on campus in the Materials Department.

Before starting at UCSB, Kelsey was part of the INSET internship program, mentored by Jayna Jones. Under Jones and through INSET, Kelsey worked on L-DOPA, a Parkinson's Disease drug, and how it interacts with neurons. As a transfer student, the academic environment, the proximity to the beach, and the friendly atmosphere made UCSB an easy choice for Kelsey.

Upon graduation, Kelsey worked for a biofuels startup in San Diego. Shortly after, she earned her teaching credentials and spent 6 years teaching at



Arroyo Grande High School. Now, 12 years later, she is working in the wine industry in Paso Robles. As the Regional Laboratory Manager, Kelsey leads a team of four chemists in a large winery laboratory for Treasury Wine Estate which is a global corporation based in Australia. Kelsey fell in love with winemaking. "It is an amazing application of science. It reminds me of a trade in some ways because it is because it is physically active, requires an understanding of complex equipment, and a willingness to do dirty jobs. It also incorporates agriculture, travel, art, food, beautiful places, and a fun social component. I live on a vineyard on the west side of Paso Robles, so I have fully immersed myself in the industry through my profession and lifestyle choices. My favorite part of how I transitioned from teaching to making wine was working two harvests abroad."

"My first harvest was with Margerum Wine Company (MWC) in Buellton. It was during this harvest that I got to meet Charla, another intern at MWC from South Africa. We became fast friends, and she invited me to come to the Western Cape of South Africa to work harvest with her at Sjinn Winery and Vineyard! It was one of the most grassroots winemaking operations I have ever experienced. Everything was done by hand with meticulous care, and the terroir of the region was beyond amazing. It was a rich opportunity to learn and practice the skills of my new trade, immerse myself in a different culture, and develop an important friendship. Following this harvest, I travelled directly to New Zealand to work yet another harvest. This experience was quite the opposite, but just as valuable. I worked as a laboratory technician for a large corporation, Constellation Brands, mass producing Kim Crawford Sauvignon Blanc. This was the largest winemaking operation I had ever worked in (at the time). The majority of my time was spent producing analysis on wine, grapes, and must. Getting to work in different parts of the world and at wineries of such varied sizes helped me tremendously to understand making wine and to develop a balanced perspective about wine production."

Looking back, one of Kelsey's favorite things about UCSB was living so close to the beach. "Getting to live in a fun, healthy, social, outdoor oriented place with a competitive academic environment is very unique to Santa Barbara." One of the most noteworthy choices she made as an undergraduate at UCSB was "getting involved in research," as it "was very important to preparing me to be a scientist and winemaker."

12 Years Later

Kaleb and Kelsey met in a biochemistry class with Professor Kahn, but became closer when they took physical chemistry with Professor Shea. In college, they were friends and study buddies and spent a lot of time together in class, the library, and just anywhere on campus where they could get work done. For the past 12 years, they've stayed in contact through social media, texting here and there, but really reconnected last year after Kaleb settled back in the Central Coast. This year, they took their friendship one step further and became coworkers.

The idea of working together, according to Kelsey, came about when "Kaleb was starting his new venture and knew I was working in wine science, so he reached out to me and we discussed this new opportunity over a glass of wine." Kaleb mentioned: "Kelsey is one of the few gauchos I know that currently lives in the central coast. When I moved back to SB County we met up to catch up and laugh about old times. We quickly realized our career paths have once again intertwined."

What does the future hold for the two of you?

Kaleb: "I am excited about working with someone I consider to be a good friend and whom I admire greatly."

Kelsey: "I believe we are developing a lifelong friendship built on a foundation that all started at UCSB."

What are some comments about your dynamic?

Kelsey: "Kaleb is one of the most capable and intelligent people I know. I think we compliment each other and challenge each other's thought processes which brings about high quality work. We are a good team!"

Kaleb: "Kelsey is a wonderful person with a sharp mind, great social skills, and likable personality. Her cool and calm approach and her ability to organize thoughts and tasks in a logical manner was why I enjoyed studying with her and now working with her."



Graduate Student News

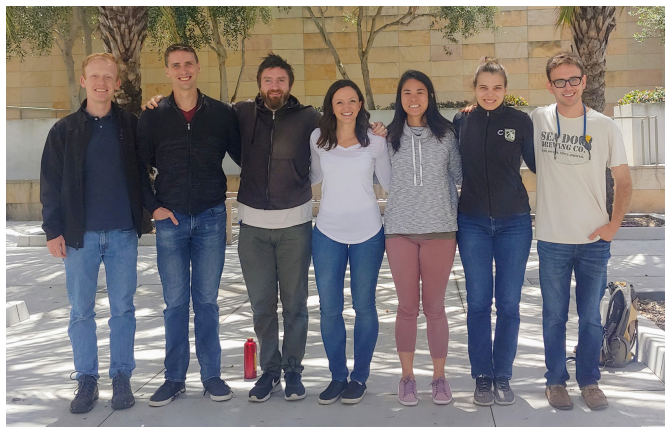
CSSS Chemical Sciences Student Seminar

The mission of the Chemical Science Student Seminar (CSSS) committee is to consistently provide a highly-interdisciplinary, well-attended, student-run venue for advanced graduate students and postdoctoral scholars to communicate their excellent chemical science research in partnership with sponsoring institutions.

Founded by graduate student alumni, Dr. Peter T. Burks in 2011, he was inspired to find a new type of seminar series that focused intently on quality communication and presentation of research. Peter designed the format, recruited talented speakers, and raised the necessary funds to enable the first edition of the CSSS to take place in January 2012.

2019 marked the 8th year that CSSS held weekly chemical science general audience seminars during winter and spring quarters. The seminars included a sponsorship presentation followed by two 15-minute research talks. Each speaker gets the opportunity to receive a \$500 travel grant scholarship - or even spark a collaboration! This year's winner is Maša Podunavac from the Zakarian lab.

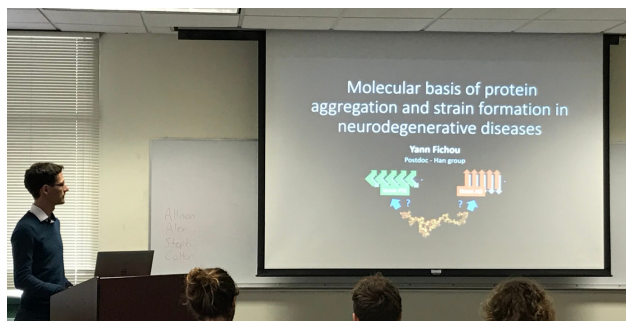
<https://www.chem.ucsb.edu/graduate/current/csss>



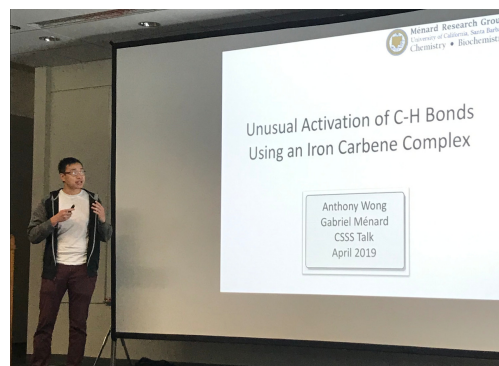
CSSS 2019 Committee: Mike Burroughs, Evan Janzen, William Wonderly, Erin Morgan, Claire Tran, Aneta Jelowicki, Jamie Shaum

2019 Speakers List

Rustin Mirsafavi	Anthony Wong
Khanh (Kendrick) Nguyen	Clayton Dahlman
Elayne Thomas	Samantha McCuskey
Yann Fichou	Yanxian Lin
Daniil Kitchaev	Timothy Carroll
Gregory Gate	Maša Podunavac
Naveen Venkatesan	Cory Brown
Zach Reitz	Sebastian Hietzschold



Post-doc, Yann Fichou

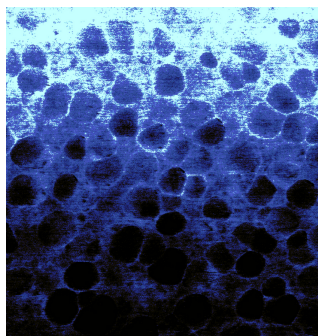


Graduate student, Anthony Wong

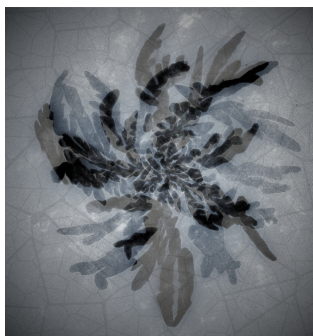
2019 Art of Science

"In science, as in art, the practitioner pursues moments of discovery when observations become greater than the sum of their parts and begin to reveal an untold story. The Art of Science initiative recognizes the creative and experimental nature of science and challenges UCSB researchers to visually communicate the beauty inherent to scientific investigations. Visualizing these discoveries connects scientists, artists, and the community at large. The Art of Science initiative encourages researchers to express the joy of scientific discovery through aesthetics." - Art CSEP
<https://art-csep.cnsi.ucsb.edu/>

In this year's Art of Science, five submissions were made by the chemistry department. The works can be viewed at on the CSEP online Art Gallery, as well as the Santa Barbara Museum of Art, Family Resource Center through June 2019.



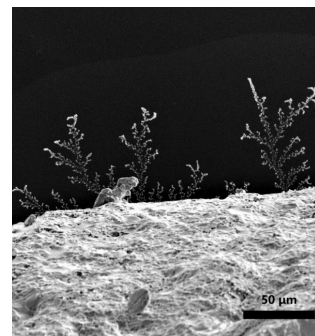
Dive Into the Deep
Nora Schopp



Palm From Silver
Stephanie Wang and
Dr. Sebastian Hietzschold



Crystal Crush
Maša Podunavac
Winner of People's Choice Award



Wasteland Hope
Jiren Zeng

Gauchos Abroad ACalNet Program



Pictured left to right: Past fellows Miranda Li, Anthony Wong, Tarnuma Tabassum; Current fellows **Raymond Borg**, **Megan Keener**, **Yang Qiu**, **Hyjunjin Moon**
 Photo Credit: Olivia Hwang

ACalNet, the Aachen-California Network of Academic Exchange, is one of eleven Thematic Networks supported by the DAAD (German Academic Exchange Service) in its initiative "Strategic Partnerships and Thematic Networks".

The ACalNet IRES program "Training next generation U.S. researchers in advanced magnetic resonance at the chemistry-industry interfaces" invites PhD students in the Chemical Sciences and Engineering at UCSB, UCB and UCLA to become IRES Fellows and experience a research stay abroad at RWTH Aachen University in Germany.

The IRES program 2019 will enable doctoral students from the University of California to immerse themselves in an international scientific community and be part of an interdisciplinary research project at RWTH Aachen University at the interface of catalysis, chemical transformation, modeling and characterization.

<https://www.acalnet.com/en/news/ires-program>

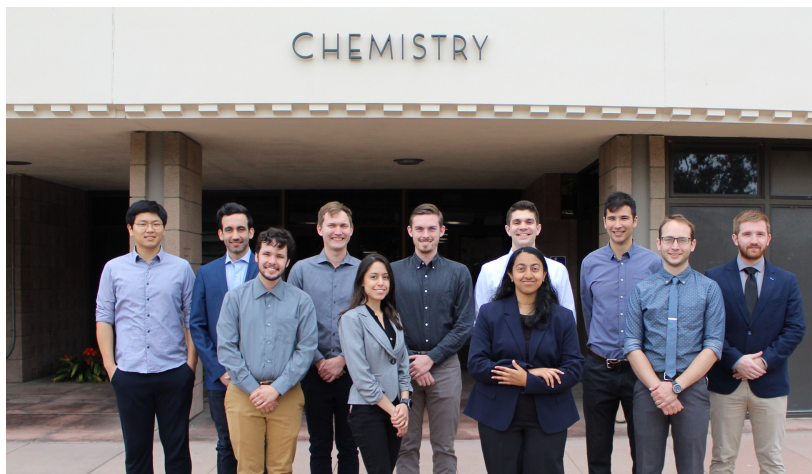
ChemPD

Chemistry Professional Development

Chemistry Professional Development (ChemPD) is a cohort of senior graduate students in the Department of Chemistry & Biochemistry (DCB) working together with several faculty members and departmental administrators to provide Professional Development opportunities for students. ChemPD has, and will continue, to help generate, and participate in, professional development seminars and other events with industry professionals. The goal of ChemPD is to host a number of workshops, as well as help spread awareness of relevant on-campus career events. Our aim is to build a base of knowledge and support for senior DCB graduate students to answer common questions and to help guide them along their chosen career path, or to help them expand their career options. ChemPD, above all, is a support network and cohort of students with a common goal that will meet regularly to discuss our personal experiences, challenges, and questions we have with the job application process, as well as to plan and organize upcoming ChemPD events. Finally, ChemPD will serve as the point of contact and liaison between industry, DCB graduate students, and career services on campus to maximize both career development opportunities for students as well as recruitment opportunities for industry.

ChemPD has hosted a number of workshops and is in the process of organizing the very first Chemistry Career Fair for graduate students and postdoctoral fellows.

ChemPD 2019 Events	Date
ChemPD Meet and Greet	January 16, 2019
First ChemPD Meeting	February 6, 2019
CV to Resume Workshop with Dr. Derek Musashe	February 27, 2019
Second ChemPD Meeting	March 6, 2019
LinkedIn Workshop with Lana Smith Hale	March 6, 2019
Beyond Academia	March 8-9, 2019
First Spring Quarter Meeting with Dr. Arica Lubin	April 9, 2019
Grad Student Career Mixer	April 17, 2019
Transferrable Skills Workshop with Dr. Derek Musashe	May 22, 2019
3 rd Annual Biotechnology Industry Showcase	May 24, 2019
Chemistry Career Day	September 10-11, 2019



The inaugural cohort of ChemPD, Spring 2019

Photo Credit: Joepatrick Celestino

<https://www.chem.ucsb.edu/graduate/current/chem-pd>

Co-Presidents

Jeffrey Carmichael

Ben Luginbuhl

Staff Contacts

Olivia Hwang

India Madden

Faculty Advisors

Prof. Song-I Han

Prof. Mattanjah de Vries

Prof. Mahdi Abu-Omar

CHEMISTRY
PROFESSIONAL
DEVELOPMENT



UC SANTA BARBARA
Chemistry and
Biochemistry

PRESENTS

CHEMISTRY CAREER DAY

Tuesday, September 10, 2019

11:00 AM - 4:00 PM

Engineering Science Building 1001

Opening Remarks by Dean Carol Genetti

ALUMNI PANEL TALK

"Your First Job: Search and Secure"

LUNCHTIME NETWORKING

COMPANY RECRUITMENT

Contact:

Olivia Hwang

oliviahwang@ucsb.edu

805-893-2939

Attire:

Business Casual or

Business Professional

CSEP



UC SANTA BARBARA
engineering and the sciences

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Career Services

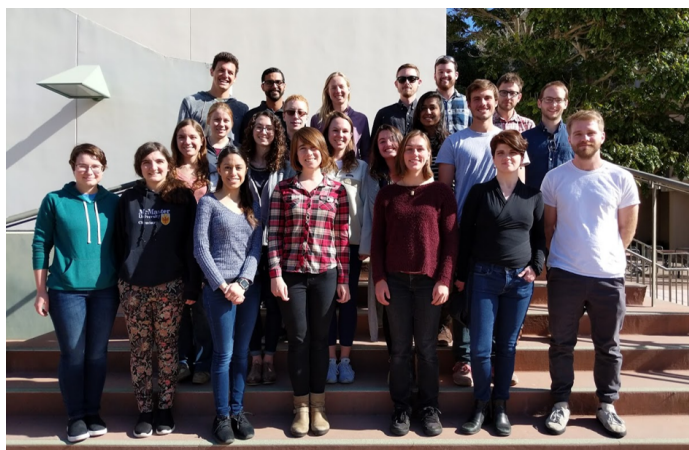
<http://www.chem.ucsb.edu/graduate/current/chem-pd>

GSDS

Graduate Students for Diversity in Science

Graduate Students for Diversity in Science (GSDS) was founded in 2010 and is composed of an interdisciplinary group of young scientists. The cornerstone of the group lies in its recognition of the cultural heritage and diversity of many exceptional scientists who have set foundations through research, service, and leadership in their respective disciplines and across many boundaries. GSDS aims to promote participation in the science, technology, engineering and math (STEM) fields and foster an inclusive atmosphere that celebrates diversity. The goal is to invite speakers from around the country from diverse backgrounds and life experiences to UCSB and give two talks: one on their research, and second they give an informal seminar on diversity. Additionally, GSDS reaches out to the CSUs and invite upper level seniors to come visit where they talk to research professors and grad students about what grad school is really like. These students are often from under represented minorities, and GSDS hopes to provide CSU students with an experience that illustrates the path of a scientific career and encourage those interested to pursue a PhD in a STEM field.

This year's GSDS started a collaboration with the Graduate Simulation Seminar Series (GSSS).



GSDS Members 2019

Executive Committee

Co-presidents Manny Sanchez Zayas & Jeffrey Self

Lecture Series Director Martin Seifrid

Market Director Ben Luginbuhl

Outreach Director Yvonne Diaz

<http://gsds.mrl.ucsb.edu/>



Winter 2019 speaker: Dean Emily Carter
from Princeton University

Lecture 1: *Sustainable Energy Materials from the First Principles*
Lecture 2: *Strategies to Build a Healthy Intellectual Ecosystem for All*



Spring 2019 speaker: Prof. Kalai Saravanamuttu from McMaster University

Lecture 1: *Polymers that See, Touch & Think: Next-Generation Stimuli Responsive Systems*
Lecture 2: *Inclusivity in STEM: The fine balance between me and we*

UCCS University of California Chemistry Symposium

This year the University of California Chemical Symposium (UCCS), the 4th annual meeting since its founding by Prof. Seth Cohen from UC San Diego, continued to grow and develop into the world's premier chemistry conference run entirely by and for graduate students and postdoctoral researchers. This year's UCCS brought nearly 150 attendees from across the University of California and beyond. Three UCSB Students received awards for the best talks and poster at this year's University of California Chemistry Symposium!

http://blogs.rsc.org/rscamericas/2019/05/?doing_wp_cron=1558961869.4465069770812988281250



Sebastian Hietzschold, postdoctoral researcher, receives the Chemical Science Oral Presentation Prize



Samuel Jacob, graduate student, receives the Dalton Transaction poster prize



Margery Cortes-Clerget, graduate student, receives the ChemComm poster prize



David Cao (pictured right on bottom row) serves in the 2019 UCCS Executive Committee

2019 Grad Slam

Launched in 2013, Grad Slam is an award-winning campus-wide competition for the best three minute talk by a graduate student. Students present the central points of their projects in a clear, direct, and interesting manner for a diverse audience comprised of students, faculty, and community members.

This year, six chemistry and biochemistry graduate students attended the preliminary rounds. Three graduate students advanced to the semifinals, and one student advanced to the finals.

<http://www.gradpost.ucsb.edu/grad-slam>



Zachary Reitz (Finals) with PI Alison Butler

Photo Credits: Olivia Hwang



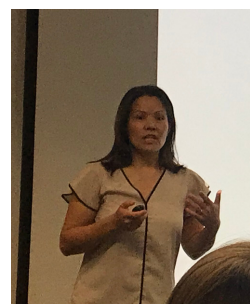
Yvonne Diaz (semifinals)



Kendrick Nguyen (semifinals)



Austin Abrams



Tayyebah Bakhshi



Michael Häggmark

DCB Outreach Programs

5th Grade Chemistry

Our Fifth Grade Chemistry Outreach Program is a partnership between local elementary students and teachers and UCSB students and faculty. To improve educational opportunities for K-12 students, we have developed a program that brings fifth grade students to the chemistry lab at UCSB every Thursday morning to participate in hands-on standards-based physical science activities. The program is designed to nourish their natural curiosity in science and to stimulate an interest in pursuing a higher education in science. In addition, UCSB students are given the opportunity to share their love of science with elementary students and to consider a career path as a science educator.

<http://www.chem.ucsb.edu/~outreach/>



K-12 SciTrek

SciTrek is an outreach program run out of the chemistry department that focuses on allowing 2nd - 5th grade students to experience science first hand by designing, carrying out, and presenting scientific experiments. SciTrek allows UCSB undergraduate and graduate students the opportunity to volunteer within the program.

<https://scitrek.chem.ucsb.edu/>

Faculty Members and Co-Founders:

Darby Feldwinn & Norbert Reich

Education Coordinator: Sammi Lambert

Graduate Student: Liz O'Neill

Program Coordinators: Sammi Fowler & Cory Fitzsimmons



JSU-UCSB Mentoring Partnership

For nearly fifteen years, Professor Mattanjah de Vries has collaborated with Professor Glake Hill, a chemistry professor at Jackson State University (JSU) in Mississippi. Together, they started the JSU-UCSB Mentoring Partnership (JUMP) program.

The JUMP program is designed to engage students and faculty at JSU and the Department of Chemistry and Biochemistry (DCB) at UCSB by research and educational collaborations.

The program aims to encourage JSU undergraduates and Masters students to apply to graduate school at UCSB and other UC Campuses and to enhance their success rate. A key objective is to help lower the cultural barriers for JSU students to applying to graduate school in general, and graduate programs at the UCs, in particular. It not only familiarizes JSU Students with graduate school, but also provides them with an extended research portfolio to strengthen their applications. Equally important, the program will benefit UCSB students by virtue of their participation in the research of the JSU partners.

This year, Professor de Vries hosted Dr. Hill and twenty-four students from Jackson State University at the second annual JSU-UCSB Workshop here in UCSB. During the summer, six JSU students will be doing research in our department.

<https://jump.chem.ucsb.edu/>

UCSB Mentors:

Mahdi Abu-Omar

Steven Buratto

Alison Butler

Irene Chen

Mattanjah de Vries

Song-I Han

Craig Hawker

Javier Read de Alaniz

Ram Seshadri

Joan-Emma Shea



2019 JSU-UCSB Workshop with UCSB and JSU students and professors



2019 Staff Appreciation Golden Horseshoe Competition. Left: The staff of the Department of Chemistry and Biochemistry. Top Right: Winners of the 2019 Golden Horseshoe Competition Minjin and Adrian. Bottom Left: Golden Horseshoe "Biggest Losers" Nikolai and Chika



Synthesis of alum in General Chemistry 1CL Lab!

Highlights of the Year



Atomic spectroscopy in General Chemistry 1AL Lab



Richard, our residential glass blower, custom making glassware during an interview.



Volunteers and staff of SciTrek!



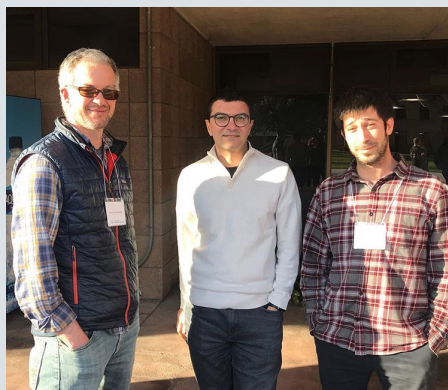
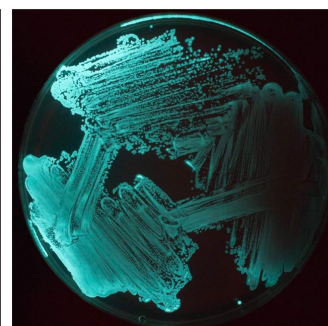
Professors and students enjoying Science Pub Nights at Captain Fatty's Brewery



Peek these colorful products by our graduate students!

Top: UCSB colors synthesized by Maša Podunavac from the Zakarian lab

Bottom: Glowing bacteria studied by Jeff Carmichael from the Butler lab



2019 Graduate Student Recruitment

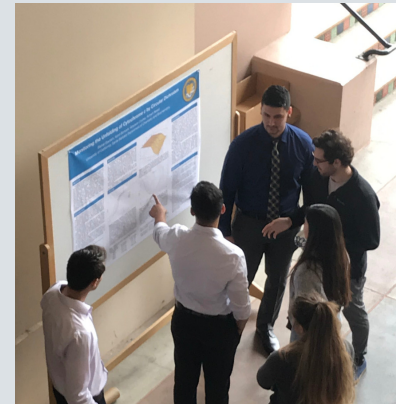
Left: Graduate Admissions Committee. Middle: Lunch with current and prospective students. Right: Poster Session



Zach Reitz at the 2019 Grad Slam Finals showing his Trojan Horse analogy



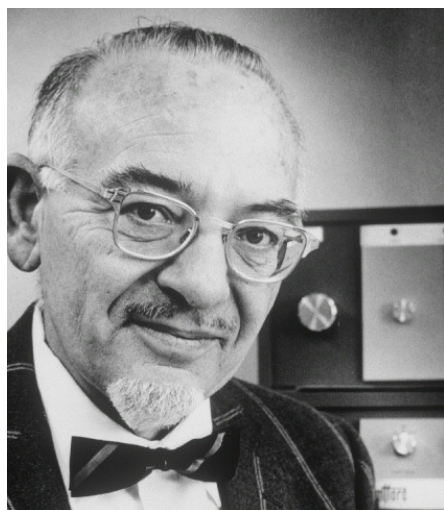
Grad students attending 2019 Grad Slam Finals



Annual joint Biophysical Chemistry and Drug Design poster session

Annual Seminar

The Department of Chemistry and Biochemistry has a vibrant and diverse named seminar series that honors an important figure in the history of the department.



44th B.R. Baker Lecture

Professor B.R. Baker was a Professor of Chemistry at UCSB from 1966 until his death in 1971. Baker's graduate work on the structural elucidation and synthesis of Cannabis constituents marked the beginning of a prolific career in the chemistry of natural products. He undertook many diverse projects of medicinal interest including the synthesis of antihemorrhagic vitamin K analogues, biotin derivatives, compounds with hormone activity, sulfones with activity against tuberculosis, and alkaloids. He published two books

and more than 370 papers that included a series of papers on the structure and synthesis of the antimalarial alkaloid from *Hydrangea* that filled an entire issue of the *Journal of Organic Chemistry* in 1952. He determined the structure of the first known nucleoside antibiotic, puromycin, and synthesized it in 1955. This achievement came long before the discovery of the structure of transfer ribonucleic acid (tRNA). Perhaps his greatest contribution to medicinal chemistry was the concept of active-site-directed irreversible enzyme inhibition of substrate-identical enzymes. A monograph summarizing this approach to drug design promptly became one of the classic works in the field. Since founding the B.R. Baker Memorial Lecture and Student Fellowship in 1975, the memory of B.R. Baker has been actively kept alive by his devoted wife of 40+ years, Reba Baker, until her quiet passing on February 23, 2013.



The B.R. Baker Memorial Fellowship in Chemistry is awarded to a graduate student on the verge of graduation who has given strong indication that they will make continued and substantial contributions to the progress of organic, medicinal, or biological chemistry. Fellowship candidates are nominated by department faculty members and recipients are selected by a Department Faculty Awards Committee. Each fellow is honored at the annual B. R. Baker Memorial Lecture, and recipients receive a cash award of \$500. This year's recipient is Jacob Barrett from the Ford lab.

Professor Peter S. Kim (pictured left) from Stanford University is the lecturer of the 44th B.R. Baker Lecture.

Overview of the Year

141

GRADUATE
STUDENTS

34

NEW GRADUATE
STUDENTS

1

NEW CHEMISTRY
TEACHER EDUCATION
PROGRAM GRADUATE
STUDENT

578

DECLARED
UNDERGRADUATES

177

BACHELOR
DEGREES

19

DOCTORATE
DEGREES

2018-2019 Student Awards

Department Undergraduate Award Recipients

Phi Lambda Upsilon
(National Honorary
Chemical Society)

Awarded to seniors majoring in chemistry who rank in the top 20 percent of their class with a minimum grade point average of 3.0.

David Alfaro, Jessica Andrews, Jason Carmody, Jiaxin Chen, Evan Clarke, Vin Clover, Matthew Duong, Bishal Guatam, Connor Guttman, Valerie Lensch, Ben Lewis, Kate Lindsey, Ali Mahdi, Davide Mannini, Hoplee Pak, Katheryn Rein, Gary Singh, Helena Steffens, Claire Tran, Zhaoyuan Tang, Remy Vrahas, Yumen Xu, Peter Zaleski, Xinxun Zhu

Willard L. McRary
Prize

Awarded to graduating seniors whose attainment in chemistry is outstanding and reflects promise of the same high-quality scientific achievement that characterized the career of William L. McRary, Professor of Chemistry (1940 - 58).

Ali Mahdi

Valerie Lensch

American Institute
of Chemists

Awarded to an outstanding senior majoring in chemistry in recognition of a demonstrated record of ability, leadership, and professional promise.

Stephanie Taylor

American Chemical
Society

Awarded for recognition of a student with an aptitude in different divisions of chemistry.

ANALYTICAL CHEMISTRY

Adal Basravi

INORGANIC CHEMISTRY

Valerie Lensch

PHYSICAL CHEMISTRY

Zhaoyuan Tang

ORGANIC CHEMISTRY

Gabby Dolgonos

**ROBERT H. DEWOLFE
UNDERGRADUATE
RESEARCH AWARD**

Awarded to conduct research in organic chemistry in memory of Robert H. DeWolfe, Professor of Chemistry (1955-77).
Xijun Zhu

**ROYAL SOCIETY OF
CHEMISTRY
CERTIFICATE OF
EXCELLENCE**

Awarded to an undergraduate student who shows high achievement in the chemical sciences.
Davide Mannini

**UNDERGRADUATE
EXCELLENCE IN
ORGANIC CHEMISTRY**

Awarded to a Chemistry major with outstanding performance in an organic sequence with a minimum 3.4 GPA, whose future plans include a career in Chemistry.
Farbod Moghadam

**DISTINCTION IN THE
MAJOR**

Honors students who, in addition to having attained high scholastic achievement, have achieved excellence in undergraduate research at UCSB.
Kate Lindsey

**LUCAS RANSOM
MEMORIAL
SCHOLARSHIP**

Awarded to an undergraduate student majoring in chemistry who demonstrates excellence in their field and a commitment to extracurricular involvement
Derek Yang

**ROBERT H. DEWOLFE
TEACHING FELLOWSHIP
IN ORGANIC
CHEMISTRY**

This award supports the undergraduate Enrichment Program, in which our best organic undergraduate students are paired with our best organic graduate students in a one-on-one lab experience. The program is supported with contributions from the DeWolfe family.

Mentor

*Jacob Barrett
Timothy Caroll
KC Chen
Kyle Clark and Miranda Sroda
Dr. Etemadi-Davan
Joshua Gladfelder
Samuel Jacob
Aneta Jelowicki
Megan Keener
Jacob Lacharity
Nicholas Lee
Adam Levi
Emily Levin and Emily Schueller
Luana Llanes
Xu Ma
Madeline Peterson
Maša Podunavac
Daniel Roa
Dr. Balaram Takale and Dr. Ruchita Thakore
Jonathan Sandoval
Miranda Sroda
Friedrich Stricker
Anthony Wong
Yuk Fai Wong*

Protégé

*Yingzi Xia
Rachel Garwick
Derek Tang
Kate Lindsey
Olivia Langner
Tony Huang
Rachel Huang
Christopher Tang
Rasmussen Kaare
Gabby Dolgons
Farbod Moghadam
Allison Koopman
Ramsey Issa
Cassidy Peng
Xijun Zhu
Delenn Ganyo
Alex Busse
Ellie Lee-Morrow
Ann Hong Nguyen
Chitoh Yung
Alex Bernal/Sara El-Arid
Jose Delgado
Jill Kutrosky
Abhenand Ayagari*

Department Graduate Award Recipients

PHI LAMBDA UPSILON (NATIONAL HONORARY CHEMICAL SOCIETY)

Awarded to first year graduate students majoring in chemistry who rank in the top 20 percent of their class with a minimum grade point average of 3.5.

Arunavo Chakraborty, Alana Dixon, Nora Schopp, Friedrich Stricker, Jiakai Sun, Gwen Weng, Zhiyuan Zhu

OUTSTANDING SERVICE TO THE DEPARTMENT

Awarded for exceptional leadership and outstanding commitment to the mission of the Department.

Ali Chamas, Allison Abdilla, Angelique Scheuermann, Anthony Wong, Austin Abrams, Ben Luginbuhl, Brett Yurash, Chan Park, Cliff Hardy, Dezmond Bishop, Evan Landstrom, Gregory Gate, Jacob Barrett, Jamie Shaum, Jeff Carmichael, Jeff Self, Jiren Zeng, Joshua Gladfelder, Kalin Hanson, Khanh Nguyen, Kyle Clark, Manny Sanchez Zayas, Martin Seifrid, Maša Podunavac, Meghan Nichol, Michael Häggmark, Michael Tro, Miranda Sroda, Molleigh Preefer, Priyanka Chary, Ray Borg, Sophia Bailey, Sephanie Wang, Tayyebah Bakhshi, Tim Carroll, Veronica Laos, Victoria Steffes, Yuning Shen, Yvonne Diaz, Zachary Reitz

BRUCE RICKBORN - ROSS JOHNSON GRADUATE STUDENT FELLOWSHIP

Awarded to an incoming graduate students for their outstanding academic and research records, in honor of Dr. Bruce Rickborn.

Joon Lee
Vani Singhania

SANDRA LAMB MEMORIAL AWARD

Awarded to an outstanding graduate student for excellence in research, in honor of Dr. Sandra Lamb Sanford, Professor of Chemistry (1959 - 2002)

Tim Carroll
Manny Sanchez Zayas

PHILLIP JOSHUA CHASE MABE MEMORIAL FELLOWSHIP

Awarded to a graduate student with great passion and intelligence in Chemistry and Biochemistry, in honor of Phillip Joshua Chase Mabe.

Tim Carroll

MANANYA TANTIWIWAT GRADUATE STUDENT FELLOWSHIP

Awarded to an outstanding graduate student for excellence in research, teaching, and mentoring of undergraduates, and who has a history of aiding others in the community.

Maša Podunavac

B.R. BAKER MEMORIAL AWARD

Awarded to an outstanding graduate student who has given strong indication that they will make continued and substantial contributions to the progress of organic, medicinal, or biological chemistry.

Jacob Barrett

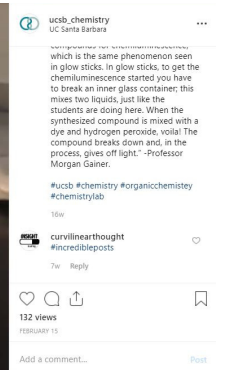
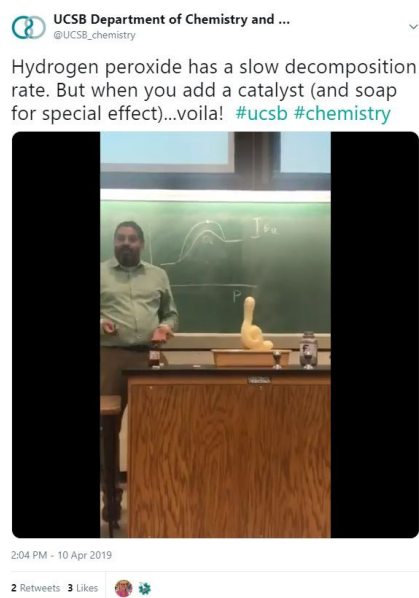
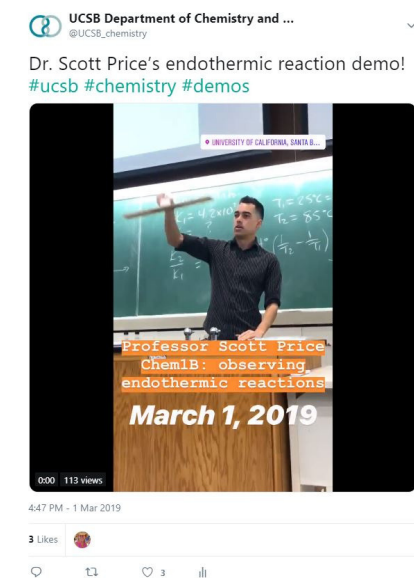
JOHN H. TOKUYAMA MEMORIAL FELLOWSHIP

The John H. Tokuyama Memorial Fellow is selected from the pool of organic graduate students making good progress towards the degree, with an effort to address financial need. The funding is variable, based upon the annual income from the endowment and longer term considerations.

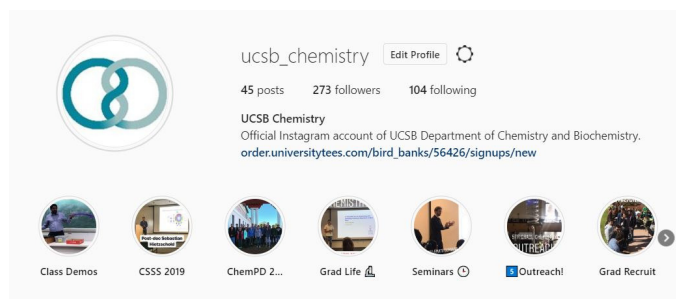
Yuanxin Li
Kan Tagami

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SOCIAL MEDIA highlights!



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Chemistry and Biochemistry



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PURCHASING
ohwang@chem.ucsb.edu

Friends of Chemistry

During the spring quarter of each year, the Department convenes a Faculty Awards Committee for the purpose of selecting our top students to be honored at an annual Departmental Awards Ceremony. This ceremony, presented by the Department Chair and attended by the MLPS Divisional Dean, recognizes our outstanding students and new graduates. The gifts and fellowships, many of which are named for our contributors, presented during the ceremony are made possible entirely by the Friends of Chemistry and Biochemistry.

CURRENT CONTRIBUTORS AND AWARDS

B.R. Baker Memorial Fellowship

Bruce Rickborn-Ross Johnson Graduate Fellowship

Jarrold Davidson Memorial Scholarship

John H. Tokuyama Memorial Fellowship

Robert H. DeWolfe Undergraduate Research Award

Robert H. DeWolfe Teaching Fellowship in Organic Chemistry

Professor Willard L. McRary Prize

Department Endowments

The Department of Chemistry and Biochemistry would like to give a special **THANK YOU** to our UC Santa Barbara Foundation Donors who have made a Permanent Investment in the Future of the Department of Chemistry and Biochemistry through Endowment Gifts

DEPARTMENT ENDOWMENTS:

B.R. and Reba Baker

Dr. and Mrs. John H. Tokuyama

Robert H. DeWolfe and Family

Dr. Ross Johnson, Ph.D.

Professor Willard L. McRary

DONORS OF THE DEPARTMENT

The Department of Chemistry and Biochemistry would like to recognize the following individuals and organizations who contributed to our program from as of May 31, 2019. We offer you a sincere **THANK YOU** for your support. Through our donors, we have been able to provide our students with amazing opportunities and caliber of education to develop their understanding, leadership, and discipline in chemistry and biochemistry.

Mr. Kung Hsu

Benevity Abbvie

Dr. Alan R. Goldhammer

Dr. Alexander R. Abela

Dr. Alison Butler

Dr. Allen D. Stock

Dr. Cristina Spillet

Dr. David W. Ryba

Dr. Dennis K. Mitchell

Dr. Gary J. Krouth

Dr. Jason D. White

Dr. Jerald A. Simon

Dr. Mary Howe-Grant

Dr. Meredith A. Crisalli

Dr. Michael Cory

Dr. Mohammad R. Masjedizadeh

Dr. Peter Baine

Dr. Peter C. Ford

Dr. Petra A. Van Koppen

Dr. Richard D. Foust, Jr.

Dr. Richard J. Watts

Dr. Samuel T. Tokuyama

Dr. Wellington Lee

Dr. William T. Monte

Dr. Zarko V. Boskovic

ExxonMobil Foundation

Karisma Foundation

Mr. and Mrs. Eddie Smith, Jr.

Mr. Charles Ungermann

Mr. David Zigler

Mr. Jay T. Close

Mr. John Willis

Mr. Leif Ourston

Mr. Lyndon Christensen

Mr. Monte D. Ragland

Mr. Phillip D. Mabe

Mr. Ralph A. Winn

Mr. Richard J. Kurtik

Mrs. Ann F. Winn

Mrs. Barbara J. Stock

Mrs. Charlene J. Mabe

Mrs. Danielle P. Krouth

Mrs. Fereshteh Morgan

Mrs. Louise Y. Ragland

Mrs. Nancy L. Winn

Mrs. Nicole M. Masjedizadeh

Mrs. Susan Y. Close

Ms. Bonnie G. Baker

Ms. Donna Anderson

Ms. Janine K. Tom

Professor Daniel A. Straus

YourCause - Wells Fargo

Giving Opportunities to DCB

Our alumni and friends provide essential support for the teaching programs and research enterprise in the Department Chemistry and Biochemistry. If you would like to become a part of our ongoing work, we invite you to join "Friends of Chemistry and Biochemistry." Your generosity plays a critical role in our ability to fulfill our mission and is truly appreciated. We welcome all gifts, whether unrestricted or designated for a special purpose.

There are many ways to support the Department in our educational and research endeavors.

AREAS IN NEED OF FUNDING

- Unrestricted Support
- Student Support
 - o Graduate Program Development
 - o Jarrod Davidson Memorial Scholarship
 - o Outstanding Teaching Award
 - o Undergraduate Program Development
- Faculty Support
- Lecture Series
- Capital Naming Opportunities

We invite you to be part of the Department's success in educating the next generations of leaders.

To find out more about each opportunity, please visit the Department of Chemistry and Biochemistry website:
<http://www.chem.ucsb.edu/giving>

If you would like to support the program, please indicate which area you'd like to support.

- <https://www.chem.ucsb.edu/giving> -

Mail Checks to:

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For more information about this newsletter,
please contact writer and editor, Olivia Hwang
ohwang@chem.ucsb.edu



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Biochemistry**