



CEMaST

The Center for Excellence in Mathematics and Science Teaching

Spring 2023

INSIDE THIS ISSUE

- Thank you, Dr. Laurie Riggs...1-2
- Provost Award for Excellence in Teaching...2
- Alum Spotlight...3
- National Teacher of the Year Finalist...4
- Classroom Resource: Making Models Simulation...4
- CoS Distinguished Teaching Award...5
- Wall of COOL 2022...5
- Become a Math or Science Teacher...6
- MSTI Scholarships...7
- Faculty Fellows...8
- Credential Program...9
- Prete Fellowship...9
- CS in K-12 Schools...10
- HyFlex Research...11-12
- Campus Program Opportunities...11
- Classroom Resource: Math in the Media...13

Fast Fact:

Over the past 5 years, CEMaST raised funds for projects with total budgets of over **\$11,407,000!!**

THANK YOU, Dr. Laurie Riggs!! CEMaST Director 2013-2022

The 2022-23 academic year marked a milestone for CEMaST —our first year in the past nine without Dr. Laurie Riggs as director. Dr. Riggs decided to more fully serve her math education students as she entered the Faculty Early Retirement Program at Cal Poly Pomona and earned the title of Professor Emeritus. CEMaST is so grateful to have flourished under Dr. Rigg's kind and effective leadership.



Image Above: Dr. Laurie Riggs at CPP Graduation 2022

Dr. Riggs inspired many students, teachers, and fellow faculty as a professor in the Mathematics and Statistics Department and the Center for Excellence in Mathematics and Science Teaching (CEMaST) for twenty-two years. CEMaST's mission is to promote, implement, and study research-based practices in science and mathematics education to enhance inclusive teaching and learning in our community. Dr. Rigg's served as an important role model for enacting this mission throughout her career.

First, she is a dedicated and exceptional teacher in both mathematics (including algebra, geometry, statistics, calculus, and the history of mathematics) and in mathematics education. Seeing how excited students get when they see her if you walk with Dr. Riggs across campus strongly supports this claim. Dr. Riggs is also an effective mentor and received the 2016 Outstanding Program Advising Award in her role as Director of CEMaST. (continued on page 2)

THANK YOU, Dr. Laurie Riggs!

Continued from cover story

Dr. Riggs has been highly dedicated to supporting in-service teachers with invigorating professional development and securing grants to support that work. She was Principal Investigator or Co-PI on National Science Foundation, California Math Science Partnerships, Mathematics and Science Teacher Initiative (MSTI) and CPEC improving Teacher Quality grants totaling nearly \$7,000,000! Her reach is broad, securing grants to support teachers in local districts including Barstow, Apple Valley, Snowline, Ontario Montclair, Rialto, Pasadena, Rowland, Pomona, and Hacienda La Puente. She also worked with community colleges in recruitment, pathways and transfer support (Moreno Valley Community College, Valley College, Crafton Hills College, Riverside Community College, Victor Valley Community College, Mount San Antonio College, Citrus Community College, Fullerton Community College).

For those of us who have worked closely with Dr. Riggs over the years, we are grateful for all her kindness, support, laughter, and inspiration. We already miss you Dr. Riggs but are comforted knowing you now have more time for camping with your family and friends and that you still get to inspire future teachers through the courses you teach in Spring semesters. **CEMaST appreciates you Dr. Riggs!**

CEMaST Director Dr. Paul Beardsley Receives Provost's Award for Excellence in Teaching

In its 12th year, the Provost's Awards for Excellence recognize faculty who demonstrate exceptional teaching, scholarship and creative activity, and service. Our very own **Dr. Paul Beardsley, CEMaST Director** and Professor of Biological Sciences, received the Provost's Award for Excellence in Teaching for 2021-2022. Dr. Beardsley is the epitome of the teacher-scholar model of CPP. He integrates inclusive pedagogy to increase motivation in his students in the classroom all while bringing in over \$12 million in his time at CPP to study teaching and learning of K-12 and our undergraduate students. His most current work being [Polytechnic for All: STEM Success Via an Inclusive institutiON \(PASSION\) NSF HSI project](#).

He joined CPP in 2011 and has been an educator in multiple settings for over 27 years working with K-12 students, undergraduates, pre- and in-service teachers, and postdocs. Dr. Beardsley continues his dedication to our students through his new position as CEMaST director. Learn more about Dr. Beardsley and his work through the [Provost's Award video!](#)



Above Image: Dr. Paul Beardsley, recipient of the Provost's Award for Excellence in Teaching.

Congratulations Dr. Beardsley!

Alum Spotlight: Katrina Poniente

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

Q: *What year did you graduate from CPP?*

I graduated with my BS in Biology in 2018 and received my Single Subject Science credential in 2020.

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

Since graduating from CPP, I've been working at South Pasadena Middle School where I teach 7th grade Life Science, 8th grade Physical Science, and I am currently the Science Department Chair. Additionally, I am the advisor for our school pep team, the Tigerettes, and the advisor for our Science Olympiad team.

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

Since I did my undergrad and credential work at CPP, I was accustomed to the hands-on learning approach. This has been very useful in a middle school setting. By using more manipulatives and simulations, my students are able to interact with the content, lean into their curiosity, and think critically about the world around them. My science methods course with Dr. Volsey and my experience as a Biology Learning Assistant for Dr. Beardsley were especially effective and I think back to those courses often.

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

My advice for new teachers would be to build connections with the students and your coworkers. It is important that you see your students as people and to build a relationship with them. In doing so, you can better accommodate their needs and they are more willing to put effort into your class if they know they are cared for. You also need to build connections with the other teachers, in and out of your department. You can share teaching tips, brainstorm ways to support students, and develop a community that you can rely on.



Image Above: Katrina Poniente

National Teacher of the Year Finalist Autumn Rivera Visits MSTI Scholars

Autumn Rivera is an inspiring middle school science teacher from Colorado. She was one of four finalists for National Teacher of the Year and is currently Colorado's Teacher of the Year. CEMaST was honored to have Ms. Rivera present to the MSTI scholars about socio-emotional learning. The scholars were also excited to learn how Ms. Rivera and her students sold science-inspired art and other items to help save a mountain lake in the Rocky Mountains—a lake that was recently made Colorado's newest state park. CEMaST director Paul Beardsley was lucky to work with Ms. Rivera when she was an undergraduate wondering if teaching was the right career for her. It seems like she made the right choice!

The MSTI scholars also got to learn in other seminars from recent CPP graduate Katrina Poniente about “What Credential Programs Cannot Teach You” (see the interview with Ms. Poniente on page 3) and from Sarah Galasso, Director of Instructional Design for Math (grades 6-12) at Carnegie Learning, who presented “Uncovering the Relationship between Mathematics and Language.”



Left Images: Autumn Rivera studying macroinvertebrates with students to learn about river health.

Classroom Resource: Making Molecules Simulation

CEMaST's Dr. Jodye Selco worked with CPP's e-learning team to develop a "[Making Molecules](#)" simulation. After using the simulation, students were asked for their input. Their responses led to both a paper about their views [(Muljana, P. S., Selco, J. I. (2023), [Evaluating the design and development of the "Making Molecules" simulation: Students' perceptions and recommendations](#). *Journal of Interactive Media in Education*, 2023(1), Article 1, 1-16.)] as well as revisions to the simulation. The updated version of the simulation allows student to make triple bonds, close rings, and use more atoms. In addition, instead of dragging an arrow from one electron or charge arm to another, the new version allows connections to be made (and broken) with the click of a mouse or touch on a screen. Use of this simulation has helped students realize the number of bonds each atom can have and that ionic compounds have to be electrically neutral.

Dr. Arlo Caine, Professor of Mathematics and Statistics, and CEMaST Faculty Fellow, Awarded the College of Science Distinguished Teaching Award

Professor Arlo Caine was honored in Fall 2022 with the College of Science Distinguished Teaching Award. The honor was very well deserved. Dr. Caine has successfully taught over 20 different math courses in his 12 years at CPP and currently serves as mentor to many other faculty in his role as the Associate Chair for Instruction. CEMaST is honored to have been able to partner with Dr. Caine on multiple projects, including his serving as Co-PI on the \$7.8 million NSF Reinvigorating Elementary Science through a Partnership with California Teachers (RESPECT) project and Co-PI on the current NSF project Polytechnic for All: STEM Success via an Inclusive institution (PASSION). Dr. Caine is an inspiring teacher. The impressive set of ConceptTests (<https://www.cpp.edu/concepttests/index.shtml>) he and his collaborators have developed are just one example of the way he helps students “read math” and encourages sense-making and engagement for all students.



Above Image: Dr. Arlo Caine engaging with a student in the classroom.

Congratulations Dr. Caine!

CEMaST's Dr. Janel Ortiz Receives Wall of COOL Award 2022

The [Wall of COOL](#) award recognizes courses that effectively integrate technology to enhance student learning in the classroom. [Dr. Janel Ortiz received the Wall of COOL award in 2022 for her course BIO 3040 Environment and Society](#). BIO 3040 is an upper division general education (GE) course that bridges the gap between science and the social sciences. Guest speakers, Zoom breakout rooms, and a variety of online resources are utilized to encourage engagement online and in the classroom. The highlighted portion of this course takes advantage of mapping software such as Geographic Information Systems (GIS) so students can conduct research on redlining and environmental justice. Students investigate different aspects of redlining and how it has impacted communities of color in terms of access to green space, biodiversity, and environmental health. Earning this award inspired Dr. Ortiz to publish the lesson for all to use with the [Ecological Society of America's EcoEd Digital Library](#), a peer-reviewed online education resource portal. [Check out the lesson!](#)



Above Image: Still image from the Wall of COOL video featuring Dr. Janel Ortiz.

Are you interested in inspiring the next generation of STEM students?

Become a Math or Science Middle or High School Teacher

Consider a career teaching math or science to middle or high school students! The Center for Excellence in Mathematics and Science Teaching has **financial resources available and provides the guidance needed** to help students obtain a *single subject math or science teaching credential*.

Cal Poly students are encouraged to schedule an appointment with CEMaST's math or science advisor early in their educational path to learn the requirements and help navigate the process of obtaining a teaching credential. During these one-on-one advising sessions, students learn they can take up to four credential courses during their senior year or four courses during the summer after graduation, allowing them to complete the credential program in one year.

Advisors:

Dr. Paul Beardsley (pmbeardsley@cpp.edu) for science

Dr. Cristina Runnalls (crrunnalls@cpp.edu) for math

CEMaST offers the Mathematics and Science Teacher Initiative (MSTI) Scholar Award to seniors and students in CPP's credential program. Students are eligible to receive **\$2,500 each semester** for four semesters **up to \$10,000**. The MSTI program provides support, professional seminars, interaction with peers and mentors, and resources to students as they complete their credential. The \$4,000 *Partners in Education (PIE) Scholarship* is also available to credential students during Clinical Practice. For more financial resources – contact CEMaST at cemast@cpp.edu.

MSTI Scholar Award deadlines:

- Fall Semester 2023 – May 5, 2023
- Spring Semester 2024 – October 22, 2023

To learn more about Cal Poly's credential program, the College of Education hosts regular orientation sessions each semester. The sessions offer students the opportunity to learn more about the credential programs, application process, program admission requirements and provides time for additional questions. For orientation dates and time, visit the College of Education's website Information Sessions. You can register by completing the Google form or contacting Jeanne Reynaga jmreynaga@cpp.edu.

Credential Orientation Information

[Basic Credential Orientation](#)

Credential program application deadlines fall on the following dates each year:

- Fall – April 1
- Spring – September 15
- Summer – February 1

Right Image: Cal Poly students at a teacher professional development workshop.



CEMaST Receives \$95,000 in MSTI Funds!

CEMaST successfully earned another Mathematics and Science Teacher Initiative Award (MSTI) from the CSU Chancellor's Office. The \$95,000 for 2022-2023 is used to support Cal Poly students who want to become mathematics and science teachers in California's public school system. The purpose of the MSTI Scholar Award, started in 2014, is to increase the number of highly qualified STEM teachers, as well as support students based on academic achievement, under-representation, and financial need. The scholars meet monthly in a seminar setting with invited speakers. The program establishes connections with peers, faculty and current teachers helping students stay focused and on track. This has been a highly successful program with 83 of the 84 scholars either teaching or finishing their credential. The seminars, extra advising and community support help these students with a strong content background persist in their path to teaching.

To be eligible for the MSTI Scholar Award, students must be a senior undergraduate or admitted into CPP's credential program, working on a single subject math or science teaching credential. As a MSTI Scholar, students receive **\$2,500 each semester** for up to four semesters (for a total of **\$10,000**). Once students complete CPP's credential program, they must work in a high-needs school district for every year of scholarship received. MSTI Scholar's attend monthly seminars with topics such as classroom management, technology, how to prepare for the job market, first year experiences, and more.

In the Fall of 2022, CEMaST awarded fifteen students the MSTI Scholar Award and in the Spring of 2023 three more students received awards. For application information and deadlines, please visit our [MSTI website](#).



Above Image: Teacher presents lessons learned from first year of teaching to future teachers.

MSTI Scholars Fall 2022

Lama Syada
Yasmine Saenz
Felix Terrones
Andrew Cardenas
Jimmy Dang
Eve Groharing
Andrew Duran
Madison Gutierrez
Katlyn Baeza
Patrick Lumanglas
Kassie Craft
Erica Barrera
Alondra Perez
Ann Tran
Nyckolaus Ledezma

MSTI Scholars Spring 2023

Weiguo Tao
Dominick Villaverde
Taylor Corcoran

Meet the New CEMaST Faculty Fellows

Stephanie Rothman *Biological Sciences*



Above Image: Research Fellow Professor Stephanie Rothman

I have been teaching as a Lecturer since 2011, since I earned my M.S. in Biology and B.S. in Environmental Biology from Cal Poly Pomona. I currently teach online Life Science and Human Sexuality, and I have been teaching online since 2014. With support from the Chancellor's Doctoral Incentive Program (CDIP) I am working towards my Ed.D. in Science Education through Indiana University, with a minor in Sexual and Reproductive Health Promotion. My current research interest involves using qualitative methods to explore how active learning and inclusive teaching practices can be used to close achievement gaps for students of historically underrepresented backgrounds in science courses.

The goals of the faculty fellow program are to: 1) support CPP faculty in discipline-based educational research and outreach to K-12 settings, 2) encourage CPP faculty to collaborate with CEMaST, and 3) build community with faculty across STEM.

Faculty fellows will have access to additional support and resources, including work and research spaces, connections to K-12 schools and supplies, and an opportunity for seed funding for a new project!

Interested in being a fellow or nominating a CPP colleague?

Visit our [nomination form](#) and submit by April 28, 2023!

Maya Stovall *Liberal Studies*



Above Image: Teaching/Community Fellow Dr. Maya Stovall.

Maya Stovall is an Assistant Professor of Liberal Studies at Cal Poly Pomona. She is a dedicated faculty member who serves as an undergraduate research mentor and advisor through the Office of Undergraduate Research, Research through Inclusive Opportunities (RIO) Program, and The Kellogg Honors College. In 2021, she created and launched a new course entitled Liberal Studies 4011: Generative Art PolyX, which emphasizes the use of autonomous computer systems and algorithms to create multimedia visual art. Stovall fosters an innovative community of practice through the annual GenArt PolyX Community CodeAthon, which connects computer/digital technology and visual culture through an immersive student-led, multilingual co-curricular experience as part of the course design.

Apply to the CPP Credential Program!

Credential Program Application Deadlines

- Summer - February 1
- Fall - April 1
- Spring - September 15

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 they have the necessary content knowledge to teach. So-called 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 (Dr. Cristina Runnalls for math ccrunnalls@cpp.edu, Dr. Paul Beardsley for science pambeardsley@cpp.edu) to learn more about the new options and about applying for the credential program.

On the 5th Year of the Prete Fellowship Program

Reconnecting students to the school garden

The Ernest Prete Jr. Foundation awarded CEMaST **\$83,003** in 2022-2023 to continue the [Prete Fellowship program](#) for the fifth year. The program is a partnership with CEMaST and the Pomona Unified School District that enables Cal Poly Pomona College of Science students to provide support to Kellogg Polytechnic Elementary School teachers. Fellows utilize a community garden to integrate science and math lessons related to the biosphere and sustainability into the classroom.

Cal Poly Pomona math and science undergraduate students are eligible to apply for the **\$5,000 paid fellowship**. Prete Fellows are matched with a K-6 teacher at Kellogg Polytechnic Elementary School and are required to devote six to ten hours per week working with students and one hour per week working in the school's garden. Cal Poly students get the experience of working alongside teachers and K-6 students, all while *improving their connection to the garden*. The garden serves as an outdoor classroom to get the students outside, discovering an alternative approach to teaching and learning.

2022-2023 Prete Fellows

Angela Alcaraz
Brenda Ponce
Casey Brian Pua
Christa Canlas
Eliana Moisa
Elizabeth A Perez
Emely Bonilla
Gabby Ferraro
Jennifer Chiu
Paulette Romero
Samantha Alba

Cal Poly Pomona Helping to Meet the Demand for Teaching Computer Science in K-12 Schools

CEMaST and CPP's Computer Science Department collaborated to develop and offer two programs that will enable K-12 teachers to obtain their computer science supplementary authorizations. Teachers that hold a multiple or single subject credential who complete one of CPP's programs can add a computer science supplement to their existing credential and help address California's shortage of qualified computer science teachers.

The Specific Supplementary Authorization in Computer Science program is designed for single subject teachers (middle and high school) and has twenty teachers enrolled into the program this year. The Introductory Supplementary Authorization program is designed for multiple and single subject K-12 teachers and in this first year of it being offered there are currently nineteen teachers enrolled. Both program's students are set to complete their authorizations this Spring 2023. The courses are offered online, after school, and have both asynchronous and synchronous meetings. Both programs are comprised of four courses that teachers complete in two semesters. The schedule and online format allow K-12 teachers working in the classroom to complete the coursework requirements in the evening, without having to commute.

To assist the Computer Science Department, CEMaST raises funds so the program is currently completely free for teachers. We also advertise the computer science supplementary authorization programs via email and website and process the applications. We received **102** Introductory applications and **70** Specific applications for the 2022-2023 academic year. This tremendous response shows there is a high need to add computer science literacy inside California schools!



Above Image: Student typing on a computer.

Through SchoolsFirst FCU donation of **\$105,000** and **\$300,000** received from the **CSU Chancellor's Office in Math Science Teacher Initiative funds**, the Computer Science Department along with CEMaST and a partnership with the College of Professional and Global Education, CPP has increased the number of highly qualified computer science teachers inside K-12 schools for last two years. Our skilled technology workforce will only continue to grow, and computer science education is a critical foundation for jobs of the future, especially in California, one of the world's leading hubs of technology.

HyFlex Research from Dr. Jessica Perez & Colleagues

HyFlex (Hybrid-Flexible) is an *instructional approach* that simultaneously offers students the option of participating face-to-face (in-person), synchronously online, and asynchronously with recorded lectures. The HyFlex approach offers new challenges and opportunities. Understanding these challenges and the potential benefits for students can help the university make well-informed decisions about which teaching modalities, methods, and related technologies are most useful and cost-effective. In this report, some of the impact on faculty and students will be addressed.

Cal Poly Pomona explored the efficacy of HyFlex with a trial of 18 HyFlex sections in Fall 2021 and 15 HyFlex sections in Spring 2022. Thirteen non-HyFlex sections in Fall 2021 (mostly hybrid and online formats) and 11 non-HyFlex sections in Spring 2022 (mostly face-to-face lecture and online synchronous formats) were designated as the comparison group. Surveys and focus groups of students and faculty members were conducted and analyzed. The team also collected additional data on academic performance.

So far, initial results suggest that students generally preferred HyFlex due to its flexibility, and even students who had not participated in a HyFlex section still favored this modality. HyFlex students in many class sections emphasized that recorded lectures were important and helpful as supplemental study tools. HyFlex faculty and students found student accountability and community building to be challenging. (continued on page 12)

ADDITIONAL CAMPUS PROGRAM OPPORTUNITIES

Project Learning Assistants (PLA)

CPP INVESTS is currently recruiting sophomore and junior STEM students who want to give back to the educational community by becoming Project Learning Assistants (PLAs). PLAs serve as student mentors and assist faculty in project based learning in the First Year Experience (FYE) courses.

- Faculty who are interested in getting a PLA can contact: Mai Tran (maintran@cpp.edu)

Badging

Develop and implement alternative learning records (ALRs) to enhance the transition of STEM students into the workforce. ALRs “offer institutions a way to validate a range of knowledge, skills, and abilities students have developed, deepening the level of information otherwise provided through student transcripts or resumes... help students to articulate their skills and academic accomplishments and make visible, through digital badging or other means, the specific learning outcomes students have achieved, what artifacts students produced to demonstrate their learning, and how those outcomes were assessed”.

- For more information, please visit the [website](#).

Micro-Internships

Micro-Internships are short-term, paid, professional assignments that are similar to those given to new hires or interns. These projects enable Career Launchers to demonstrate skills, explore career paths, and build their networks as they seek the right full-time role. Unlike traditional internships, Micro-Internships can take place year-round, typically range from 5 to 40 hours of work, and are due between one week and one month after kick-off. Micro-Internships are used by companies ranging from those in the Fortune 100 to emerging start-ups, and go across departments including sales, marketing, technology, HR, and finance.

- For more information, visit these websites:

[Micro-Internships Website](#)

<https://info.parkerdewey.com/cpp>

<https://info.parkerdewey.com/cppinvests>

HyFlex Research from Dr. Jessica Perez & Colleagues (cont.)

HyFlex faculty identified several major challenges including workload, providing equitable coursework, administering quizzes and exams in two modalities simultaneously, and audio quality. The majority of HyFlex faculty expressed some appreciation of the HyFlex instruction mode, noting that HyFlex provided flexibility and allowed students to stay on track if they were unable to attend class.

After putting forth extensive time and effort for their HyFlex courses, several faculty members would be willing to consider teaching the course again in the HyFlex modality if modifications were made. For example, some HyFlex faculty noted that they wanted to require at least a few in-person sessions for labs or exams. Some HyFlex faculty required students to take exams in-person to maintain academic integrity. Others required all students to take exams online to ensure exams were equitable, and they wondered if students maintained academic integrity. Furthermore, some faculty noted that HyFlex may not work for certain courses due to workload constraints (i.e., it would take huge amount of work to convert the class) or because a course is not amenable to HyFlex, such as labs requiring hands-on course work and courses in which students are not highly motivated (e.g., courses not required for the major and certain lower division courses).

Overall recommendations and comments:

- The university may need to continue providing technological assistance to faculty (e.g., microphones, training and help when first teaching a HyFlex course). It is unclear whether providing HyFlex teaching assistants to some or all HyFlex instructors is worth the expense.
- One of the most critical aspects to teaching and learning in HyFlex courses is strong organizational skills. Students and faculty need to be highly organized and structured with their time and goals to facilitate learning.
- Workload and timing must be considered to ensure faculty and students are not overloaded as they adjust to HyFlex.
- HyFlex appears to be most appropriate for courses in which students are highly motivated, such as major courses, and upper division courses. Graduate courses are also more appropriate for Hyflex.

Other student findings from interview

Recorded lectures as study tools: In focus groups, students emphasized their appreciation for having the ability to use recorded lectures as supplemental study aids. Furthermore, asynchronous materials were deemed useful tools for studying and keeping up on notes they missed. This may partially explain students' preference for HyFlex over other modalities. One student shared:

Because every lecture is recorded, you can easily just go back and watch the lecture a second time to maybe fill out the notes you missed or maybe have some help with homework. Just having the option to go back and rewatch the lectures... really helped learning.

Flexibility of HyFlex: The flexibility of HyFlex was the primary appeal for students. In focus groups and surveys, students gave various explanations for why they appreciated the flexibility such as saving commute time, feeling safe during the ongoing pandemic, and not being penalized for missing class due to important obligations outside of school. Two students shared:

I liked that I could participate fully while being a working mom. Showing up to class can be a hardship with children and work and is the main reason I have not been able to finish my degree.

Table Below: Student preference of modality.

Instructional mode	Fall 2021		Spring 2022	
	1st or 2nd choice	1st choice	1st or 2nd choice	1st choice
HyFlex	81%	54%	78%	56%
Face-to-face (in-person)	50%	26%	44%	26%
Asynchronous (online)	19%	5%	20%	6%
Synchronous (online)	25%	5%	31%	6%
Hybrid	26%	9%	28%	5%

Making Sense of Math in the Media

CEMaST's Dr. Stacy Musgrave collaborated with an interdisciplinary team of researchers to address a critical need: helping individuals make sense of math in the media.

With the start of the COVID-19 pandemic, being able to appropriately interpret graphical representations of data became more critical than ever. Suddenly, news outlets were covered in graphical representations that attempted to communicate information about the spread of infection. The lack of consistency in representations often led people to draw incorrect conclusions about risks involved with infection and vaccination.

In response, the research team developed tools to help people interpret graphical representations and reason about the relative risks of vaccination versus consequences of infection.

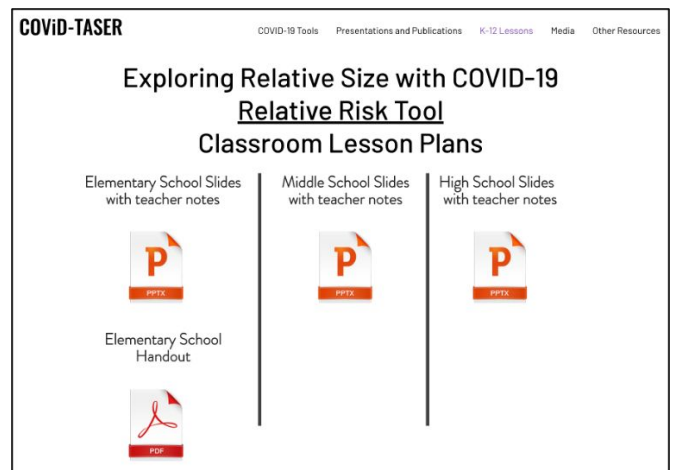
The Relative Risk Tool allows you to enter your age and then identify various health characteristics related to vaccination and infection or lifestyle related activities (e.g., driving 14000 miles/year, skydiving, playing soccer games, tossing a coin). The Relative Risk Tool will then display a graphic so you can compare how risky each of those scenarios is in relation to each other.



Above Image: COVID-19 Relative Risk Tool Interface.

The team hopes that people who use this tool will feel empowered to make sense of risk factors related to COVID-19 vaccination and infection.

Additionally, the team wants to support teachers in equipping their students to make sense of math in the media. So the researchers created editable PowerPoint slides that can be used to build lessons for K-12 students.



Above Image: COVID-TASER Lesson Plans Website

All of these resources are *freely* available at www.covidtaser.com. To access the lesson plans, navigate to the **K-12 Lessons** in the top menu bar.



CEMaST

The Center for Excellence in Mathematics and Science Teaching

UPCOMING EVENTS

[Faculty and Staff Summer Institute](#) at CBA 162-1001– Register by May 13, 2023

- May 31 – 8:30am – 4:00pm
- June 1 - 8:30am – 4:00pm
- June 2 – 8:30am – 1:30pm

First Year Experience Learning Community during Spring, visit [website](#) for more information.

- Registration for Spring 2024 is in Fall 2023

CUREs Learning Community (Contact Dr. Winny Dong (winnydong@cpp.edu))

USC Equity-Minded Teaching Institute Professional Development

- Registration in Summer 2023 for 2023-2024 (Contact Mai Tran (maintran@cpp.edu))

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 an upcoming issue!

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

