

# Periodic News



Spring 2024 | Volume 7

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## Message from the Chair

Welcome to the seventh edition of the Periodic News, the official newsletter for the Department of Chemistry and Biochemistry at California State University, Fullerton!

Please enjoy our newsletter that has updates from our department and alumni from the past year. I know many people have been eagerly waiting for the publication of our annual newsletter as we normally publish in November. However, we have shifted our release date to January to ring in the new year with accomplishments from the past year. 2023 has been an exciting year for our alumni and department. Our faculty have been busy teaching, working in their research labs with students and contributing to the overall success of our students and the department as observed in the research publications and funding received by our faculty. As we reflect on 2023, there are so many student stories and accomplishments that are recognized in this newsletter.

Our 2023 alumni event was a major success as we had a record number of alumni attend. Our alumni event is one of my favorite events of the year and I hope we can continue to increase the number of alumni that attend each year. In addition, our alumni were very generous during our crowdfunding campaign and have provided much needed funds for student research activities.

In the past year we say hello to Dr. Ryan Cammarota joining our faculty and David Greenwood becoming our Equipment Technician. As we welcome our newest additions to the department, we say goodbye to Dr. Barbara Gonzalez and Dr. Zhuangjie Li as they retired. Both Dr. Gonzalez and Dr. Li are outstanding educators, accomplished researchers, amazing colleagues and most importantly passionate mentors. We thank them for their many years of service to the department as they will be missed.

As chair, I have the honor to shake each graduate's hand as they walk across the stage during graduation. It's my privilege to represent our department as our newest graduates have gained the knowledge and skills from our dedicated faculty. Please enjoy this newsletter as our alumni share their success stories and accomplishments from 2023 to help inspire our work for 2024!



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## 2022-23 Student Updates, News, Stories & Highlights

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Students from our department have been featured in the news during the past year for their many outstanding contributions and award-winning activities. What follows is a summary of these stories with links to the original reports (click on the title of the article to read more).

### Six Titan Teams Selected for National Undergraduate Research Program

**Montana Melody**, chemistry-biochemistry graduate student lead, and **Abigail Anastasi** and **Azeem Horani**, both biochemistry majors were selected for the Council on Undergraduate Research's inaugural Scholars Transforming Through Research Program.



### Student Researcher Targets New Drug Treatment for Alzheimer's Disease

Biochemistry major **Ryan West** is working on a medicinal chemistry project to develop therapeutics that can be used in the treatment of Alzheimer's disease, a progressive neurologic disorder.



### Chemistry Grad Finds True Calling to Become a Teacher & Religious Sister

For Class of 2023 graduate **Kim Nguyễn**, it was divine intervention to pursue a chemistry teaching career and a Catholic sister.



### Chemistry Study Improves Method to Measure Vibrations of Solids Faculty-Student Research Published in Nature Reviews Physics

A new study by chemistry graduate student **Kody Acosta** and his research mentor **Allyson Fry-Petit** describes how to use neutron spectrometers at national laboratories in the U.S. and U.K. to better understand and measure vibrations of solids.



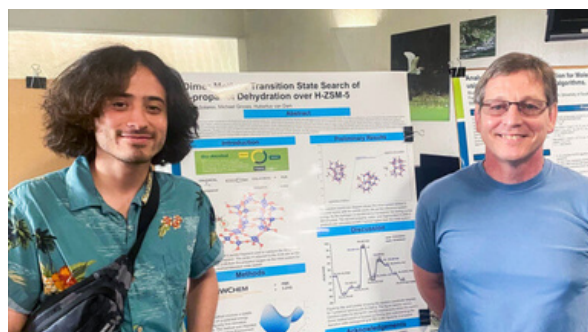
### Summer Research Prepares Community College Transfer Students for STEM

39 Undergraduates, including biochemistry major **Saray Angulo**, participate in Project RAISE's Undergraduate Research Experience program.



### Chemistry Student Studies Sustainable Energy Solutions at National Lab

Chemistry graduate student **Oliver Solares** is working toward finding solutions for clean energy and mitigating the impacts of climate change.





# Welcome New Graduate Students!



Hello! I'm **John Baker**.

I grew up in Napa Valley and then moved to Santa Barbara where I completed my undergraduate degree in Chemistry at Westmont College. I am researching the chemical modification of RNA binding proteins under Dr. Niroshika Keppetipola.

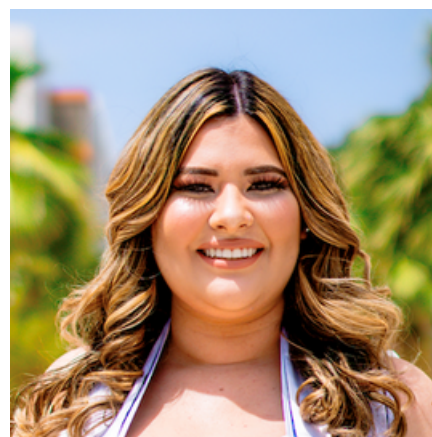
I am interested in learning about how the human body is a chemical masterpiece.

I hope that this program will propel me into a Medical Degree program where I can eventually pursue clinical research.

In my spare time I enjoy a long run, a good cup of coffee, and surfing.



My name is **Patrick Carnie**. I was in the U.S. Army as a combat medical specialist. I then enrolled in North Idaho College and transferred to University of Idaho where I received my bachelor's degree in chemical engineering. I am working on pharmaceutical analogs in Dr. Salzameda's research lab. My goal is to graduate with sufficient lab and academic skills to teach at the community college level. When I'm not in school, I like to go boating, paddleboarding, fishing or other ocean related activities, playing with my border collie, Dexter, or working at my business with my wife.

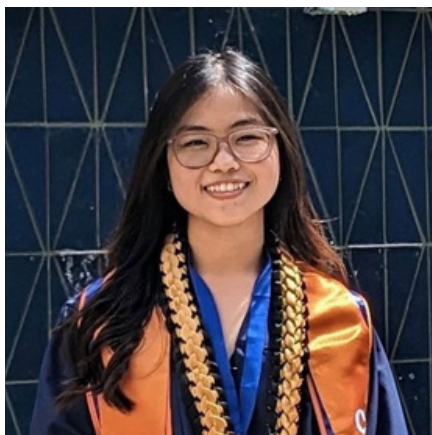


Hello my name is **Alyana Carrell** and I am a first-year graduate student. I was born and raised in San Jose, California and received my bachelor's degree in biochemistry here at CSUF in Spring 2023. My mentor here is Dr. Michael Groves, I am interested in continuing my research studying the electronic and structural properties of ultra-wide band gap semiconductors like diamond. After receiving my graduate degree, I hope to apply to a PhD program. When I am not at school I enjoy traveling to new places, and trying new foods.



My name is **Tyler Deflin** and I was born and raised in Orange County. I obtained my bachelor's degree in Philosophy from CSUF in 2014 and started taking coursework to apply for a chemistry master's program in 2019. I'm currently working in the Curtis Research Group. After graduating, I would like to have a job in a lab. Doesn't matter which company or anything like that, I just love being in a lab. I love playing beer-league softball, video games, and golf.

A fun fact is that I just recently got married and my wife and I are expecting a son in February 2024! Also, I'm 6'10"!



Hi, my name is **Leah Duong**.

I was born and raised in Vietnam. I got my B.S. in Chemistry from CSU Fullerton in 2022.

Currently, I am working with Dr. Stevan Pecic focusing on medicinal chemistry.

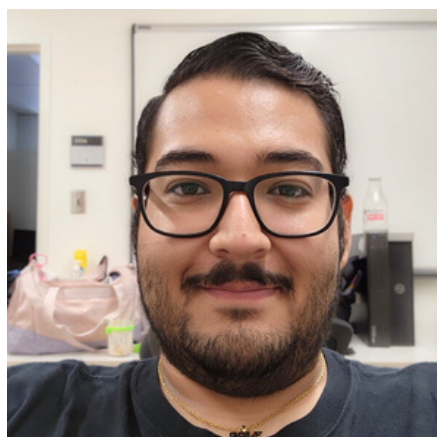
As a graduate student, I hope to learn more techniques used in an organic lab and be involved in developing therapeutics for existing and neglected diseases.

I love sweets so in my free time, I like to bake and test my baking recipes.



My name is **Lucy Guzman**. I am from a small town called Exeter in the Central Valley. I graduated from CSUF with an BS in Biochemistry. My mentor is Dr. Paula Hudson and I am interested in becoming a well-rounded student. I enjoy learning how instruments work and would like to further expand my knowledge of lab instruments. I am hoping to apply for Ph.D. programs in Atmospheric Chemistry, but that plan is not set in stone yet. In my spare time, I like to catch up on sleep or go to concerts. A fun fact about me is that I used to live on a fruit farm so I know a lot of random fruit knowledge.

# Welcome New Graduate Students!



Hi, my name is **Marco Hernandez!** I was born in Lynwood, and I live in Bell Gardens. I graduated from CSUF in Spring 2023 with a degree in Biochemistry. I'm working in physical chemistry under Dr. Andrew Petit. I am interested in learning the mechanisms and the "how" and "what" molecules do on the quantum and molecular level! As of now, I would like to have a career in teaching at a community college or university. On my spare time I like to listen to music, learn about new and upcoming technology like computers, monitors, TV's, entertainment systems and general home automation. I am an open book and love a good conversation!



Hi, my name is **Zeinab Khalil**, and I am from Downey CA. I received my bachelor's degree in chemistry from UCLA in 2022. I am currently a first year Master's student with a concentration in analytical chemistry. I am joining Dr. Curtis's Research group and focusing on air quality and atmospheric aerosol particles. After graduating, I hope to become an instructor at the community college level or pursue a career in air quality or environmental hazards. Outside of school, I spend most of my time with my husband and 2-year-old daughter. I also enjoy watching sports with my family and trying new foods from different cultures.



Hi! My name is **Linh Kim** and I'm from Ontario, CA. I received my B.S. in Chemistry at CSUF in 2019. Now, I'm a 1st year analytical chemistry graduate student. I work in Dr. Allyson Fry-Petit's lab where I research the structures of oxygen transport materials. Currently, I'm a full-time Lead QC/HPLC Chemist for an eyedrop company. I would like to become a lab manager/director in either industry or academia. My favorite hobbies include cooking and playing my trumpet. Fun fact: I was a member of the CSUF Varsity Pep Band for a couple of years!



Hello, my name is **Amanda Reyes**. I was born and raised in Southern California. I received my BS in Biology from CSUF in 2018. After graduation, I worked as a substitute high school teacher, and eventually I worked as a lab technician in a medical diagnostics lab. I gained an interest in working towards a master's degree while working on COVID diagnostic tests. Currently, I work in Dr. Pecic's lab focusing on biochemistry. I am interested in gaining more skills in research and analytical techniques. I hope to pursue a career in research in the pharmaceutical industry. In my spare time, I enjoy reading and studying film.



Hi! My name is **Gustavo Salgado** and I was born and raised in Santa Ana, CA. I earned my B.S. in Biochemistry and Cell Biology from University of California, San Diego. I am currently a first-year master's student in Biochemistry. I am in Dr. Niroshika Keppetipola's lab where I focus on protein biochemistry. I am interested in learning all the laboratory techniques used to study proteins and nucleic acids. After obtaining my master's degree, I would like to study diseases in a research lab. In my free time, I enjoy biking, jogging, playing soccer, and spending time with my family.



My name is **Shelby Seely** and I'm from Glendora, California. I graduated from Cal Poly Pomona with a bachelors in biotechnology and a minor in chemistry. My mentor is Dr. Salzameda, who has already taught me so many new techniques in his lab. I am most interested in learning how to make new compounds. Specifically, compounds that could be used to create medicines to prevent or treat diseases which I then plan on using while doing medical research in the future. In my spare time I enjoy hanging out with my niece and nephew and going on adventures with them!



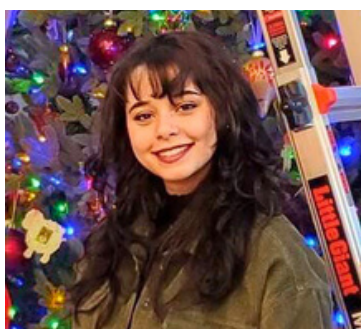
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## Welcome New Graduate Students!

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My name is **Laura Ulloa** and I was born in Fountain Valley, but raised in Anaheim – where I currently reside. I received my undergraduate degree in Biochemistry from California State University, Fullerton in 2019. I am interested in learning how to develop molecules that can be used in drug synthesis. I would like to work in a pharmaceutical company to help develop drugs to combat diseases. I would also like to obtain my Ph.D. in Chemistry. In my spare time, I like to go hiking, read books, and go to Angels baseball games. I also have two kids, whom I love with all I've got.



Hi, I'm **Rachel Williams** and I am from Riverside, California. I went to UCR for my undergrad where I graduated with a Chemistry degree in 2022. I took a gap year and was a lab assistant at Loma Linda Hospital in their Pathology lab. I'm interested in using organic chemistry to create molecules that can help people cope with illnesses. In the future, I would like to be a professor or work in medicinal chemistry. In my spare time I like to play video games, specifically puzzle games or RPGs, and pick up new hobbies like crochet and bookbinding.

## Welcome Our Newest Staff Member:

### David Greenwood

*Equipment Technician*

#### WHAT ATTRACTED YOU TO CSUF?

I came to CSUF after working 14 years at Orange Coast Memorial Medical Center as a Biomedical equipment technician. Before that I had worked at Beckman Coulter as a test technician for automated laboratory testing equipment.

I was intrigued by the position at CSUF because of the similarities to my previous work, but at the same time being involved in something completely different. I hope to be here for a long time and help keep the equipment running for as long as possible.

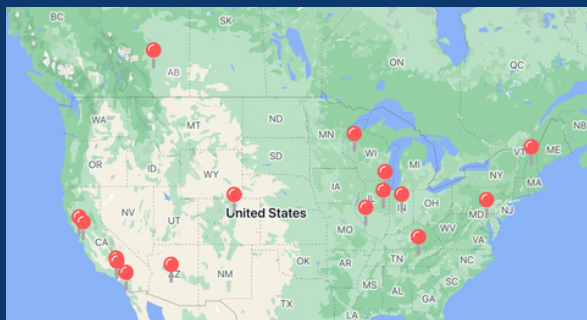
#### WHAT DO YOU LIKE DOING IN YOUR FREE TIME?

I love spending time with my kids, watching live sports, going to concerts (punk will never die), and going to the theatre. Go Rams! Go Angels!



## 2023 Student Travel

This past year our department has sent 34 students on 53 trips to present at conferences and conduct research at national labs. These trips include travel to 16 cities in 10 states as well as 3 international trips to Canada.



## Chemistry and Biochemistry: Summer Program to Advance Research and Knowledge (SPARK)



In summer of 2023, the department launched SPARK to introduce first-time freshman to scientific research. Faculty in the department hosted 8 freshman to participate in summer research. This program allowed freshman to gain research experience, build a community and increase their confidence to persist in the major. The program was a great success and we will continue in summer 2024 with a new group of first-time freshman. Students only need a SPARK to become the scientists of the future!!!

[Click here to learn more about this summer program.](#)

## CURE Update: General Chemistry II

In the Fall of 2023, a course-based undergraduate research experience (CURE) was launched in two general chemistry II lab sections taught by Drs. Ally Fry-Petit and Joya Cooley. A total of 38 students performed original solid-state chemistry research.

The CURE research project focused on addressing climate change. Students were tasked with the rational design of oxide materials that were used to catalyze the production of hydrogen gas as an alternative fuel to petroleum. The semester culminated in a poster session where the research teams presented their results to their peers and faculty.

Preliminary results show that this experience was a success. As research is intrinsically fraught with setbacks, CUREs allow students to build problem-solving skills, develop resilience, and understand setbacks are often learning opportunities. From discussions with students and surveys, the students appreciated the genuine nature of the research experience. The deviation from a traditional cookbook type lab experiment allowed students to connect what they learn in the lecture to the context of a real-world problem that researchers are trying to solve. Moreover, students showed excitement in knowing that their results were feeding into solving an urgent global problem while learning techniques and skills necessary for success in the sciences. Several students have expressed interest in further pursuing research because of these experiences.

After the success in Fall 2023, the CURE will continue in two lab sections during the Spring 2024 semester!

Look for the #TitansGive Day on March 6 to support our CURE for the General Chemistry II lab.

We need your help to provide the necessary and equipment and supplies to expand the CURE into all lab sections. Your generous contributions can bring authentic research experiences to all General Chemistry II students!





# Awards & Recognitions

## STUDENT AWARDS

Award	Recipients
ACS Analytical Chemistry Undergraduate Award	Megan Doan
ACS Inorganic Chemistry Undergraduate Award	Mara Milhander
ACS Organic Chemistry Undergraduate Award	Geon Hwang
ACS Physical Chemistry Undergraduate Award	Jacob Fernandez
Advancing in STEM Scholarship	Celine Diep
American Chemical Society Award	Sofia Salas
American Institute of Chemists Award	Daniel Soriano
Brad van Mourik Interface of Computers with Chemistry Scholarship	Mason Davis
Coppel Graduate Science Award	Xiaohui Weng
Dr. Andrew and Kay Montana Endowed Scholarship in Chemistry - Grad	Aerin Bridgers
Dr. Andrew and Kay Montana Endowed Scholarship in Chemistry - Undergrad	Abigail Anastasi
Excellence in Biochemistry	Noah Patterson
Glenn and Takeshi Nakaya Scholarship	Aline Vu
Glenn Nagel Scholarship	Faye Yun
Glorya Welch Scholarship	Thai Hoang Mai Le
James Sternberg Scholarship	Lael Cardinal
Lyle Wallace Service Award	Ryan West
Maria Linder Nielson Endowed Graduate Fellowship	Damian Ventura
Mark Lackey Award for Graduate Teaching	Steven Pham
Outstanding General Chemistry Award	Rumeysa Gurler Alyssa Villarreal
Phil Berriman Research Excellence with Instrumentation Scholarship	Lucy Guzman
Robert C. Belloli Future Chemistry Teacher Scholarship	Kim Nguyen
Titan of Chemistry and Biochemistry Award	Ashleigh Burns Ashneet Gill Tanner Megna
Wegner Family Scholarship	Emily Birlea Rumeysa Gurler

## FACULTY & STAFF AWARDS

Award	Recipients
Outstanding Teaching Award	Sachel Villafañe-Garcia
Outstanding Contributions to Grant Writing	Allyson Fry-Petit
Outstanding Untenured Faculty Member Award	Stevan Pecic
Outstanding Instructor	Sonali Shah
Staff Excellence Award	Mary Flores



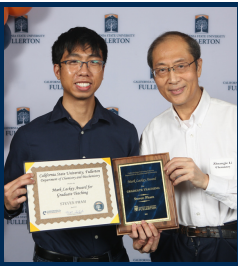
## FACULTY UPDATES

**Dr. Sachel Villafañe-Garcia** earned tenure and was promoted to Associate Professor.

**Dr. Dan Curtis** earned tenure.



# Awards & Recognitions (Continued)





# ALUMNI NIGHT

Bootleggers Brewery in downtown Fullerton graciously hosted our 2023 Alumni Night social on Friday, October 13th. We had an excellent turnout of 3 Emeriti, 12 faculty members, 2 staff members, 14 guests, 33 alumni for a total of 64 attendees! This was a record turnout for our event!

It was wonderful seeing so many familiar faces. Alumni from 1969 to Spring 2023 attended the event!!!!

Everyone had a fun time connecting with old friends and reminiscing about their time in the Department CSUF.

The Chemistry and Biochemistry Department will continue to mentor, educate and train our students to leave CSUF with fond memories and ready for a career in science. We look forward to another exciting event in 2024 and an even bigger turnout!



[Please click here to stay in touch with us and support your fellow alumni.](#)



## CROWDFUNDING FOR SPARK!

In October 2023 the department participated in crowdfunding to raise funds for undergraduate research.

Thanks to our incredible alumni, emeriti, faculty and staff we raised \$10,215 plus another \$1,000 from Schools First, for a total of \$11,215!

Thank you to all that generously donated!! These funds will be used for SPARK 2024.



# Alumni Spotlights



## ALUMNUS: JOSEPH CIPRIANO, M.S.

### ***When did you graduate and what were your degrees?***

I received my undergraduate degree at Cal Poly Pomona in Chemistry with an emphasis in Biochemistry in 2015. For graduate school, I became part of the Titan family. I received my Master's in Science in Chemistry with an emphasis in Biochemistry at CSUF in 2022.

### ***Whose lab did you work in during your time in the Department of Chemistry and Biochemistry and what did you work on?***

When I started the graduate program at CSUF in 2018, I knew I wanted work in a lab that added to my knowledge on biochemistry. I decided to join Dr. Marcos Ortega's lab since his work was on capsid formation of viruses. My work in his lab was very applicable to the current climate at the time, since I did my pre-defense/seminar topic on viruses in March 2020 – right before the world shut down due to the Covid-19 pandemic.

### ***Where are you now? What is your current position?***

I am a professor at three different campuses: Mt. San Antonio College, Fullerton College, and Cal Poly Pomona. I am hoping to be placed in a full-time position in the next year. I really enjoy teaching to students who are new to chemistry.

### ***What is the fondest memory you have of CSUF?***

The fondest memory I have at CSUF is finding my community. I felt impostor syndrome while also yearning for connections with others. So, the connections I formed at CSUF have made a significant impact on my life. I made many friends both inside and outside the chemistry program and I still keep contact with them. I enjoy seeing all of us grow into our careers.

### ***What is your advice for current or future students?***

I would highly recommend enjoying the process as much as you can. There will be highs and there will be lows, but once you graduate, these moments will become memories. So, enjoy making friends because you'll never know who will stick with you 5 years from now. Enjoy talking to your professors and ask them how they got to be where they were at. Being curious doesn't hurt.

## ALUMNUS: LATO NGUYEN

### ***When did you graduate and what were your degrees?***

I graduated in 2020 as a Chemistry major with a minor in Japanese.

### ***Whose lab did you work in during your time in the Department of Chemistry and Biochemistry and what did you work on?***

I had the privilege of working in Dr. Stevan Pecic's lab for three years. In the Pecic Group, I helped design, synthesize, and conduct biological evaluations on a novel inhibitor that targets the endogenous FAAH and sEH enzymes. Such inhibitors have the potential to treat chronic pain.

### ***Where are you now? What is your current position?***

I am currently pursuing a medical degree in New Mexico.

### ***What is the fondest memory you have of CSUF?***

One of my most cherished memories at CSUF is the invaluable experience of conducting research and working in the laboratory alongside Dr. Pecic. This experience solidified my passion for the field of science and instilled in me a deep sense of gratitude for the opportunities I had during my undergraduate years.

### ***What is your advice for current or future students?***

My advice for current and future students is to understand the importance of time management. Effectively managing your time is a valuable asset. Cultivating strong study habits and honing your time management skills will significantly boost your ability to excel in challenging courses and prepare you for graduate school or work after graduation. Of course, it's essential to remember to set aside some time for yourself to relax and engage in activities you enjoy. Achieving a balance is the key to success.





# Alumni Spotlights



## ALUMNUS: REBECCA CLARK, PH.D

### **When did you graduate and what were your degrees?**

I graduated from CSUF in 2019 with a B.S. in Biology and B.A. in Chemistry.

I began my doctorate studies in analytical chemistry at the University of North Carolina at Chapel Hill in the Fall of 2019, and then transferred with my P.I. to Purdue University to finish my studies, and I graduated with my PHD in August 2023.

### **Whose lab did you work in during your time in the Department of Chemistry and Biochemistry and what did you work on?**

I worked in Dr. John Haan's lab researching mono- and bi-metallic catalysts for the reduction of carbon dioxide to formate, that could then be used as fuel in formate fuel cells.

### **Where are you now? What is your current position?**

I just accepted a position at Merck in the Small Molecule Analytical Research and Development Group.

### **What do you hope to do as a career?**

I hope that in my career I can help new drugs come to market to better the life of patients. I have a particular passion for oncology drugs, but I am also just excited to help new medicines reach patients.

### **What is the fondest memory you have of CSUF?**

I have so many fond memories of study groups with boba runs and fun times in Dr. Haan's lab, it's hard to choose one. However, one memory that stands out is the year my lab mates and I decorated our lab door for Halloween.

We decided to go with a Star Wars theme. I love puns, so we used a photo of Dr. Haan and Photoshop to create the characters "Haan Solo" and "Obi-Haan Kenobi. We decked out the entire door in decorations too. We had a blast and the design turned out really well!

### **What is your advice for current or future students?**

I would tell students to work hard, but also to remember to take breaks and have things outside of school that bring them joy; school tends to be a bit of a marathon, and taking breaks and having hobbies are extremely helpful for succeeding and thriving in school.

Also, sleep. Sleep is super important, yet frequently forgotten.

## ALUMNUS: JAMES R. PAYNE, PH.D.

### **When did you graduate and what were your degrees?**

I graduated with a B.A. in Chemistry with Honors in June 1969. It was only the second four-year undergraduate class to matriculate from CSUF.

I was a chemistry graduate student at the University of Wisconsin Madison and received my Ph.D. in 1974

### **Whose lab did you work in during your time in the Department of Chemistry and Biochemistry and what did you work on?**

I worked with Van Willis, examining chelating properties of various solvents.

### **Where are you now? What is your current position?**

I am currently the President of Payne Environmental Consultants Inc. (PECI) in Encinitas, CA. After my Ph.D. thesis research under Professor Marion H. O'Leary at Wisconsin, I have been involved in oil-spill research for almost 50 years. In collaboration with other investigators, my research efforts were utilized to develop and verify computer models to predict oil weathering fate and behavior as a function of a variety of oil types and environmental conditions.

I absolutely believe in the adventure of science. As a result of my field and laboratory efforts, I've authored or co-authored three books and chapters in seven others, published over 70 peer-reviewed articles and/or papers in various conference proceedings, and prepared over 80 environmental reports for use by various governmental agencies and private clients.

### **What is the fondest memory you have of CSUF?**

Without a doubt, my fondest memories were of my professors:

L. Donald Shields, Andrew F. Montana, Gene A. Hiegel, Robert E. Spenger for Advanced Organic, and Fran H. Mathews for Biochemistry. Most of these classes had only 10 – 20 students enrolled! It is also noteworthy that back in the '60s every lab was taught by the professors themselves because there were no graduate students or TAs.

When I wasn't studying or pursuing my wife, Marinee J. Pavlovich (CSUF 1968), I enjoyed surfing. I actually introduced Gene Hiegel to surfing and sold him his first surfboard.

### **What is your advice for current or future students?**

No where is it written that you have to choose a career that is exceedingly difficult. Find something that you really enjoy or that you're particularly interested in or good at. My motto is, "I don't care what it is, if you're not having fun, you're not doing it right!"



# Alumni Updates

**Kody Acosta** (MS Chemistry '23)  
Pursuing his PhD at UC San Diego.



**Maha Al Sebaye** (BS Biochemistry '22)  
PharmD Candidate at UCI School of Pharmacy and Pharmaceutical Sciences.



**Dr. Thomas L. Bostwick** (BA Chemistry '87)  
Medical Director at an emergency department in Phoenix VA. Married and father of five.



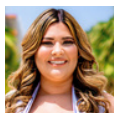
**Christopher Bunye** (BA Chemistry '17)  
Lab Technician for Behr Paint.



**Rhonda Ellen Cardinal** (BS Chemistry '81)  
Retired from working as an Environmental Engineer at a launch site.



**Alyana Carrell** (BS Biochemistry '23)  
Pursuing her Masters in physical chemistry at CSUF under Dr. Michael Groves.



**Robert Chan** (BA Chemistry '20)  
Graduated law school with honors at Chapman University. Working as post-bar law clerk until he is admitted as an attorney.



**Jenille Cruz** (BS Biochemistry, MS Chemistry '23)  
Pursuing a PhD at UC San Diego in the Grassian Research Group.



**Christina Daniels** (MS Chemistry '15)  
Senior Future Fuels Analyst for BP helping to transition them into the hydrogen market.



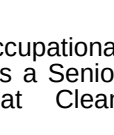
**Muskan Dhingra** (BA Chemistry '23)  
Attending Pharmacy School.



**Lanette Espinosa** (BS Biochemistry '23)  
Preparing for the CLS programs and will be applying in the next cycle.



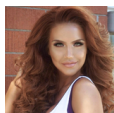
**Brain Fraser** (BS Biochemistry '05)  
Earned a Master's in Environmental and Occupational Health from CSUN (2010). Now working as a Senior Environmental Compliance Manager at Clean Harbors.



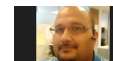
**Arbie Fruneaux** (BS Biochemistry '16)  
Works as a Criminalist (Forensic Scientist) for the California Department of Justice.



**Michelle Gayhart** (BS Biochemistry '17)  
Works at NASA's Jet Propulsion Laboratory as a precision cleaning technician III.



**Fred Gonzales** (BS Chemistry '20)  
Works for Pacific Star Labs



**Jose Luis Guardado Sandoval** (MS Chemistry '22)  
Graduate student at UCLA pursuing PhD in chemistry.

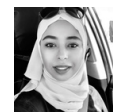
**Dan Harbs** (BA Chemistry '92)  
Senior Technical Consultant for Veolia Water Technologies and Solutions.



**Azeem Horani** (BS Biochemistry '23)  
Graduate student in UC Merced's Quantitative and Systems Biology Program



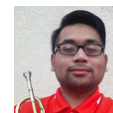
**Nema Awelker Ibrahim** (BS Biochemistry '23)  
Works in Biochemistry lab and has plan to pursue a PhD in the future.



**Emdadul (Bobby) Khan** (BS Chemistry '94)  
Works as Operations Logistics, West Coast Manager at Zef Scientific, Inc.



**Linh Kim** (BS Chemistry '19)  
Works as a Lead QC Chemist at K.C. Pharmaceuticals, Inc. Current CSUF MS in Analytical Chemistry graduate student.



**Elaine Lai** (BS Biochemistry '23)  
Attending UCI in Fall 2023 for a PhD in the Cellular and Molecular Biosciences program.



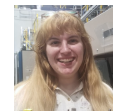
**Mimi Le** (BS Chemistry '18) Lab Lead at Heraeus Precious Metals.



**Dr. Goldie Malek** (BS Biochemistry '00)  
Received her doctor of Pharmacy at Loma Linda. She works in a hospital setting



**Mara Milhander** (BS Chemistry '23)  
Applying to PhD Programs for Chemistry in the fall to hopes to attend grad school in 2024.

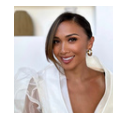


**Candice Miller** (BS Chemistry '20)  
Pesticide Testing for Cannabis Products.

**Lindsay Morales** (BA Chemistry '19)  
Works as a Laboratory Scientist at the Southern Nevada Water Authority.



**Megan Nacar** (BS Biochemistry '13)  
Commercial Chief of Staff at Velsora, a Precision Medicine Bioinformatics Company.



**Emily Nguyen** (BS Biochemistry '23)  
Working at different optometry offices. Hopes to attend an OD program in 2024.





# Alumni Updates

**Dr. Aaron Ninokawa** (BA Chemistry '13)  
NSF Postdoc at University of Washington. Assistant Professor at State University of New York College.



**David Outhier** (BS Biochemistry '09)  
Premier Account Advisor at Los Angeles Department of Water and Power



**Mayur Patel** (BS Biochemistry '04)  
Manager of Quality Operations at Advanced Sterilization Products, Irvine

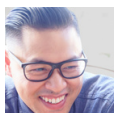


**Dr. James Payne** (BA Chemistry '69)  
President of Payne Environmental Consultants, Inc. Earned a Ph.D. in chemistry from the University of Wisconsin-Madison



**Michelle Petrie**  
(BS Chemistry 2000)  
Anesthesiologist Physician. Enjoys sailing and traveling.

**Leoncio Ricarte Jr. "RJ"**  
(BS Biochemistry '10)  
Key Account Manager and Project Manager for PSC Biotech.



**Gala Rodriguez**  
(BS Biochemistry '23)  
In Graduate school pursuing her doctorate at Santa Barbara.

**Cheyenne Rose**  
(BS Biochemistry '23)  
Applying to a Clinical Lab Science program at UC Davis.



**Stephanie Salvador**  
(BS Biochemistry '21)  
Finishing up her last year for my Master's in Biotechnology at the UCI. Conducting research analyzing metabolites when gut bacteria interact with dietary fiber.

**Cossette Sanqui** (BS Biochemistry '23)  
Traveled to the Philippines this summer and plans to obtain a job in research.



**Brandon Stewart** (BS Biochemistry '18)  
Working as a Senior Scientist at Novartis focusing on siRNA synthesis and conjugation



**Jude Suleiman** (Chemistry Minor '23)  
Works as a healthcare administrator and is applying to dental school.



**Shruthi Suresh** (BS Biochemistry '23)  
Pursuing a Doctor of Osteopathic Medicine degree.



**Leslie Torres** (BS Biochemistry '23)  
Completing medical school prerequisites and gaining more clinical hours to apply for medical schools in the next application cycle.



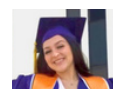
**Jenny Tran** (Chemistry Minor '23)  
Pursuing her Pharm. D degree at UCSD Skagg's School of Pharmacy and Pharmaceutical Sciences.



**Dr. Kim Trinh** (BS Biochemistry '09)  
Pediatric dentist working in Placentia, CA. Married to a CSUF Biochemistry Alumni.



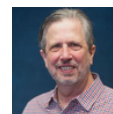
**Vanessa Valdez** (BS Biochemistry '23)  
Attending Analytical and Atmospheric Chemistry PhD at UCSD.



**Ryan West** (BS Biochemistry '23)  
Pursuing her PhD in Pharmaceutical and Translational Sciences at USC



**Dr. John Wiley**  
(BS Chemistry '82, MS Chemistry '85)  
Pursuing her PhD in Pharmaceutical and Translational Sciences at USC



## Did We Miss You?

We'd love to hear what you are up to and feature you in our next newsletter!

[Click Here](#)

Or scan the QR code



# FACULTY SPOTLIGHT: DR. RYAN CAMMAROTA

Welcome the newest faculty member in our Department! Dr. Cammarota started in August of 2023 as an Assistant Professor of Organic Chemistry.



## CHOOSING CAL STATE FULLERTON

Ever since attending a Primarily Undergraduate Institution as a student, I have valued close student-faculty interactions and hoped to one day return to this type of setting as a professor. What attracted to me to CSUF in particular was the opportunity to balance innovative teaching with developing a student-focused research program.

## RESEARCH

The overall theme of my research is predicting whether a chemical reaction of interest will be successful, and if so, how successful. To make these predictions, we apply data science tools and interpretable machine learning algorithms to find trends between the experimental data we collect in the lab and numerical molecular descriptors that we calculate using a computer. Chemical research in both academia and industry has changed a lot over the past few decades, specifically in terms of the crucial roles that computational chemistry and machine learning now play in guiding laboratory experimentation. A goal of my research program is to teach students how to use these emerging tools as experimental chemists.

My group is primarily engaged in computational chemistry and data science research right now, as we are still in the process of setting up our lab and ordering the equipment and chemicals we need for experimental research. We are working on two main projects right now, which are focused on understanding C-H functionalization and sulfur-fluoride exchange (SuFEx) reactions, respectively. The latter is a collaborative project with Professor Nicholas Ball and his students at Pomona College, which is a continuation of our work when I was a Robbins Postdoctoral Fellow in his group.

Having just started at CSUF only 3 months ago, the biggest success so far has been

getting my research group started this semester with 5 amazing students. Working with them on setting up our lab and beginning our computational and data science research has reminded me why I like this job so much.

## GOALS FOR THE NEXT 5 YEARS

In my first 5 years, I hope to develop a research program where students can apply their chemical intuition from class to make predictions, and then work together to test their predictions in the lab. I also hope to integrate technology where possible into my teaching to help students succeed. Lastly, mentoring students in their scientific journeys and helping them get to where they want to go next will always be central to what I want to achieve at CSUF.

## ADVICE TO NEW STUDENTS

1. Ask lots of questions and always follow your interests. I was interested in the intersection of math and statistics with chemistry, and following those dual interests is what led me to my current job and area of research.
2. Don't lose track of your hobbies outside of your graduate program! Life can get busy, but it helps to have a fun outlet. I played soccer while I was a graduate student, and it helped keep me healthy and sane, along with introducing me to lots of new friends along the way.

## RECENT HIGHLIGHTS

Recently, Dr. Michael Groves and I received funding from the National Science Foundation (NSF) to start a new project in collaboration with the NSF Center for Computer Assisted Synthesis (C-CAS). As a part of this new project, our students will study reactions that remediate fluorinated environmental pollutants and will participate in summer research experiences at C-CAS sites. We are also excited about our students being mentored by C-CAS students and learning about what pursuing a PhD in chemistry looks like.





# FACULTY SPOTLIGHT: DR. JULIA CHAN

Get to know more about Dr. Julia Chan, Assistant Professor of Chemistry Education. Dr. Chan Started working at Cal State Fullerton in August 2019.



## CHOOSING CAL STATE FULLERTON

Prior to CSUF, I was an assistant teaching professor at the University of Tampa where my main job responsibilities included teaching and service. During the four years I was teaching, I found that I missed research and the intellectual stimulation I got from doing research. I was interviewing for several other positions and I ended up choosing CSUF because of the diverse student population, many great resources for professional development, and the wonderful colleagues in the department.

At CSUF, I was able to do both teaching and research, which I enjoy. Also, I always wanted to live in California, so that's why I chose CSUF.

## RESEARCH

I conduct research in chemistry education. Chemistry education research focuses on the study of teaching and learning in chemistry through a variety of qualitative and quantitative methods. The overall theme of my research focuses on studying the effect of affective characteristics on achievement in gateway chemistry classes.

Our current research focuses on studying the synergistic effect of growth mindset and effective learning strategies interventions in general chemistry courses across two institutions and examining its effectiveness using a randomized controlled trial. Currently, we are developing chemistry specific growth mindset and learning strategies modules. Our research group was recently awarded

a NSF grant to study the effect of growth mindset and effective learning strategies necessary for improving their learning skills and academic success. The long-term goals of this project include impacting students' mindset and learning skills, improving student success and retention in gateway chemistry classes, and improving diversity in STEM fields.

## RESEARCH STUDENTS

I have mentored two M.S. students and eight undergraduate students.

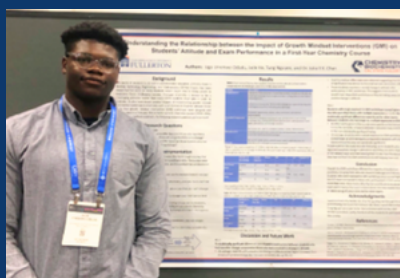
My former students have gone on to become high school teachers, community college teachers, or went on to dental school and medical school.

## ADVICE TO NEW STUDENTS

1. Go to conferences, present your research, and network! If you are shy, get your research mentor to introduce you to other researchers.
2. Exercise good time management skills and learn how to prioritize things you have to do on your list (you don't have to do everything in one day!)
3. Adopt a growth mindset. You will face failures, setbacks, and challenges in graduate school. Everyone does and it is normal! But learning how to reframe failures and using them as opportunities to grow and develop yourself and persisting throughout your grad school journey will eventually lead you to success.

## RECENT HIGHLIGHTS

I am very proud of both of my graduate students, Tung Nguyen and James Park, who obtained their MS degrees in Dec 2022. They are both pursuing their dream careers – teaching in high-school and community college. I am very proud of them and their successes!



# Happy Retirement, Dr. Gonzalez!

We wish to congratulate Dr. Barbara Gonzalez who retired in May 2023 with emeritus status. To best speak to Dr. Gonzalez' impact in the Department of Chemistry and Biochemistry we compiled student testimonials.

**Veronica Cabrera** (BS Biochemistry '20)  
Chemist at Cardinal Health in Colton, CA

I very happy to write a tribute to honor Dr. Gonzalez. I was very close to her and had such a great experience during my undergrad. It is very fortunate that I was able to spend time with her in the lab for about 4 years.

I worked on the STEER project with Dr. Gonzalez. My focus was on NSF S-STEM undergraduate perceptions of career expectations. I investigated programs that worked towards fostering skills beyond academic qualifications due to the increasing number of undergraduates that feel they are not qualified enough to enter the workforce. I looked for emergent themes, the frequency of these themes in relation to the Social Cognitive Theory, levels of agreement at the end of the program year and qualitative changes in their perceptions.

I currently manufacture and test nuclear pharmaceutical drugs for MRI's that diagnose cancer in both humans and animals. I am working in industry, but there is a lot of collaboration and learning that needs to be completed in order to support local hospitals. I spend most of my days training other members of the company on methods. I would love to teach at the high school level, when my daughter is a little older.

One of my most vivid memories of Dr. Gonzalez was when she asked me to join her research lab as a volunteer during the summer of my first year. My summer was super fun because I volunteered. I met great students and faculty. I felt like I was constantly reaching out to Dr. Gonzalez that summer. She would always connect with me on Zoom - even with my toddler daughter blabbing away on screen.

Dr. Gonzalez is a dedicated professor. She made a significant impact on her students and showed she cared every step of the way. I am honored to have worked in her research lab for four years. While she challenged me, she left an indelible mark on my journey as a first-generation graduate student. I wish her a well-deserved and fulfilling retirement. She is cherished and remembered by all of us who had the privilege of learning by her side.



**Ellen Chang** (BS Biochemistry '17)  
Honors Chemistry teacher at a high school in Southern California.

I worked in Dr. Gonzalez's lab, analyzing the relationship between speed and gesture in the context of acid-base neutralization and cellular signal cascading.

Through the research training I received in Dr. Gonzalez's lab, I learned the effectiveness of using body language in speech to enhance understanding in education and developed the ability to work collaboratively with colleagues, gather evidence properly, and analyze data effectively.

One of my fondest memories from Dr. Gonzalez's lab is our weekly lab meetings. I was fortunate to work with colleagues with whom I felt comfortable and enjoyed working. Even after we graduated, we stayed in touch. We attend alumni events and catch up with Dr. Gonzalez and keep her updated on our careers. Some of these colleagues have remained my friends to this day – I even invited them to my wedding.

I want to express my gratitude to Dr. Gonzalez for providing me with the opportunity to grow as a person and for leading me to where I am today. I hope her retirement is filled with joy and relaxation.





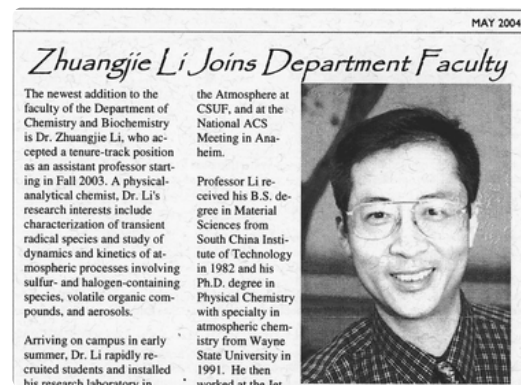


# Happy Retirement, Dr. Zhuangjie Li!

Dr. Zhuangjie Li, professor emeritus of analytical and physical chemistry, retired in May 2023. Below are student testimonials to speak to Dr. Li's impact.

Dr. Li expressed his thanks to the Chemistry & Biochemistry department by establishing the Dr. Zhuangjie Li Chemistry Faculty Research Endowed Fund.

[Read more about these funds here.](#)



**Masoud Roueintan**  
(MA Physical Chemistry '14)  
Chemistry Department Chair at Mt. San Antonio College

I worked in Dr. Li's lab studying the kinetics of the reaction between OH radicals and naphthalene, styrene, and 1,4-dioxane molecules at 240 – 340 K and 1 – 3 Torr using the Relative Rate/Discharge Flow/Mass Spectrometry (RR/DF/MS) Technique. I also conducted theoretical studies using Density Functional Theory (DFT) on the dynamics of the reactions between OH radicals and naphthalene and styrene. Additionally, I compared the dynamics of OH additions to the  $\alpha$  and  $\beta$  carbons of naphthalene as well as hydrogen atom abstraction from the  $\alpha$  and  $\beta$  carbons.

I have been working full-time as a professor of Chemistry at Mt. San Antonio College since 2016. I am currently serving as the Chemistry Department Chair providing support to our wonderful students and over 50 amazing chemistry professors in the department. The major focus of my job is on teaching Chemistry courses. In my present capacity as the Department Chair, I support creating and maintaining a productive collaboration with faculty and among faculty, staff, administrators, and students for the smooth day-to-day operations of the department and program.

I believe conducting scientific research in Dr. Li's lab made me a more logical person with strong problem-solving capabilities. The other factor I learned while working with Dr. Li was to be organized and as he always reminded me to complete one task at a time. This helps me to complete tasks with higher quality and more effectively. Dr. Li was a great mentor for me and many others. He supported me in my journey to be who I am today and for that I am always grateful. I hope he gets more free time to play ping pong and enjoy his time with his family.

**Michael Phan** (MS Chemistry '16)  
Data Analytics

While working in Dr. Li's lab I conducted a kinetics study of the reactions of OH with n-Undecane and n-Dodecane using the RR/DF/MS technique.

I worked for a bit at Capital Rx as a senior analyst. Currently am finishing up a Harvard CS50 course while working in data analytics. I use various programming languages in combination with excel to translate in-depth data analysis to digestible reports for leadership teams.

Dr. Li always instilled in me the importance of clear communication and data quality. Working under him as a master's student gave me an eye for what good data and high-quality work should look like.

My fondest memories would be hearing Dr. Li sing Chinese opera in the halls. He is the most attentive and caring advisor.

Dr. Li is also one of the most valuable mentors I've had in my life. Though his contributions to CSUF will be missed, I wish him many long and happy years of well-deserved retirement!

## Research Updates - Publications

From 2022-2023, 9 of our faculty authored or co-authored a total 24 publications! They were joined by 42 unique CSUF student co-authors!

Souza, L. W.; Miller, B. R.; **Cammarota**, R. C.; Lo, A.; Lopez, I.; Shiue, Y-S.; Bergstrom, B. D.; Dishman, S. N.; Fettingner, J. C.; Sigman, M. S.\*; Shaw, J. T.\* [ACS Catal.](#) 2024, 14, ASAP, 104-115.

Bahrami, P., Blanco, D., Thetford, H., Li, Y., and **Chan**, J.Y.K. [J. College Sci. Teach.](#), 2023, 52 (6), 6 – 14.

Esteban, E.T.; Garcia, J.J.; Windover, S.R.; **Cooley**, J.A. [J. Phys. Mater.](#), 2023, 6, 045011.

A. L. Dunn, D. M. Decker, C. P. Cartaya-Marin, J. A. **Cooley**, D. C. Finster, K. P. Hunter, D. R. N. Jacques, Ann Kimble-Hill, Jennifer L. Maclachlan, Patricia Redden, Samuella B. Sigmann, and Catherine Situma. [J. Am. Chem. Soc.](#) 2023, 145, 11468-11471.

J. A. **Cooley**, J. D. Bocarsly, E. C. Schueller, E. E. Levin, E. E. Rodriguez, A. Huq, S. H. Lapidus, S. D. Wilson, and R. Seshadri. [Phys. Rev. Mater.](#) 2020, 4, 044405.

Acosta, K.; Walker, H.; **Fry-Petit**, A. M., [Nature Physics Review](#), 2023, 5, 236-249.

Neilson, J. R.; **Fry-Petit**, A. M.; Drichko, N.; Stone, M. B.; Llobet, A.; Balasubramanian, M.; Suchomel, M. R.; McQueen, T. M. [Journal of Inorganic and General Chemistry](#), 2022, 648, e202200042.

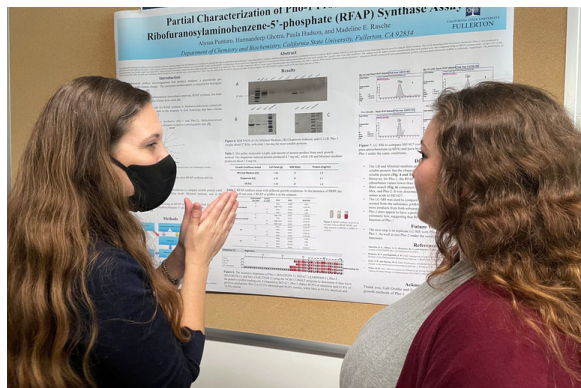
Berry, T.; **Fry-Petit**, A. M.; Sinha, M.; Zhang, Q.; Auffermann, G.; McQueen, T. M.; Rudin, S. P.; Phelan, W. A. [Inorg. Chem.](#) (2022).

Gonzalez, M.; **Groves**, M.N. [Langmuir](#) 2023, 39, 119-128.

Zeng, Y.; Dong, Y.; Zhang, X.; Yin, X.; Tuai, T.; **Groves**, M.N.; McBreen, P.H. [The Journal of Physical Chemistry C](#) 2022, 126 (46), 19667-19675.

Waters, K., Nguyen, D., Hernandez, L., Vu, K., **Fry-Petit**, A., **Pecic**, S., **Haan**, J.L. [Journal of Power Sources](#), 535, 2022, 231401.

Azusada, T; Baybay, E; Chi, J; Dole, P; Gonzalez, N; Jaramillo, E; Nguyen, T; Pivaral, A; Rodriguez, G; Zavala, J; Zayed, H; Gaspar, A; Andino, S; Nguyen, K; Pinteá, S; Nguyen, H; **Hudson**, PK, **Pecic**, S. [Results in Chemistry](#), (2023): p. 101226.



Zarrabi, A; Perrin, D; Kavooosi, M; Sommer, M; Sezen, S; Mehrbod, P; Bhushan, B; Machaj, F; Rosik, J; Kawalec, P; Afifi, S; Bolandi, SM; Koleini, P; Taheri, M; Madrakian, T; Los, MJ; Lindsey, B; Cakir, N; Zarepour, A; Hushmandi, K; Fallah, A; Koc, B; Khosravi, A; Ahmadi, M; Logue, S; Orive, G; **Pecic**, S; Gordon, JW; Ghavami, S. [Cancers](#) (2023), 15, 5269.

Alizadeh, J; da Silva Rosa, SC; Weng, X; Jacobs, J; Lorzadeh, S; Ravandi, A; Vitorino, R; **Pecic**, S; Zivkovic, A; Stark, H; Shojaei, S; Ghavami, S. [European Journal of Cell Biology](#) (2023), 151337.

Stec, J; Xie, S; Alshukri, L; Kang, GJ; **Hudson**, PK; **Pecic**, S. [Results in Chemistry](#) (2023), 5, 100860.

Angelia, J; Weng, X; Solomatov, A; Chin, C; Fernandez, A; **Hudson**, PK; Morisseau, C; Hammock, BD; Kandasamy, R; **Pecic**, S. [Prostaglandins & Other Lipid Mediators](#) (2023), 164, 106702.

Naeimi, R; Najafi, R; Molaei, P; Amini, R; **Pecic**, S. [European Journal of Pharmacology](#) (2022), 175350.

Eshraghi, M.; Ahmadi, M.; Afshar, S.; Lorzadeh, S.; Adlimoghaddam, A.; RezvaniJalal, N.; West, R.; Dastghaib, S.; Igder, S.; Torshizi, S.R.N.; Mahmoudzadeh, A.; Mokarram, P.; Madrakian, T.; Albensi, B. C.; Los, M.J.; Ghavami, S.; **Pecic**, S. [Pharmacology & Therapeutics](#) (2022), 108171.

Stec, J; **Pecic**, S. [Natural Product Research](#) (2022), 36 (8), 2158-2165.

Makarian, M.; Gonzalez, M.; Salvador, SM.; Lorzadeh, S.; **Hudson**, P.K.; **Pecic**, S. [Journal of Molecular Structure](#) (2022), 1247, 131425.

Neisser, R.N.; Davis, J.P.; Alfieri, M.E.; Harkins, H.; **Petit**, A.S.; Tabor, D.P.; Kidwell, N.M. [J. Phys. Chem A](#), 2023, in press.

Bridgers, A.N.; Urquilla, J.A.; Im, J.; **Petit**, A.S. [J. Phys. Chem. A](#), 2023, 127, 7228-7240.

Guardado, J.S.; Urquilla, J. A.; Kidwell, N.M.; **Petit**, A.S. [Phys. Chem. Chem. Phys.](#), 2022, 24, 26717-26730.

Gallardo, G.M.; Ventura, D.J.; **Petit**, A.S. [J. Org. Chem.](#), 2022, 87, 6212-6223.



## Research Updates - Grants

From 2022-2023, 8 faculty earned a total of over 2.4 million in external funding to support research with CSUF students!

New Grants		
Awardee	Grant Name	Amount Awarded to CSUF
Julia Chan	Collaborative Research: An Investigation of Synergistic Effects of Discipline-based Growth Mindset and Effective Learning Strategies Interventions in Gateway Chemistry Courses"	\$133,963
Joya Cooley	Interrogating "Cool" Pigments as a Heat Island Mitigation Strategy	\$7,125
Joya Cooley	Understanding the role of chemical pressure on thermal expansion tunability in earth-abundant materials	\$592,852
Allyson Fry-Petit	EAGER: In Situ Determination of Synthetic Intermediates - Investigating the Path to Lead Apatite Room Temperature Superconductors	\$299,990
Michael Groves	Interface Engineering for Diamond Based Electronics	\$176,065
Michael Groves	Extending NWChemEx with the Atomic Simulation Environment	\$25,800
Michael Groves, Ryan Cammarota	Planning: Developing an Underrepresented Research Student Pipeline Between CSUF and C-CAS	\$198,962
Stevan Pecic	Designed Multiple Ligands as Non-opioid Analgesics for Treating Chronic Pain	\$586,838
Andrew Petit	Using Computation to Explore New Directions in the Photochemistry of Photobases	\$70,000
Andrew Petit	Expanding CSUF Student Access to of Research Experiences Through Computation and Big Data	\$149,090
Sachel Villafane	Collaborative Research: Supporting chemistry students' science practice self-efficacy	\$197,819

