ISSUE 8 | 2024

DISCOVERY

CalPolyPomona

College of Science

INSIDE

COVER PHOTO: Graduating science students Katie Cheng and Alessio Sommacal jump for joy at the May 19th Commencement Ceremony. Both are student athletes. Sommacal is an international student from Italy and was a member of the track team. Cheng played on the women's soccer team. Both graduated with BS degrees in biotechnology and minored in chemistry.

Photographer: Tom Zasadzinski

DISCOVERY MAGAZINE
a publication of the College of Science

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OUR VISION

Fostering curiosity and a culture of scientific discovery

OUR MISSION

Educate, mentor, and inspire students through scientific inquiry and hands-on learning

CORE VALUES

Curiosity
Integrity
Collaboration
Inclusivity
Innovation

DEAN'S MESSAGE

In this issue of Discovery Magazine, you'll find many examples of how the College of Science at Cal Poly Pomona is serving the community and using the power of science to improve lives. You'll learn about biology research that can help decrease pesticide use, and how AI is being used to increase mobility scooter safety. You'll read about the Gift of Numbers program that brings elements of fun and play into elementary school math education, and you'll hear about the BASES program that supports black student success in STEM.

These are just some of the ways that the College of Science is serving the community. There are countless alumni who are using their education to improve their communities. One example is alumnus Jeremy Lancaster ('00, geology), who now serves the citizens of the State of California as State Geologist.

Because of the quality of our faculty and their dedication to mentoring students, some students are inspired to become teachers themselves in order to give back. That was the case for Cal-Bridge Scholar Angelica Whisnant who just graduated with a degree in physics and is now pursuing a Ph.D.

Thank you for supporting the College of Science.

-Dean Alison Baski, Ph.D.

College of Science Research may Reduce Pesticide Use

In the Santa Clara River Valley something is happening on the edge of some avocado and citrus orchards. Researchers are planting hedgerows and floral strips that may help reduce the need for some pesticides. The effort is being led by Associate Professor of Biological Sciences Elizabeth Scordato. She is principal investigator (PI) on the Agricultural Research Institute (ARI) funded project called "Incorporating native vegetation into a landscape-scale Integrated Pest Management program in Ventura County."

Scordato's primary research interest is avian evolution and that includes animal behavior and ecology. Many bird species are natural predators of arthropods, pests that can destroy crops. Arthropods increase the need for pesticides which account for over 5% of agriculture production costs.

The central idea of the research is to see if planting native vegetation close to orchards can decrease the amount of pesticides that are needed. The plantings attract predators to the orchards that will eat bugs and possibly rodents as well.

Joining Scordato as Co-PI's from the Department of Biological Sciences are colleagues Rachel Blakey and Department Chair Erin Questad. Blakey is studying the potential of local bat populations as predators. Questad has an extensive background in native plant restoration.

There are two Co-PI's from other institutions on this three-to-four-year project. They are Adam Lambert from UC Santa Barbara who has been lead on several restoration projects in the area since 2006 and has relationships with NGOs and growers, and Ted Stankowich from CSULB who has maintained large scale camera and small mammal tracking projects.

Collaborators on the project include Dr. Ben Faber and Dr. Hamutahl Cohen from UC Agriculture and Natural Resources. Farber is an expert on citrus and avocado cultivation and integrated pest management in Ventura County; Cohen is coordinating pest control advisors (PCAs) to monitor pest outbreaks in orchards. The team also includes District Scientist Jamie Whiteford from the Ventura County Resource Conservation District who manages agricultural and environmental stewardship projects in the Santa Clara River Valley.

The Santa Clara River Valley is the largest unchanneled river in California and the state has made preservation and restoration a priority. This research may offer insights into how the state's restoration efforts may affect agriculture and how agriculture might affect restoration.

For the research, new plantings will use a combination of native perennials like coastal sage (Artemisia californica), purple sage (Salvia leucophylla), and elderberry (Sambucus nigra); species that attract generalist arthropod predators like California buckwheat (Eriogonum fasciculatum) and sweet alyssum (Lobularia maritima); and species that attract pollinators like milkweed (Asclepias fascicularis). Citrus self-pollinates but farmers need pollinators for the avocados.

The region produces a large portion of the state's lemons and avocados and Ventura County produces a variety of crops worth over $2 billion a year. This research spans twelve agricultural properties, which includes the CPP-owned Pine Tree Ranch.

"The project required gaining the cooperation of farmers who were receptive to the idea of using biological methods to decrease the need for some pesticides. They want to be good stewards of the land," Scordato said.

The farms employ PCAs to monitor pest activity and the researchers are using their data to help evaluate how environmental variations affect insect predation. "We have an important PCA training program here at CPP and a lot of the PCAs on these farms are CPP alumni," Scordato said.

The project is providing important, practical experiences that help prepare students for work. Graduate student Christian Cormier is interested in understanding how bird communities use different habitats. "I'm curious how the structure of an orchard (foliage density, canopy height, fallen leaf coverage) affects the community assembly of birds," Cormier says. This experience supports his ultimate goal to work as a conservation biologist specializing in birds.

"We've found that there are significant differences in insect predation pressure between the avocado and lemon orchards. Insect models in lemon orchards are predated nearly four times more often than in avocado orchards, potentially indicating stronger avian pest control in lemon orchards," said Cormier.

Another graduate student, Betty Wong, wants to work in conservation supporting biodiversity for a federal or state agency. Wong was involved in the deployment of the camera traps used to monitor wildlife activity. There are about 20 cameras used on this project and they found something interesting.

"We found significantly more wildlife activity in the agricultural orchards as compared to the natural riparian areas, which is interesting because we would expect to see a greater amount of activity in the natural areas. In relation to bobcats specifically, I have also seen quite a few orchard sites with especially high bobcat activity!"

Bobcats, coyotes, and badgers are predators of rodents that destroy crops. Farmers shared that the coyotes also damage their irrigation equipment so some predators are more desirable than others.

Wong said, "The camera trap analysis I worked on for this project gave me tons of experience in monitoring wildlife with trail cams. I would like to think it prepared me to get a field tech job with the California Department of Fish and Wildlife!"

Using AI to Increase Mobility Scooter Safety

Professor Tingting Chen from the Department of Computer Science has acquired an NSF grant to improve safety for individuals using mobility scooters. Machine learning will be used to evaluate users' ability to safely maneuver the mobility scooters, providing a valuable tool to doctors and physical therapists, as well as the users themselves.

Cal Poly Pomona, a Hispanic Serving Institution (HSI), will collaborate with an interdisciplinary team from another HSI - University of Texas, San Antonio (UTSA) and partner with Casa Colina Hospital, and the Center of Achievement, CSU Northridge.

"Medical informatics has always been an interest of mine," Chen said. "Doctors may prescribe a scooter and therapists work with patients but many patients have multiple diagnoses with symptoms that change or progress over time. This will be a tool that we think can improve safety and prevent injury and death."

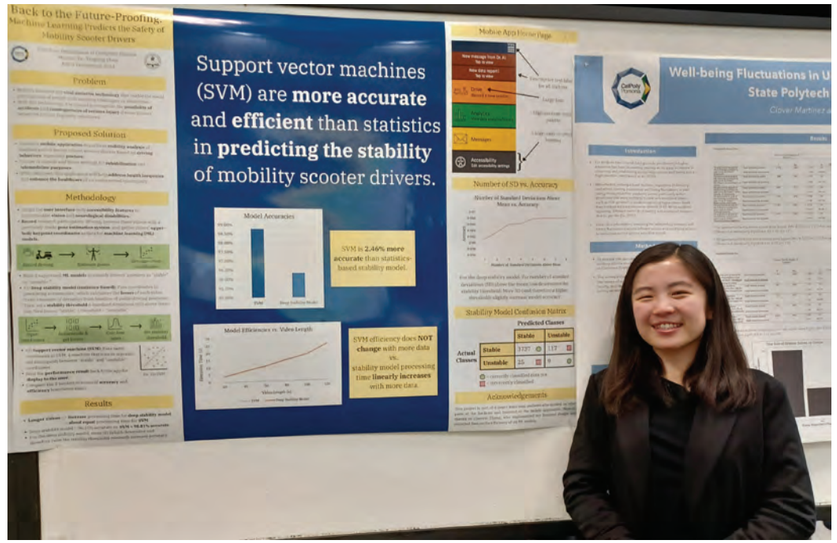
The team will use sensors attached to a raspberry pi board. The sensors will monitor scooter motion, acceleration, and capture video of the driver.

Associate Professor Mai Narasaki-Jara from the CPP Department of Kinesiology and Health Promotion will work with Chen to provide the expertise needed to train the software. "She invited me to participate because of my background in biomechanical movement analysis in individuals with disabilities. My research specialty involves gait and balance analysis," Narasaki-Jara said.

Kinesiology students will gain experience conducting movement analysis, investigating postural sway, and self-efficacy in the use of a Mobility Scooter for first-time users. "I'm assessing and looking for things that help with qualitative data such as when their posture changes and why it does. I also help with labeling, using software created by the computer science team," graduate student Joshua Rogers said. Rogers is working on a master's in adapted physical education.

Computer science student Cleo Yau developed two machine learning models that they are using to evaluate driver safety. One model is a support vector machine and the other is based on the statistics of their input data. "We record videos of driver's upper bodies and collect their key body point coordinates. The kinesiology team looked at the videos frame by frame and labeled them stable or unstable. Each set of coordinates was used to train the machines to evaluate driver stability," Yau said.

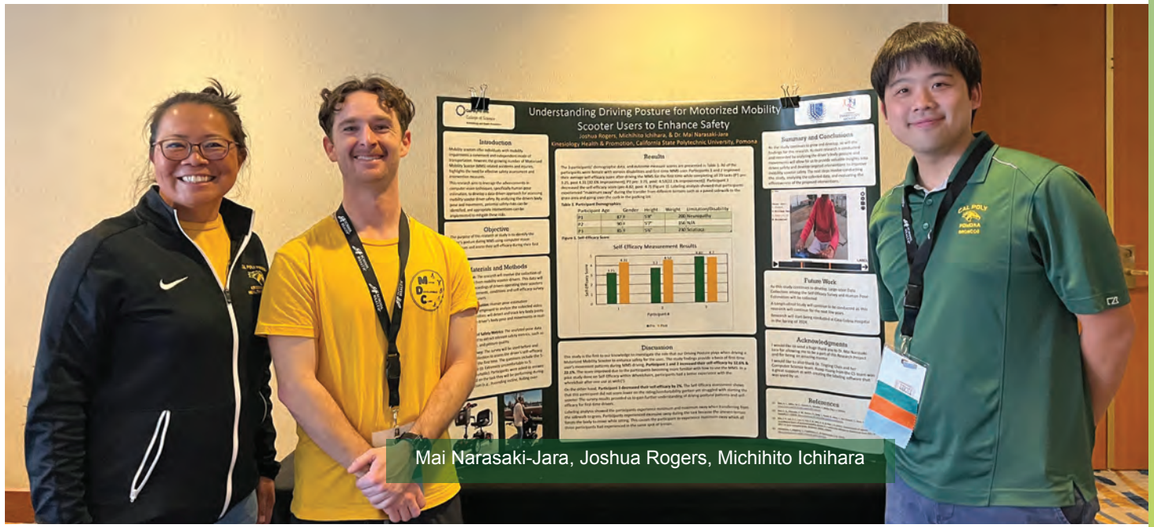
> "The ultimate goal is to do something that will positively affect the community."
>
> - Cleo Yau (right)



The ultimate goal will be to have software on a mobile device for the mobility scooter driver and a desktop app for doctors and therapists. "I did the front-end design of the mobile application. I learned about making interfaces more accessible and I realized how many applications are not accessible," Yau said.

"I gained insights into various research methodologies, data collection techniques, and analysis procedures. This research experience also gave me opportunities to improve my professional communication skills and learn how to conduct collaborative research," kinesiology graduate student Michihito Ichihara said.

Yau, who graduated in May, wants to work in machine learning and AI. She said, "The ultimate goal is to do something that will positively affect the community. Accessible technology can support marginalized communities. That's why I like this, because it will have an impact."



Mai Narasaki-Jara, Joshua Rogers, Michihito Ichihara

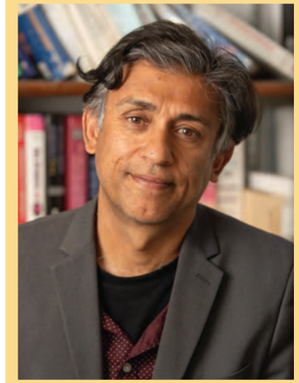
AWARD WINNING FACULTY

JUANITA JELLYMAN
Biological Sciences

Provost's Award for Excellence in Teaching

Juanita Jellyman embodies the learn-by-doing philosophy by dedicating significant time to teaching outside the classroom through mentoring student research projects. She has received four Teacher-Scholar Grant awards.

As faculty supervisor of the Human Physiology lab, she mentors 4-6 graduate teaching assistants each semester. In 2018, she was recognized by the Center for Advancement of Faculty Education (CAFE) for her use of technology to enhance student learning and success and was added to their Wall of COOL.



AMAR RAHEJA
Computer Science

Outstanding Faculty Advisor of the Year

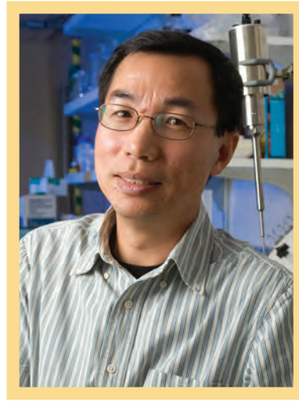
The Outstanding Faculty Advisor Award recognizes the extraordinary efforts on this campus to support student success. Amar Raheja is Professor and Associate Chair in the Department of Computer Science (CS) and is being recognized for his outstanding service to students.

Raheja provides advising for around 1,300 majors as well as students interested in changing majors. He serves as liaison for CS program mapping for transfer students from community colleges. Raheja's record serving as a thesis/project advisor for over 40 master's students and his mentoring of undergraduate students in research projects are examples of his dedication to student success.

BERIT GIVENS
Mathematics and Statistics

Outstanding Advising Partner Award

Berit Givens is a Professor in the Department of Mathematics and Statistics and served as department chair for eight years. The award recognizes individuals who provide exceptional support to advising and student success initiatives on campus. The department serves all majors on campus and Givens has played a crucial role in making Cal Poly Pomona a place where students can achieve their academic, professional, and personal goals.



JUNJUN LIU
Biological Sciences

Ralph W. Ames Distinguished Research Award

Junjun Liu is a molecular biologist studying the mechanisms that underlie the regulation of metastasis in breast cancer cells. His research is relevant in advancing the understanding and treatment of breast cancer. A secondary area of interest is in studying antibiotic-resistant bacteria that poses a threat to the poultry industry.

Liu has published 18 papers in high impact journals, and reviewed for 12 journals and six funding agencies. He has acquired $1.3 million in grants, and sponsored 18 master's students and more than 50 undergraduate students since he joined CPP in 2008. By incorporating his research into coursework, Liu prepares students for careers in biotechnology, biomedicine, or further graduate studies.

COLLEGE OF SCIENCE

DISTINGUISHED TEACHING AWARD

In 1999, the College of Science launched its Distinguished Teaching Award program. Designed to recognize and reward teaching excellence in the College of Science, the award also serves as a medium through which the honorees share their pedagogical approaches and enthusiasm for the educational process with their peers.

NICHOLAS VAN BUER
Geological Sciences

Nicholas Van Buer is a field-oriented petrologist who began teaching at CPP in 2014. He's developed 24 multi-day field trips to provide enhanced learn-by-doing educational opportunities for students. While on sabbatical, he hiked 500 miles while filming a 12-part YouTube series on geology to share with students. Van Buer has mentored 30 student research projects, leading to 15 completed senior theses. He engages students by incorporating hands-on scientific problem solving in the classroom.

ELIZABETH SCORDATO
Biological Sciences

Elizabeth Scordato is an evolutionary biologist who uses field work and genomic analysis to understand how human activity affects the evolutionary process in barn swallows. Since joining CPP in 2017, she has completely restructured BIO 3240 (Evolution) and reduced DFW rates and course equity gaps. Scordato has created and taught a graduate course in scientific writing which prepares students for completing their degree by providing valuable feedback on their thesis introductions.

Challenge Ropes Course Helps Teams Reach New Heights

When you hear names like Pirate's Crossing and Indiana Jones Bridge you might think of action and adventure. You wouldn't be wrong. They are part of the Challenge Ropes Course developed and managed by the Department of Kinesiology and Health Promotion in the College of Science.

The Challenge Ropes Course is an adventure, but it's much more than that - it's about team building. Facilitators take groups of up to 25 through a variety of activities and challenges that require them to collaborate, communicate, solve problems, build trust, and share triumphs.

The driving force behind establishing the course is Professor Ken Hansen. "I was hired largely due to my expertise in outdoor/adventure education," Hansen shared. "During my interview, I expressed the desire to build a challenge course here on campus which was received quite well by faculty because of the type of learning that is possible on a challenge course."

Since its inception in 2015 the course has been used for classes in the Kinesiology and Health Promotion General Activity Program which is open to all CPP students. It's also used for courses on teaching methods for kinesiology majors who are planning to become P.E. teachers.

Another group that uses the course consistently are the Bronco athletic teams. They benefit from course activities that increase team bonding, communication and group cohesion.

While the course is open to any group of faculty, staff, or students on campus, many don't know that it's also open to groups from local schools and businesses. There is a fee associated with the course which is led by expert facilitators who are physical education instructors. They can tailor an event to fit the needs of individual groups.

Course manager and kinesiology lecturer Jack Beckley wants people to know that the activity is very safe. Participants do a lot of groundwork before climbing the ropes. "We train them how to use the harness and practice what they'll do once they're up on the ropes," Beckley said.

"Jack and his crew know how to help get the nerves out so you can enjoy your day and not be scared of what's to come," Keiana Hamm, CPP track team member said. "My favorite part is being allowed to do flips and hang upside down as you leave each challenge. Great team bonding experience!"

"I think that getting the team together at the challenge ropes course is always a fun and exciting way to break the ice and build some trust," Kailen Smith, CPP track team member said. "Being able to let loose with the new team while also being competitive is something that we remember throughout the season. It's a great way to introduce everyone."

"My favorite part of the Challenge Course was seeing our students push themselves and overcome their fears," said Mayra Vasquez, Academic & Career Services Coordinator at the Social Justice Learning Institute. "It was a great opportunity for our students to build a bond with one another and challenge themselves."

If your group is up for a challenge and could benefit from communication enhancement, problem-solving, trust building, and lasting team cohesion contact Challenge Course Manager Jack Beckley: challengecourse@cpp.edu, jcbeckley@cpp.edu.

Rates for CPP staff, faculty and students are $40 per person for four hours and $45 per person for six hours. Off-campus groups pay $50 per person for four hours and $55 per person for six hours.

“Stay curious and keep learning. Don’t worry about making mistakes – learn from them.”

CPP Alumnus Appointed State Geologist

Alumnus Jeremy Lancaster (’00, geology) was appointed to the top post of State Geologist for the California Geological Survey (CGS) with the Department of Conservation in October, 2023.

The CGS is focused on providing scientific products and services relative to the state’s geology, seismology, and minerals that affect the health, safety, and business interests of the people of California. It also partners with local government and stakeholders, as well as the California Office of Emergency Services, to advance planning and preparedness for natural and human-caused hazards (from the Department of Conservation press release).

Geological Sciences Department Chair Jonathan Nourse said, “Jeremy was well liked by fellow students and professors. He shined as a student by stepping up to help out in the field as well as the classroom. He aimed to do well, and we’re very proud he reached that goal.”

Q & A with Jeremy Lancaster

What was your time at CPP like?
My time at Cal Poly Pomona was very enjoyable. I started as an environmental engineering major, potentially doing geology as a minor. When I started doing geology, I just loved it. It resonated. Part of it was the accessibility of instructors, before and after class, being able to have discussions about engineering geology. Dr. Larry Herbert, who is recently deceased, was a hard charger. He pushed people. I appreciate that there were high expectations. The learn-by-doing resonated with me. We spent time in the field looking at rocks, looking at faults, looking at landslides. Every 2-3 weeks I was out in the field.

I did a senior field study through South Dakota School of Mines and the University of East Illinois. Most students in that field camp were from the Midwest and we had a massive leg up in terms of field identification. We ran circles around their top students because we had been in the field so many times looking at minerals, rocks and the geologic framework of the earth.

How did you become interested in Geology?
For part of my childhood I lived by Joshua Tree and spent a lot of time entering mines doing archeological investigations and looking for minerals like gold, copper, and pyrite with an adventurous dad. It’s probably why geology resonated with me. It felt like home.

How did your education at CPP prepare you for work?
There were three or four courses and the professors who taught them that were foundational to me. Jon Nourse taught geotectonics from the macro scale of earth’s plates/structure, crustal plates and how they interact with the mantle and move, down to the micro scale at fault level, with earthquakes. It was the teaching in that course that translated into a strong interest in geohazards.

I took geomorphology with Larry Herbert. It had a lot to do with landslides. I did a senior thesis on landslides in Chino Hills and mapped 60 square miles of landslides. That thesis was a springboard for my career. I’ve worked 24 years in my career and 80% was in landslides.

I took geotechnology with Jon Nourse which is also hazard focused and it exposed me to things like when building a dam, how to look for landslides and faults that might impact a dam, and how water destabilizes hillslopes and retaining walls.

Did you find mentors at CPP?
Both Jon Nourse and Larry Herbert were mentors to me. Larry was a great mentor. He put a lot in front of me. He was always encouraging me to learn. He led me to discover how much I could learn on my own. He’d say, “I need you to do these things, but there are these other things, why don’t you think about them too.” He was a very positive gentleman. Jon Nourse is someone who really enjoys the geosciences and was always willing to explain something or talk about geology. The thing I really appreciate about him is he can take a very complex subject and break it down into very basic understandable language. Over the years I’ve had to learn to communicate to non-scientists and Jon was a great model in this respect.

Are there any trends in geology that current students should focus on?
There are a lot of trends toward more computational analysis in the geosciences. Those are important but field truthing the work is just as important. Don’t lose sight of it. You might have the greatest model on earth but if you don’t know how to collect the basic data that goes into the model, and the errors associated with the data, or how to test the model with field truthing, you’re really missing an important factor that will add to the accuracy and credibility of your work. Advanced tools are amazing but you still need to get out and look at the ground, look at the rocks, see if your model makes sense.

What advice would you give college students in terms of preparing for their career?
Stay curious and keep learning. Keep your head down and work hard. Don’t worry about making mistakes – learn from them. Always look at a situation, no matter how painful, that you’re going to learn from it and it will make you better. At the end of our careers, we’re an expression of everything we’ve experienced. The more challenges you’ve had, the stronger it makes you. Hardship and mistakes make you sharper. Don’t be daunted, always move forward.

BASES Supports Black Student Success

The Black Achievement Success and Engagement in Science (BASES) program was designed to build a community of support for students who identify as Black/African American. It's open to all majors with an emphasis on science because of a student retention gap in science from first to second year. Thirty-one Black first-time freshman are currently participating in BASES.

The program supports student success in a number of ways. There's a $750 merit-based scholarship available to participants. There are at least three peer mentoring sessions each semester, and private tutoring in math is available. The program also includes co-curricular activities every other Wednesday and one group excursion every semester. Some of the events are done in collaboration with the Black Resource Center (BRC).

There are GE credited courses that participants take. One is a First Year Experience (FYE) course that connects students with campus personnel and resources. There's also a signature polytechnic experience (PolyX) course in health & wellness.

"Black identity is the lens through which the courses are taught," said BASES Director Zakkoyya Lewis-Trammell from the Department of Kinesiology and Health Promotion. "Students learn important skills that impact their college success; they learn communication skills, how to conduct research, and how to cite scholarly work."

The 2022 second year report on the program shows cohorts one and two had GPAs one half a grade higher than peers who didn't participate. Students also said they had a better understanding of how race shapes their lived experience. They gained appreciation of their Black/African American identity and understanding of Black/African American excellence.

"The BASES program provided mentorship and resources that helped me become more involved on campus and learn about my identity," computer science student Britney Collier said. "My favorite aspect is the community building. During class meetings and Wednesday night events we're able to engage with peers."

"It's a great first-year program because the guidance and resources you receive help prepare you for the rest of your college experience. I highly recommend this program to first-year CPP students," Collier said.

Another program that supports student success and provides a seamless link to BASES is the Residential Intensive Summer Education (RISE) program. Black/African American CPP freshman and high school students attend a free five-day, four-night stay on campus and meet fellow students, faculty, and staff.

The RISE program assists rising high school sophomores, juniors, seniors, and incoming first-time freshmen to navigate the college transition and/or application process. The BASES program is able to continue supporting student success through the first year.

BASES was started in 2021 with a Kellogg Legacy grant. There were 14 students in the first cohort, 23 in the second, and 31 in the third. Lewis-Trammell said that in order to continue the program they're seeking funding both internally and externally. If you are interested in supporting the BASES program, please contact Bill Burrows: bdburrows@cpp.edu (909) 869-4160

The Gift of Numbers

Twenty years ago a program was born at CPP called The Gift of Numbers. The concept was simple, take CPP students into elementary, middle, and high schools to teach math. The students are liberal studies and math majors who are pursuing teaching careers and they bring enthusiasm and innovative ideas that engage and excite students about learning math.

"Taking enthusiasm from math is unforgivable. When someone says, 'I'm not a math person' they got that from somewhere. Everyone is a math person," said math Professor Greisy Winicki-Landman. Landman took over the program shortly after arriving at CPP 19 years ago and still glows with enthusiasm when talking about it.

The program has two goals, first to provide a teaching experience, and second to make math more interesting and engaging. There are no calculators or worksheets. "They have to build, they have to discover, they have to do stuff," Winicki-Landman said.

It provides early field experience for CPP students. Each instructor does it their own way and makes sure it's related to the curriculum and fits with the age range and the California Mathematics Framework.

"Mathematics can be fun. Our students learn that these teaching techniques really work. They see the kids light up when things are done in a fun way," said Winicki-Landman.

The program is so popular that they get more requests than they can accommodate. Currently the program is provided to Pomona Unified and Upland Unified school districts. How it works is that CPP students prepare age-specific learning materials and each has a station. Kids move from station to station, staying 5-10 minutes at each. Some schools give the kids extra credit. Sometimes the program is offered at night so parents can participate, allowing them to take the games and activities home to do with their kids.

Often, the teachers who are hosting the events incorporate these activities in their classrooms because they see how effective they can be.

Math major Gloria Diaz presented a mathematical game similar to Sudoku. Students are asked to fill a grid using cubes to build skyscrapers of different sizes in a row or column.

"What I learned from this experience is that sometimes you must let kids struggle a little. I found myself holding off on giving them hints. Most of them were able to get the answers and feel even better about themselves for getting it on their own," Diaz said.

Diaz, who is bilingual, was able to engage with Spanish speaking parents.

"The parents became more involved. I think that's the ultimate goal of an educator, to involve everyone so that students have a great support system," she said. "This experience allows them to understand what it is to become a teacher," Winicki-Landman said. "They may discover it's not for them, or more often, it may confirm how much they love teaching."

Physics Student Discovers her Calling

When alumna Angelica Whisnant ('24, physics) was in high school, she considered the possibility of majoring in physics, but was afraid it might be too hard. She did it anyway, figuring she could always switch majors if necessary. She didn't feel prepared for the challenges of college.

"Navigating college was new to me. My parents had attended college but neither graduated," Whisnant said.

Finding a mentor in Professor Povich and becoming a member of Cal-Bridge provided the guidance and support she needed. "Professor Povich suggested I join Cal-Bridge. It was a big help," she said. They provide workshops on professional development and guidance on applying to grad school.

Whisnant recalls taking her first astronomy class with Suketu Bhavsar. She found it fascinating and would visit during his office hours to ask questions. She had many questions about the universe, and often, as is the case with many scientific questions, his answer was "we don't know."

The desire for answers fueled her scientific curiosity and led her to work with Professor Povich on the Milky Way Project where they measured the shape parameters of bow shock nebulae. It's a collaborative effort run on the Zooniverse platform. Whisnant created the website where data is uploaded and shared. Students in CPP astronomy courses, overseen by Whisnant, conducted research.

Professor Povich said, "She wrote a companion worksheet activity that helped students connect the citizen science activity to some core astronomy concepts we cover in class. So this was a really good fit for a student who is interested in both research and teaching."

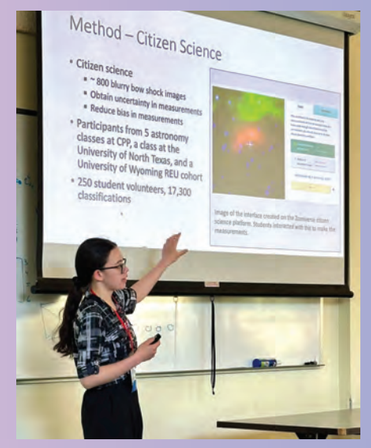
After receiving preliminary data, Povich suggested Whisnant present it at the poster session of the American Astronomical Society (AAS) Meeting in 2023. So many fears entered her mind. She had never traveled farther than San Diego, or been on a plane, and the event was in Seattle. She would be put on the spot, with professional astronomers asking her questions about the research. What if she didn't know the answers? Even her parents were apprehensive about her making the trip.

She faced her fears and went anyway. "I'm nervous speaking in public but when people started asking me about my research it got to the point where the nerves turned into excitement. It was exciting that people were interested and the time just flew by," she said. "I grew through that experience of presenting."

"I'd always thought teaching might be for me. The experience of talking with others about subjects I'm passionate about gave me the confidence that it'd be a good fit."

Whisnant is grateful for the opportunities she's had at CPP. She was a member of the Kellogg Honors College, was a Cal-Bridge Scholar, and worked as a Learning Assistant. Like many recent graduates, Whisnant started CPP during the pandemic and relished opportunities for in-person learning and face-to-face engagement. She appreciated the friends she made through membership in the physics club. In addition to that, she said, "Professor Povich is a really great mentor. I want to go to grad school and he's been a great help in guiding me toward that."

Whisnant has been accepted into the Ph.D. program in astronomy at The Ohio State University and plans to become a college professor. "I'd always thought teaching might be for me. The experience of talking with others about subjects I'm passionate about gave me the confidence that it'd be a good fit," she said. "It will also allow me to continue conducting research and to give back for all I received."



Professor Matthew Povich is the lead scientist for the Milky Way Project which enlists citizen scientists to help make observations and collect data. One of the Milky Way Projects is called Mass-loss rates for OB Stars from IR bow Shocks. OB stars are massive stars and solar winds from them push gas and dust into an arc shape around other stars creating bow shock nebulae. Angelica Whisnant created the website where data is uploaded and shared. The project resulted in more accurate measurements which will allow more accuracy in determining mass loss rates.

The image on the right is a bow shock around the star Zeta Ophiuchi. Image credit: X-ray: NASA/CXC/Dublin Inst. Advanced Studies/S. Green et al.; Infrared: NASA/JPL/Spitzer

Donors Make a Difference

Giving Day 2024 raised $42,585 from 149 gifts to support College of Science students. Donors included alumni, faculty, staff, current students and even future Bronco families.

Here are some quotes from donors on why they gave:

"My child has learned so much about STEM, resume writing, self-care and most importantly an appreciation for being an African American, all taught by black professors."

-Joe Smith

"As a Black student here at CPP, I believe the BASES program is vital to the success of all Black broncos."

-Brea Smith

"I am a proud alumna in the Physics Department and am a member of the Industry Advisory Board for the Physics and Astronomy Department. I received my best education at CPP and am always willing to contribute any way I can."

-Gassia Bedrosian ('04, physics)
IAB Member

Two opportunities for giving are Bronco Launchpad in the fall and Giving Day in the spring. Matching gifts given prior to these events support the College of Science and can double or even triple total giving. We also need ambassadors who are willing to ask their social media network to make a donation during these events.

For more information please contact Bill Burrows: bdburrows@cpp.edu, (909) 869-4160

- I love BioTrek and want to see it continue to thrive!! - Karissa Fong ('22, environmental biology)
- I donated to support my daughter and her research projects. -Araceli Estrada
- We have wonderful students who deserve our support and it's an honor to be able to do so. - Cindy Dang, staff
- I donated in honor of my parents, for all the first-generation students, and for my fond memories of the faculty and staff of the Department of Chemistry and Biochemistry. - Roy Keyer ('86, chemistry)
- My son just committed to CPP as an Environmental Biology major and we wish to support the department. - Rosalie Beard
- I loved all my classes in the College of Science (biology, chemistry, physics, and math). I want to help other students have a great experience, too. - Martin Mangrich ('91, agronomy)
- The speaker series ("Diverse Stories in STEM") makes a real difference for our students because representation matters! - Eeman At-Taras, faculty
- I've never heard of Bat Night before but it seems cool! I'd like it if they kept doing events like this, so why not support it? - Laura Rodriguez, staff
- These are my students, and they inspire me! - Rachel Blakey, faculty
- This is exactly the kind of program ("Womxn in the Wild") we need to provide opportunities for women in natural resources and agriculture to transform the culture of these industries! - Rachel Blakey, faculty
- Biotrek was one of my fondest memories of my time at Cal Poly. - Zobeida Merlos ('12,)
- Cal Poly gave me an excellent education and I was well prepared for my internship after graduation.- Anna Maria Lubatti ('82, microbiology)

Bronco Mentoring Program

CPP Alumni:

With just a little bit of your time, you can give students the confidence to go after the career they want.

You're invited to join the CPP Bronco Mentoring Network, our career-mentoring and advice-sharing network that makes it easy for you to connect with others in the Cal Poly Pomona community. The goal of the program is to increase student success by connecting students with alumni who have expertise in their industry, major, or future career.

Sign up to become a mentor today!

Students can sign up here:

Return to Campus

Join us for

Science Research Symposium

Join us for Professor for a Day

Professor for a Day isn't a day, it's actually a week of events that happens every spring. Alumni who are interested commit to being part of a one-hour career panel. Alumni respond to moderator questions about their work, and students have the opportunity to ask questions and get career advice.

The 2025 Professor for a Day (week) is March 10-14.

For more information: **bit.ly/Sci-PFAD**

College of Science

Undergraduate Students

3,974

URM

47%

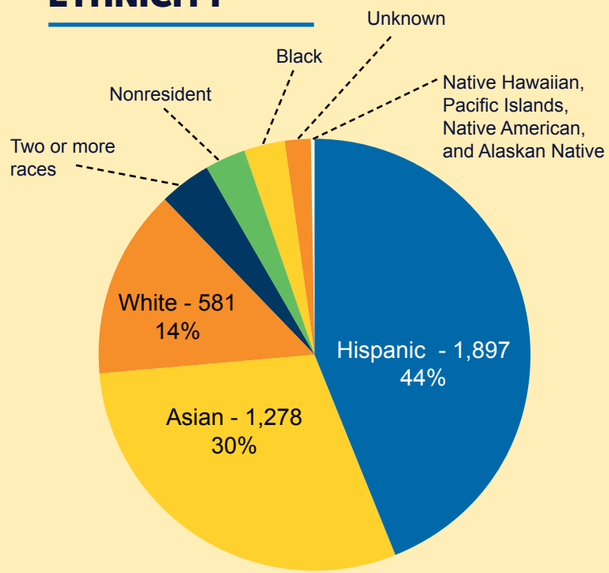
Graduate Students

303

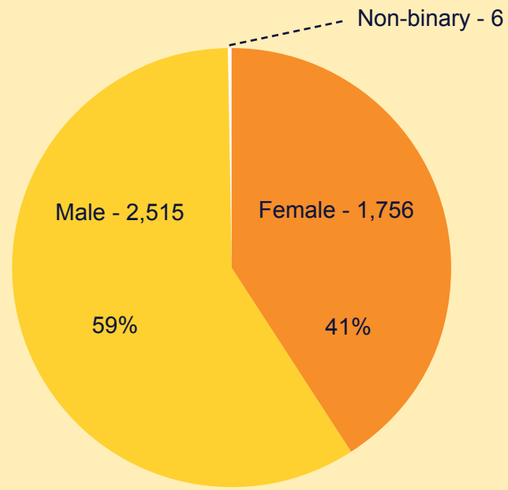
1st Generation

50%

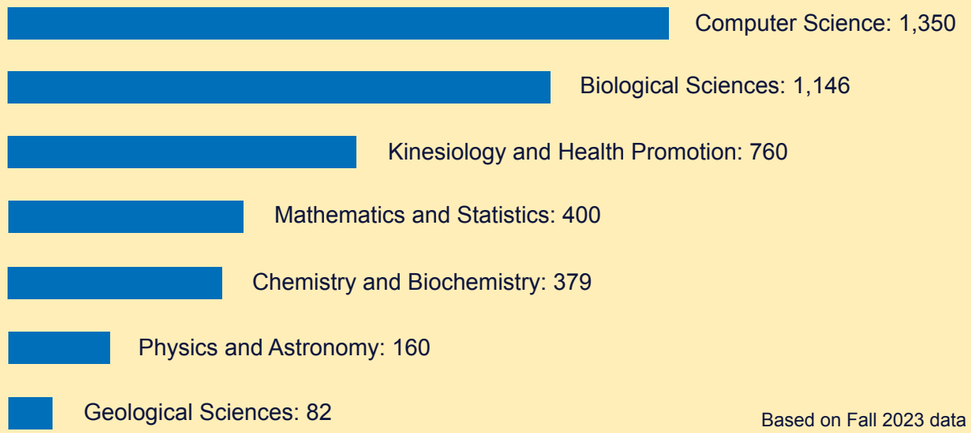
ETHNICITY



GENDER



ENROLLMENT BY DEPARTMENT



TOTAL

4,277

Based on Fall 2023 data

CalPolyPomona
California State Polytechnic University, Pomona
College of Science
3801 West Temple Avenue
Pomona, California 91768

ELECTRONIC SERVICE REQUESTED

cpp_science

cppcollegeofscience

Gift and Tax Planning - Good News!

You can support Cal Poly Pomona College of Science and enjoy these tax benefits:

- **New IRA Rule**
  - You do not have to make a required minimum distribution before age 73. However, if you are 70 ½ years old, you can make a gift to CPP from your IRA without paying income taxes on the distribution.
- **New Opportunity: IRA to Charitable Gift Annuity**
  - At 70 ½, you can make a one-time distribution from an IRA directly to a Charitable Gift Annuity (CGA). CGAs provide a fixed lifetime income.
- **Appreciated Assets**
  - Consider making an outright gift to College of Science using appreciated assets instead of cash. You can realize tax savings on income and capital gains when using stock or real estate.
- **Bequests**
  - Consider remembering College of Science in your will or trust.

For more information contact Bill Burrows:
(909) 869-4160
Cell (626) 394-2529
bdburrows@cpp.edu

DISCOVERY