



INSIDE THIS ISSUE

- Meet the New Faculty...2
- Discovery in Science...4
- Lionfish Invasion...4
- Alum Spotlight...5
- Support for Computer Science Teachers (cont.)...6
- MSTI Scholarships.....7
- Prete Fellowship...8
- Credential Program...9
- Faculty Fellows...9

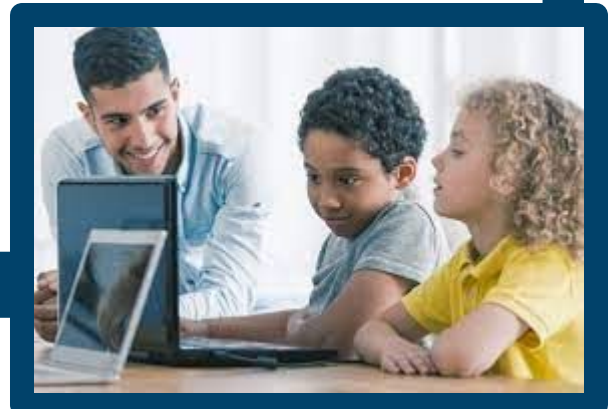


SchoolsFirst Provides Funding to Support STEM Teachers in Computer Science!

A multi-year award from SchoolsFirst Federal Credit Union will support Cal Poly Pomona's College of Education and Integrated Studies and the Center for Excellence in Math and Science Teaching in the preparation of computer science teachers. The **\$105,000** award will support current teachers in our local service area as well as Cal Poly future teachers. Cal Poly Pomona is committed to increasing the number and diversity of **highly qualified Computer Science teachers** to ensure our local students have expanded learning opportunities. As educators, we share the commitment of SchoolsFirst to advance education in literacy, math and science within K-12, colleges and universities.

While Cal Poly Pomona has been successful in our efforts to support undergraduate students and local teachers in their pathway to teaching and obtaining additional authorizations in mathematics and science, the campus has not been able to meet the needs for the Supplemental Authorization in Computer Science (CS). We have invested MSTI funds to develop four upper division classes (10 semester units) to meet the CTC (Commission on Teacher Credentialing) requirements. Since these courses are not currently a part of any degree program they need to be initially supported through Cal Poly Pomona's Open University. (Continued on Page 6)

Right Image:
Two students working on a laptop with teacher in background.



Meet the New Faculty

Dr. Janel Ortiz began her Assistant Professor position at Cal Poly in 2020. CEMaST was delighted to welcome her as tenure line faculty and value her strong ties to the community. Her hometown is La Puente, CA! Even though she has not been able to spend much time physically on campus given the pandemic she has been able to set up her research lab, provide valuable service to the university and community and began teaching for the Department of Biological Sciences.

Dr. Ortiz comes to us from a Post-Doc in Biology at the University of San Diego where she evaluated introductory biology courses, bringing in course-based research experiences, and studied urban parrots. She earned her Ph.D. in Wildlife Science from Texas A&M University-Kingsville. She has a Master of Science degree in Biology from CSULA and a Bachelor of Science degree in Animal Science from UC Davis. She got her high school diploma from one of our local schools, Nogales High.

Dr. Ortiz's research interests include:

- Professional development of teachers
- Curriculum development and evaluation
- Visiting scientists in the classroom
- Inquiry-based learning in biology
- Wildlife population monitoring, particularly involving non-native species (small mammals and birds)
- Animal behavior in urban spaces
- Habitat research using GIS and remote sensing techniques and field surveys
- Human attitudes and perceptions towards wildlife



Above Image: Photo of Dr. Janel Ortiz

She has already received a SPICE grant to develop a Course-based Undergraduate Research Experience (CURE) in undergraduate biology classrooms using trail cameras to document wildlife. She currently has students working in her lab on various projects..

Dr. Ortiz's hobbies include hiking, gardening, walking, birdwatching, painting, and drawing. She says she loves the student engagement in the classroom, their enthusiasm for participating in research and notes the close and supportive relationships between students and faculty. Our beautiful green campus with numerous trees is one of Dr. Ortiz's favorite parts of working at Cal Poly.

Learn more about Dr. Ortiz and her lab's work at www.janelortiz.com.

Meet the New Faculty

Dr. Jessica Perez joined CEMaST in fall 2021. She comes to us from the College of Engineering and will be teaching for both the College of Science and the College of Engineering. In her current schedule she has classes for Geology (where she earned her bachelor's degree) and first year experience classes for engineering. Her background as a high school math teacher and work with the community makes her a great fit for CEMaST. Her research interest in engaging marginalized groups and equitable instruction align with the mission in CEMaST.



Above Image: Photo of Dr. Jessica Perez

Dr. Perez earned her Ph.D. in Education: Teaching, Learning and Culture from Claremont Graduate University. She has a Master of Science degree in Geotechnical Engineering from UC Berkeley and earned her bachelor's degree in Geology here at Cal Poly. She also has a single subject teaching credential in mathematics and an authorization in geoscience. In addition, Dr. Perez has taught in our local schools.

Many of her hobbies involve activities with her kids and she also enjoys travel, needlepoint, sewing and crafting. Dr. Perez thinks of Cal Poly as her home with all the time spent here as an undergrad. She cites the gazebo as her favorite place on campus.

Our new faculty bring a wealth of talent and energy to CEMaST. Dr. Perez was a part of the group who received the presidential One Team Award recognizing the outstanding service of the CAMINOS work. Dr. Ortiz has already been awarded grants that will support undergraduate research. Both have inclusion and equity as priorities. Join us as we celebrate and welcome these two outstanding educators to CEMaST.

Discovery in Science

Life finds a way

The **California Condor**, an *endangered* species, once dropped to numbers below 30 in the 1980s. Afraid that the population would soon disappear, researchers captured every single wild-living individual in hopes that a captive breeding population can save the species. It did! Fast forward to 2020 with a little over 500 individuals now living in the wild!

Researchers with the San Diego Zoo Wildlife Alliance have been cataloging the genetic information of each individual since this breeding program started and in 2013, they noticed something odd. They found that two male chicks, one born in 2001 and the other in 2009, did not match any of the genetics of the males in the program. It's as if male genes were never contributed and all genes came solely from the female, and they were right! This process has been documented before, and it is known as **parthenogenesis**, but is only found in populations where males are low in number or there are few individuals of the same species which was not the case for the Condors at the time.

Researchers still have plenty of questions regarding this occurrence and whether this happens more often in the wild than previously thought.

Learn more about endangered California Condors at:
<https://science.sandiegozoo.org/species/california-condor>



Above Image: Close-up photo of a California Condor
 Source: San Diego Zoo Wildlife Alliance

Lionfish Invasion!

Exploring Biology and Mathematical Models using Lionfish

CEMaST's Dr. Paul Beardsley worked with colleagues at [HHMI BioInteractive](#) and three faculty from other universities to produce and author the online interactive [Lionfish Invasion: Density-Dependent Population Dynamics](#). Designed for high school and introductory college level biology, students explore mathematical models that describe how populations change over time and apply these models to the invasive lionfish population in the Bahamas. They also use data from other species to learn how density-dependent factors limit population size. The interactive includes realistic and actual data from lionfish and other case studies. It provides opportunities to use the logistic growth model, graph data, and interpret figures from published scientific research. Explore this exciting resource!



Above Image: Close-up photo of a Lionfish

Alum Spotlight

We are always excited to celebrate the success of our graduates. Let's get to know a little more about one of our own: **Christina Bryant**.

Q: What year did you graduate from CPP?

A: I graduated with my Single Subject credential in Biological Sciences in 2005 and finished my MS in Education in 2007.

Q: What is your work experience since graduating from CPP?

A: I have worked for the Rowland Unified School District since 2003. I started out teaching Life and Physical Science at the junior high level. While there, my other activities included teaching a robotics course and leading students to participate in the CPP 3R Robotics Competition, as well as First Lego League. After eight years, I moved to Rowland High School, where I began teaching Biology. I currently teach AP Environmental Sciences, IB Biology, and IB Environmental Systems & Societies. I also serve as the Department Chair, the Science Olympiad Advisor/Coach and the Femineers Advisor/Coach.

Q: What about your training at CPP do you feel especially prepared you for your career?

A: The instructors were helpful and prepared me academically. My methods course with Dr. Jodye Selco was particularly impactful.

She taught me how to make science education accessible to all students. After her course, I felt confident in providing students with laboratory experiences that would promote their learning.

Q: What advice would you like to share with current students on track to become teachers?

A: Have grace with yourself. When you start out teaching, establish your classroom management system immediately and focus on building relationships with your students. Don't try to do everything you learn in professional development or see online all at once. Use your first year to build your practice and then add new lessons slowly.



Left Image: Photo of single subject credential alum, Christina Bryant.

SchoolsFirst Funding Supports Computer Science Teachers

Continued from cover story

Multi-year funding provided by SchoolsFirst would allow CPP to support cohorts of teachers and help the campus institutionalize the CS authorization. We envision that the CS authorization could become a part of an undergraduate focus for Liberal Studies majors as well as a part of a CS teaching minor. Once institutionalized the courses would continue to be available through Open University for current local teachers. One of Cal Poly Pomona's primary objectives, with support from the CSU system and our partners, is to increase CPP's capacity to offer programs that will support current and future teachers as well as institutionalize additional pathways into the STEM teaching pipeline.

Dr. Daisy Tang, chair of Computer Science says that the Computer Science Department at CPP is thrilled to partner with SchoolsFirst to provide scholarship and incentives for teachers to complete their training for CS Specific Supplementary Authorizations. This is a step in the right direction towards addressing California's teacher shortage. In the past year, CS faculty worked with the Center for Excellence in Mathematics and Science Teaching (CEMaST), to prepare a suite of CS upper division courses specifically designed for teachers to cover the topics required in the authorization. We are currently offering them to our first cohort of high school teachers who are supported through the SchoolsFirst grant. They are on track to complete the requirements by the Spring semester.



Above Image: Four students working in pairs on laptops.



Top Right Image: Photo is focused on two students working together on a laptop.



Bottom Right Image: Student with pencil in hand, staring at a laptop.

MSTI Scholarships Available for Math and Science Students!

CEMaST offers Math and Science Teacher Initiative (MSTI) Scholarships to those who are interested in obtaining their math or science teaching credential. Each MSTI Scholar can receive up to \$10,000 (\$2,500 per semester) while they are finishing their undergraduate STEM degree and completing their teaching credential at Cal Poly Pomona. MSTI Scholars become a part of a community of future teachers that are supported by monthly seminars and extensive advising. The seminars are especially popular and include topics such as teaching strategies, classroom management, how to apply for a job and first year teaching expectations.

Support for MSTI Scholars extends beyond the completion of the credential, continuing through the scholar's first two years in a teaching position. Funding is provided by the CSU Chancellor's Office whose main goal is to increase the number of highly qualified STEM teachers. In the fall of 2021, we awarded fifteen CPP students and in the spring of 2022 another six CPP students were awarded. For more information and application deadlines, refer to our MSTI website at: <https://www.cpp.edu/msti/awards-and-programs/msti-scholar.shtml>.

MSTI Scholars Fall 2021

Jean Kim
Jazmine Garcia
Rachel Reyes
Heba Dandachi
Eric Wilcox
Christian Tejeda
Andrew Duran
Dominick Villaverde
John Baek
Andrew Diaz
Taylor Corcoran
Li-Hsin Chien
Madison Gutierrez
Breann Brown
Robert Ly

MSTI Scholars Spring 2022

Eve Groharing
Lama Syada
Yasmine Saenz
Felix Terrones
Andrew Cardenas
Jimmy Dang



Above Image: Dr. Paul Beardsley interacts with MSTI scholars.

Prete Fellowship Program Continues!

CEMaST has received additional funding from the Ernest Prete Jr. Foundation to support fifteen Cal Poly math and science students with a paid fellowship supporting students at Pomona Unified School District's Kellogg Elementary School. The Prete Fellowship is an opportunity for CPP students to engage with local elementary students, support sustainability of urban gardening, and gain an understanding of the expectations of teachers inside the classroom.

Each Prete Fellow receives a \$5,000 stipend to participate in a variety of teaching and learning experiences, devoting 6 – 10 hours a week at Kellogg Elementary School. In addition, Fellows attend training workshops and learn how to create, teach, and assess a math or science lesson within their assigned classroom. The program scaffolds experiences for the Prete Fellows and they receive continual support from CEMaST faculty, Kellogg's Principal Rabia Minhas, and their assigned teacher. This is an excellent opportunity for CPP students to explore if the teaching profession may match their future career aspirations!



Above Image: Student waters a plant in the garden.

2021-2022 Prete Fellows

Orion Universe
Jennifer Sanchez Gutierrez
Alison Banks
Vaneza Rodriguez
Isabel Castillo
Madison Sarmiento
Jessica Rodriguez

Catherine Johnson
Skyler Grijalva
Ivy Wang
Alexander Hamedaninia
Stephanie Hernandez
Gaia Dennison
Alexandra Alvarez
Justin Rebollar

Apply to the CPP Credential Program!

Credential Program Application Deadlines

- *Summer - February 1, 2022*
- *Fall - April 1, 2022*
- *Spring - September 15, 2022*

Contact Jeanne Reynaga (jmreynaga@cpp.edu), in the College of Education, for more information and visit the [CEMaST website](#).

New Options for Meeting Subject Matter Requirements for Obtaining a Credential

In July 2021, a new law was passed in California to provide more options for future educators to demonstrate subject matter competency. Subject matter competency is required for obtaining a credential. In the past there were two ways of demonstrating it, either through passing the appropriate California Subject Examinations for Teachers, or CSET, exams, or completing a subject matter waiver program, such as those from CEMaST at CPP.

The new law allows candidates to demonstrate their subject matter competence through (a) degree majors in the area of the credential, (b) coursework that covers the domains of the applicable Subject Matter Requirements for the credential sought, and (c) a combination of coursework and examination subtests required for the credential sought by the candidate. This means there are many more options available. Please consult the Single Subject Matter advisors in CEMaST (Dr. Laurie Riggs for math lriggs@cpp.edu, Dr. Paul Beardsley for science pmbeardsley@cpp.edu) to learn more about the new options and about applying for the credential program.

The Revival of the Faculty Fellows Program

Connecting CEMaST and CPP's STEM Scholars

We are in the process of restructuring our faculty fellows program to ensure we are meeting the goals of CEMaST. The process will consist of colleague nominations and self-nominations each spring for program participation in the following academic year. Faculty fellows will benefit from the program by having increased research and/or outreach collaboration opportunities, access to educational resources, and connections with existing K-12 partnerships.

Interested in being a fellow or nominating a CPP colleague? Check out the [nomination form!](#)

Nominations are due April 25.



Above Image: Dr. Laurie Riggs interacting with instructors using tablets.



Want to be featured on our next alum spotlight?

Tell us more about you and your path [here!](#)

The CEMaST Newsletter Committee welcomes news from faculty, students, and teachers. Please contact us at cemast@cpp.edu, for information on how to be included in upcoming issues!

Visit us online at
www.cpp.edu/~cemast

Mailing Address:
CEMaST
Cal Poly Pomona Building 4-2-515
3801 West Temple Ave
Pomona, CA 91768

Office: 909-869-4725
Fax: 909-869-4616
E-Mail: cemast@cpp.edu

