Message from the Dean:

Hello NSM Nation,

It’s late-September and our 2019-2020 academic year is well underway. After the relative somnolence of summer, our students are back bringing with them a collective thrum of energy that is omnipresent throughout our hallways. Welcome to the new academic year everyone and a special warm shout out to our newest faculty, staff and student Titans.

Now, while the academic year is still young, please take the time to identify what you want to accomplish this year. Maybe this is the year you try something new in class that goes over wildly well or you finish collecting the last set of data for that important research paper or you follow a passion and serve on a university-wide committee. Or maybe this is the year you find a best friend on campus in some other department that when you look back on these days will be in virtually all of your important memories of your time at Cal State Fullerton.

Whatever your aspirations, please embrace this start of a new academic year with all of its hope, promise, and potential. The new year gives each of us a clean slate and we can make of the future whatever we want. Here’s wishing everyone in the NSM Titan family a year filled with learning, growth, science, math, and good friendship.

Marie C. Johnson, Ph.D.
Dean, College of Natural Sciences and Mathematics
CHEMISTRY


BIOLOGICAL SCIENCE


Samples for this project were collected at the Inter-American Tropical Commision Laboratory at Achotimes Bay, Republic of Panama.

Manuscript accepted for publications with faculty and student authors:

MATHEMATICS

Faculty Bogdan Suceava, Matt Rathbun, Adam Glesser, and student Isabel Serrano published an article "eclectic Illuminism: Applications of Affine Geomoetry" in The College Math Journal, Volume 50 #2, 2019.

--------------------------------------------------------------------------------------------------

Christina Vu was published in "The California Mathematics Council - ComMuniCator" Volume 44 No. 1, September 2019

GEOLOGICAL SCIENCES


Presentations:

2019 August, Goldschmidt conference in Barcelona, Spain.

MEMETI, V., **Chambers, M., **Oppenheim, L., Barnes, C., Eddy, M., Schoene, B. 2019. Plagioclase and K-feldspar megacryst recycling in a large, prolonged magma mush, Tuolumne intrusive complex, California.

2019 May, Geological Society of America Cordilleran Section meeting in Portland, OR

*Angulo, A., **Scheland, C.L., and MEMETI, V. 2019. Petrology of Magmatic Enclaves and Mafic Dikes in the Jack Main Canyon intrusive suite, central Sierra Nevada.

*Hayward, J., **Scheland, C.L., and MEMETI, V. 2019. The nature of textural and compositional variability in the Lake Vernon granodiorite in western Yosemite National Park, CA.

MEMETI, V., **Chambers, M., **Oppenheim, L., Barnes, C., Paterson, S. 2019. A tale of crystal-melt mixing and large, prolonged magma mush bodies told by plagioclase and K-feldspar megacrysts from the inner units of the Tuolumne Intrusive Complex (invited).


Werts, K., Barnes, C.G., MEMETI, V., Ratschbacher, B., **Williams, D. 2019. Recognizing the importance of crystal accumulation on bulkrock compositional variability in silicic systems.
BIOLOGICAL SCIENCE

Biology student, Daniel Arroyo, had the opportunity to work on the Titan Rover. For Daniel, the Titan Rover has been one of the most influential projects that he has been a part of that shaped his method of thinking and career choice. Though he had worked on various research projects with a handful of outstanding professors at CSUF (Dr. Jimenez 4 years; Dr. Rasche and Dr. Robson for 2 years), Titan Rover offered him a once-in-a-lifetime opportunity to start and manage a small research group from the ground up, all while still in his undergraduate career. At University Rover Challenge, Arroyo's passion for the project grew as a result from the comradery he experienced between the teams competing and how his team interacted with other competitors. It was never about beating one another but about building the best performing rover a team could. Just by walking through the different camps, teams could hear the exchange of ideas between the engineers and scientists. If a team needed a part, others would freely offer it. This was what URC and Titan Rover is all about.

The URC is a competition hosted by the Mars Society aimed at colleges to design and build the next generation of Mars rovers that will one day work alongside human explorers in the field. With 84 teams from 13 countries applying for the 2019 competition, Titan Rover has been successful in making the 36-team cut-off to compete for the past four years with this year placing 25th place overall. The competition takes place annually for three full days at the Mars Desert Research Station (MDRS) just outside of Hanksville, Utah. Each team must build a Rover to compete in four different tasks: Science Mission, Extreme Retrieval and Delivery, Equipment Servicing, and Autonomous Traversal.

Since scientific analysis became required, which called for soil in situ analysis by the rover, the team developing the system for the Science Mission has become the most diverse in Titan Rover from the collaborations between the lab science team (geologists, biologists, and chemists) and all other sub teams. Lab science members provide insight into how the soil should be extracted for testing, how the human-machine interface (HMI) is designed, and which tests will be performed at the competition to impress the judges. During this past summer’s competition, the team focused on three tests of varying difficulty: a catalase analysis using H2O2, a functional microscope for visualizing microbial life while taking advantage of chemotaxis and magnetotaxis characteristics, and a protein extraction using ion chromatography. Though Titan Rover is focused on performing well at the competition, they have also developed a reputation for pushing the envelope every year, demonstrating to the Mars Society and other teams what is possible.

A special thank you to the NSM professors who have helped the science team with their invaluable guidance over the years: Dr. Hope A. Johnson (Biology), Dr. Madeline Rasche (Biochemistry), Dr. Adam Woods (Geology), Dr. Matthew Kirby (Geology), and Dr. Allyson Fry-Petit (Chemistry).
News of recent alums from the Chen lab:
Elizabeth Alcala (B.S. Biology, 2018) began the Ph.D. program in Microbiology at UC Berkeley this fall
Kristina Burger (B.S. Biology, 2019) began the D.O. program at Western University this fall
Francesca de la Cruz (B.S. Biology, 2019) began as a Technician at DiaSorin Molecular last spring

Jesus Ortega, a MARC scholar in Dr. Chen's research lab, did a summer research internship studying the actin cytoskeleton of Schizosaccharomyces pombe at the University of Chicago through the REU program in Molecular Genetics and Cell Biology.

Under the 2019 Amgen scholars program, Biology Student Joshua Phelan, lived and worked at Caltech alongside other participants from across the nation. Working with professor Woodward Fischer, he assessed the potential of a highly engineered fluorescent protein to quantitate manganese 3+. He also optimized and conducted bulk phosphate measurements on sediments ranging from the late Archean to the present. Amgen allowed Joshua to sharpen scientific skills by working independently on a research project. He also learned invaluable lessons from Caltech PhD students and staff scientists as well as Caltech's SFP seminar series with many notable speakers. Amgen scholars is an undergraduate fellowship targeted at prospective future PhD candidates. The fellowship allows students to live and work for 10 weeks over the summer at one of Amgen's 24 host institutions with faculty on a biotechnology related research project. Amgen scholars can find themselves at places such as Caltech, Duke, Harvard, or NIH among others.
• Evelyn Bond, a graduate student in Dr. Kristy Forsgren's lab, earned the American Institutes of Research Biologists' Best Student Poster at Southern California State University, Northridge. Her presentation was entitled, "The reproductive morphology of male surfperches (Embiotocidae; Telestei)." Congrats Evelyn!

CHEMISTRY & BIOCHEMISTRY

• Isabel Chino presented a poster, "Fuel-flexible split pH direct liquid fuel cell for alcohols," at the National Meeting of the American Chemical Society in August 2019.

• Kimberly Hendrix presented a poster, "Direct ascorbate fuel cell utilizing only carbon materials for anode and cathode," at the National Meeting of the American Chemical Society in August 2019.

• Stephanie Xiong presented a poster, "Electrochemical conversion of carbon dioxide into formate on tin surfaces," at the National Meeting of the American Chemical Society in August 2019.
The Math Department hosted a summer statistics teaching workshop in August, taught by Professor Mori Jamshidian, to help bring seasoned stats teachers up to speed with the new simulation-based curriculum. As well as to train math faculty newer stats to keep up with the zooming demands for statistics courses here at CSUF.

Nina Robson (Ph.D., Mechanical Engineering Department, top left), Cynthia Gautreau (Ed.D., Instructional Design and Technology, bottom left), and Madeline Rasche (Ph.D., Chemistry and Biochemistry Department, center of left image) received the award for “Best Poster in the Mechanical Engineering Division” at the 2019 American Association for Engineering Education in Tampa, Florida.

The poster entitled “Learning through Discovery: Empowering Lower Division Undergraduates to Engage in Cross-Disciplinary Bioengineering Research” described the outcomes of a new lower division class that includes early cross-disciplinary research experiences in mechanical engineering and biochemistry. The poster featured student successes in designing and initiating construction of a “DNA origami” nano-mechanism for the delivery of an anti-cancer drug. The goal of the early research experience is to promote the development of scientists and engineers capable of combining specialized disciplinary knowledge with fluency in a variety of disciplines.

MATHEMATICS

The Math Department hosted a summer statistics teaching workshop in August, taught by Professor Mori Jamshidian, to help bring seasoned stats teachers up to speed with the new simulation-based curriculum. As well as to train math faculty newer stats to keep up with the zooming demands for statistics courses here at CSUF.

Adam Glesser & Matt Rathbun co-presented the talk, "Problem Solving Through Board Games" at the MAA MathFest in Cincinnati, OH.
STUDENT SPOTLIGHT

Katherine Grier - Biological Science

**Major:** Biology with a concentration in Molecular Biology & Biotechnology  
**Expected Graduation Date:** August 2019

Describe your specific area of research:

I perform research in Dr. Kristy Forsgren's lab with Graduate student Justin Stuart. I spent the summer working on his project on the sperm development of surf perches.

When & how did you first get involved in research?

I first got involved in research at the end of my college career and it was the best thing that I ever did. I was taking BIO 418L with Dr. Miyamoto where we did a lab tour of Dr. Forsgren's lab. I was particularly intrigued with the students in the lab working with the microtome and wanted to know more about it. This was the beginning of a passion I did not know I had: Histology.

"Katie has significantly contributed to ongoing research in the Forsgren Lab! She is a pleasure to have in the lab." - Dr. Forsgren

What are your current career plans?

I currently am finishing up my histology license where I will work as a histotechnologist for some time before I go back to school to get my masters and become a pathologist assistant. As a pathologist assistant I hope to gain employment at a hospital where I can utilize my histology training for examining of surgical specimens.

What advice would you give current students?

Join a research lab early in your undergraduate career. Even if research is not something that you desire to do as a career because you learn SO MUCH more when you are hands on. It is a different kind of experiences that regular classes just don't satisfy. During my short time in a research lab I have strengthened my problem solving skills, worked independently on projects and built relationships that I wouldn't have otherwise. If I could go back and do anything different it would be joining a lab a lot sooner.
Salena Padilla - Geological Sciences

Major: B.S. Geology
Expected Graduation Date: June 2020

Describe your specific area of research:
Paleoseismology and Earthquake Geology

When & how did you first get involved in research?

Before transferring to CSUF, I worked on a small research project at Saddleback College, where I used seismic data to determine subsurface geologic structures. Professor Akciz introduced me to my senior thesis project about the past seismicity along the Santa Cruz Island Fault. Since July, I have also collected and compiled field data from the M7.1 Ridgecrest earthquake.

If you could thank anyone on campus, who would it be and why?

Sinan Akciz, as my thesis advisor, has been patient, understanding, and helpful in all my ideas about my research and my future endeavors. Sinan has been a great source of information and a mentor to discuss my ideas even when they are too far-fetched.

What are your future career plans?

I plan on pursuing my master's degree and continue working on a research project in a field that I enjoy. Following this I will look for a job where I will use my skills to help the community.

What advice would you give current students?

To pursue your interests to the best of your ability and to take any opportunities that present themselves. When beginning my degree, I felt intimidated that I was not as knowledgeable as others, however everyone starts at square one and learns at different speeds. Do not be afraid to ask questions and make mistakes, these all lead to a better understanding and great experiences under your belt.

"Selena seeks new challenges that help with her professional growth whether those challenges are in the field or in the lab." - Dr. Akciz
CAREER CENTER

Greeting from the Career Center! Below are the different resources NSM students can use from the Career Center.

1. To view jobs and internships, create an account on Titan Connection at https://apps.fullerton.edu/career
2. Students have a variety of ways to get career advising
   - Schedule an appointment with Chanda Ishisaka, NSM Career Specialist online at https://apps.fullerton.edu/career or Career Center website.
   - Type of appointments for students:
     * Career options and Career Assessments
     * Help with finding Job or Internships
     * Interview Prep and Mock Interviews
     * LinkedIn Profile and Use
     * Graduate School Preparation; Statement of Purpose Reviews
   - For Resume and Cover Letter review:
     * Career Center Drive Thru hours. No appointment needed. Location: LH-210
       * Mondays and Thursdays: 10am-2:45pm
       * Tuesdays and Wednesday: 10am-6:45pm
       * Friday: 10am-12:45pm

3. Attend Career Center Workshops and Events
   - Sample of workshops geared for NSM Students:
     * Wed., Oct. 9, 10am-11am: Internships for Science and Math Majors
     * Wed., Oct. 23, 11am-1pm: STEM Resume Rush
       - Kelly Services will be having a Science Recruiter come to campus and review resumes of our students
     * Tues, Nov. 5, 11am-noon: For Pre-Health Students: Health Scholars Program
     * Wed, Nov. 6, 5:30pm-7pm: Pathway to Teaching at the Community College

4. Save the Date for Career and Graduate Schools Expos (All Fairs located at TSU Pavilions)
   - Internship and Career Expo: Thurs., Oct. 17, 3pm-6pm
   - STEM Career Expo: Thurs., Oct. 24, 3pm-6pm
   - CSUF Grad Programs Fair: Thurs., Oct. 31, 11am-1:30pm
   - Graduate School Expo: Thurs., Nov. 7, 1-3pm

* For more information: www.fullerton.edu/career/students/career-fairs-expos.php

5. Faculty, Staff and Student Organizations can request a Career Workshop from the Career Center. To request a workshop: Complete the Workshop Request form or contact Chanda Ishisaka, cishisaka@fullerton.edu

From your NSM Career Specialist: Chanda Ishisaka, cishisaka@fullerton.edu, Office: LH-208
UPCOMING EVENTS

MATHEMATICS

Department Colloquium Series
Friday, October 11th, 2:00pm-2:50pm in McCarthy Hall 480
Polona Durcik (Caltech) On Some Integral Inequalities, Non-Singular and Singular

Wednesday, November 6th, 4:00pm-4:50pm in McCarthy Hall 380
Robert Tomaszewski (Pollack Library, Cal State Fullerton) Bibliometric Studies and Citation Analysis in the Chemical Sciences

SACNAS

The CSUF SACNAS Chapter is hosting a poster session to prepare CSUF STEM students for presentations at Fall professional conferences. Any STEM student who is presenting a poster at a professional conference in Fall 2019 is welcome to come to present. In addition, any student who submitted an abstract to present a poster at the SACNAS conference is welcome to present at our session, whether or not the abstract was accepted for the conference.

To register to present, students should fill out this form:
https://forms.gle/V4465tCuQLX8oe4w9

STUDENT SUCCESS CENTER

The NSM Student Success Center (MH-488) provides a multitude of services for CSUF students. We offer free, drop-in tutoring for science and math courses, as well as study tables, printing, and a space for quiet studying. Students can meet with members of the NSM Student Success Team for GE advising, career advising, and to learn about getting more involved in the college.

To find out more information visit their website at:
https://nsmssc.weebly.com/
The RAISE Transfer Program (RTP) welcomed 96 students this semester. RTP continues to grow and support STEM transfer students through their transition to CSUF.

RTP Benefits:
- Resources for academic success
- Support from Peer Advisors and Academic Success Coordinator
- Direct connection to academic, graduation, and career specialists
- Assistance with preparing for paid summer internships through the Summer Internship Program (SIP)
- Access to campus resources
- Priority Registration

Fall 2019 RAISE Transfer Program Kickoff
Fall 2019 Workshops and Events
RTP offers various workshops each semester to all students.

RAISE TRANSFER PROGRAM
FALL 2019 Workshops and Events

RAISEwalks
McCarthy Hall 175
- Tuesday, September 10th 12:00 p.m. - 12:45 p.m.
- Pollak Library Tour
- Wednesday, October 9th 9:00 a.m. - 9:45 a.m.
- Fullerton Arboretum
- Tuesday, November 5th 12:00 p.m. - 12:45 p.m.
- Student Recreation Center

Scholarship Workshop
Transfer Resource Center (TRC) MH-525
Tuesday, September 17th 12:00 p.m. - 12:45 p.m.
Wednesday, September 26th 11 a.m. - 11:45 a.m.

Sharpen Your Soft Skills
Tuesday, October 1st 10:00 a.m. - 12:00 p.m.
TSU Gabrieliño - Lunch will be provided
RSVP by 9/23 @ www.fullerton.edu/projectraise

Study Skills Workshop
Transfer Resource Center (TRC) MH-525
Tuesday, October 15th 12:00 p.m. - 12:45 p.m.

Employer Site Tour
OC Crime Lab
Friday, October 11th 8:00 a.m. - 1:00 p.m.
Transportation will be provided as long as there is enough students signed up. Seats are limited. RSVP by 10/4 @ www.fullerton.edu/projectraise

STEM and Transfer Student WEEK
October 21-24
More information coming soon!

STEM Summer Research Student Panel
Monday, October 21st 5:00 p.m. - 6:00 p.m.
Location: TBD

STEM Internship and Career Expo
Thursday, October 24th 3:00 p.m. - 6:00 p.m.
TSU Pavilions - For more information, please visit: www.fullerton.edu/career

End of Semester Event
Friday, December 6th 11:30 a.m. - 1:00 p.m.

Questions? Please contact Angela Sardan-Long at asardan@fullerton.edu or 657-278-2164.

Need a place to study? All students welcome at the Transfer Resource Center (TRC)!
The Transfer Resource Center offers a place to study, electrical outlets, white boards, break area with microwave, information about campus resources and access to Project RAISE Peer Advisors.

Fall Hours: Monday – Thursday 9 a.m. – 7 p.m. and Friday 9 a.m. – 12 p.m.
McCarthy Hall-525
657-278-8398

Please contact Angela Sardan-Long at asardan@fullerton.edu if you have any questions.
NSM Clubs and Organizations

Contact any of the organizations below to find out their meeting and activity information.

American Association of Petroleum Geologists (AAPG) is an organization focused on educating and connecting students of any major to the oil industry through the use of key speakers and student expositions.
AAPG@fullerton.edu

American Medical Student Association (AMSA): Committed to improving health care and healthcare delivery to all people. Promotes active improvement in medical education. Involves its members in the social, moral and ethical obligations of the profession of medicine. Assists in the improvement and understanding of world health problems. Contributes to the welfare of all pre-health professional students. AMSA@fullerton.edu

Beta Psi Omega Professional Biology Fraternity is a student organization with the primary purpose of helping students help themselves. Our overarching mission is to provide a supportive brotherhood for students pursuing the biological sciences professionally and academically and to further the advancement of biology as a science and as a profession. It is committed to serving the needs of students and thereby the community. Beta Psi Omega aims to provide passionate students with opportunities, insights, and guidance to success. beta@bpsiomega.org

Biology Graduate Club (BGSC): Offers opportunities for association and interaction between CSUF students, faculty, and administration. bgsc.csuf@gmail.com

Chemistry and Biochemistry Club (CBC): Provides information pertaining to opportunities and careers with the fields of Chemistry and Biochemistry. Familiarizes students with department opportunities. Conducts community outreach. csuf.cbc@gmail.com

CSUF Pre-Dental Society - Through general club meetings, guest speakers, dental school visits, and much more, our pre-dental members can gain the knowledge they need as well the necessary tools to be a competitive dental applicant and apply to dental school. csuf.predentalsociety@gmail.com

CSUF Pre-Optometry Club - Aimed accommodate students interested in the field of Optometry in order to educate themselves more about the healthcare profession and network with other students and professionals with similar interests. csufpreoptometryclub@gmail.com

Flying Samaritans - Our purpose is to provide health care to people living in the rural areas outside of Tecate, Mexico. Volunteers have the opportunity to assist in administrating, translating, taking vital signs, shadowing health care providers, and working in the pharmacy. Also, our members get the opportunity to experience medicine and another culture first hand. flyingsamselhongo@gmail.com

Geology Club: Unites geology majors and others by providing related information and volunteer activities on and off campus. geologyclub@fullerton.edu
Latino Medical Student Association Pre-Medical Latino - Undergraduate Society (LMSAPLUS):
Anyone interested in medical school can join LMSA, you do not need to be of Latino/Latina heritage!
lmsa.plus@exchange.fullerton.edu

Math Club Promotes involvement for students and faculty in the mathematical community. The club encourages students to start joint research projects with faculty and attend conferences nationwide for observation and/or presentation. Its activities bring together all levels of math majors in one setting, such that new students can be involved. Most Math Club members continue their education as a graduate student.
csufmathclub@gmail.com

NSM Inter-club Council (NSM-ICC): NSM clubs and students collaborate with each other and Associated Students (ASI) to provide events and travel funding to all NSM and CSUF students. The NSM – ICC organizes the NSM Symposium, Meet and Eat with the Deans and Chairs. nsmicc.csuf@gmail.com

Physics Club: Organizes lecturers from guest speakers as well as several events a year. All CSUF students are welcome. Physicsclub.csuf@gmail.com

Pre-Veterinary Club - The Cal State Fullerton Pre-Veterinary Club is an organization on campus that is open to all students who have interest in pursuing veterinary medicine. The club provides exposure to various aspects of veterinary medicine including hands-on experience, veterinarian speakers, social events, and community service opportunities throughout the semester. prevet.csuf@gmail.com

SMART Girls Support Group (Sisters in Mathematics and Academic Relations in Teaching): Holds monthly meet-ings, study sessions, and provides access to advisors. Learn how to be successful in math courses, relate undergraduate courses to high school teaching connect to school tutoring in schools and networking. Males may join as associate members. csufsmartgirls@gmail.com

STEM Outreach Club: Builds a community with your peers. Forms study-groups. Gets involved in the community. Helps promote science. And much more! ALL MAJORS WELCOME! csufmentor1@gmail.com.

Student Health Professions Association (SHPA) - Informs students about the opportunities available in the various health professions. Furthermore, the club provides volunteer opportunities for students to get involved in the community, campus life, American Red Cross blood drives, and work closely with the Health Professions Advising office which is dedicated to assisting students in getting admitted to health profession graduate schools. csufshpa@gmail.com

SUCCESS (Students United with Community Collaborators to Enhance Success in Science): Consists of students from all STEM disciplines who are interested in undergraduate research and collaborate together to hold workshops and events for CSUF students. SUCCESS@CSUF@gmail.com