

Registration Brochure
Pasadena, CA
Nov. 30 - Dec. 2, 2018
California Science
Education Conference



#Cascience18

Use NGSS to Inspire Passion for Science

The California Science Teachers Association invites you to attend the California Science Education Conference this Nov. 30-Dec. 2

Learn effective NGSS strategies that California teachers are using to foster students' love of science and three-dimensional learning.

Enhance your skills when amazing presenters give you resources to use immediately in your elementary or secondary classroom.

Group rates are available!

Register/Info: conference.cascience.org

Questions: 916-979-7004 or registration@cascience.org

Register Online



Hotel Booking

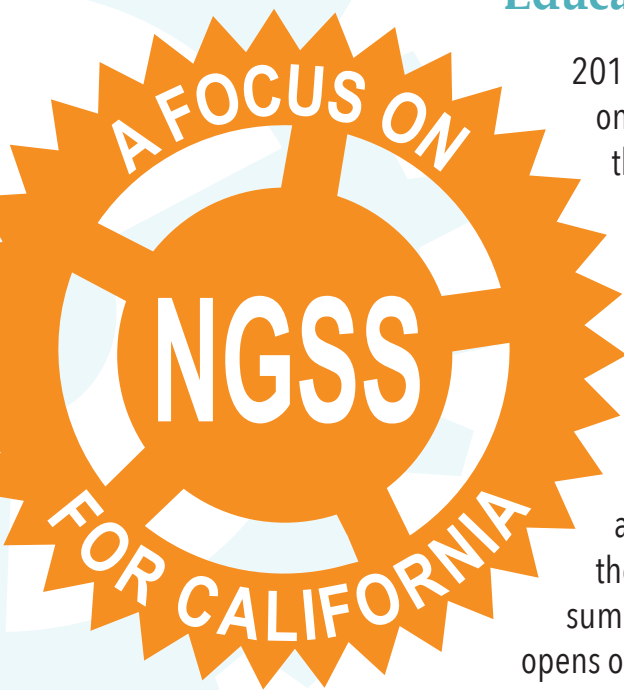


#cascience18



California Science Teachers Association
950 Glenn Drive, Suite 150
Folsom, CA 95630

California Science Education Conference



2018/19 is a pivotal year in the ongoing implementation of the California Next Generation Science Standards (CA NGSS) in classrooms across California.

The California State Board of Education is scheduled to take action to adopt instructional materials for K-8 on November 8-9, 2018, and the testing window for the first operational statewide summative assessments for science opens on January 9, 2019. Pressure to implement the California Next Generation

Science Standards makes your participation in this year's conference more important than ever.

Get what you need to know about phenomena-based, 3-dimensional teaching and learning, supporting all learners, how to design NGSS lessons, course models, climate change as addressed in the standards, and much, much more. You will have access to all this and more with presentations by this year's keynote speakers, focus speakers, and short course and workshop presenters. There is so much happening we couldn't fit it all in three days, so we have added two pre-conference events for you to choose from.

Join us in Pasadena for three (or four) days of networking, education, and rejuvenation.

Professional Development

Information on earning a unit of credit from CSU Long Beach is available <http://conference.casience.org/registration/professional-development>

EVENT SPONSORS



hhmi | Howard Hughes Medical Institute

PETER & ROCHELLE A'HEARN



General Sessions

FRIDAY, NOVEMBER 30
9:30 AM – 10:10 AM

CSTA Annual Meeting and Opening Session

Join us for the CSTA Annual Meeting of members presided by the 2017-2019 president Jill Grace. Learn about how CSTA has taken a leadership role in all aspects of the implementation of CA NGSS at the state level.

Sponsored by Chevron

FRIDAY, NOVEMBER 30
10:10 AM – 11:10 AM

Keynote Presentation – Why Should We Trust Science?

Naomi Oreskes, Professor of the History of Science and Affiliated Professor of Earth and Planetary Sciences, Harvard University



Dr. Naomi Oreskes is an internationally renowned geologist, science historian, and author of both scholarly and popular books and articles on the history of earth and environmental science. In recent decades she has been a leading voice on the issue of anthropogenic climate change. In 2014, Oreskes had the opportunity to meet Pope Francis at a special meeting at the Vatican on climate change and sustainability, and in 2015 wrote the introduction to the Melville House edition of the Papal Encyclical on Climate Change and Inequality, *Laudato Si'*.

SUNDAY, DECEMBER 2
8:30 AM – 9:30 AM

Closing Keynote Address – Climate Change: How Do We Bend the Curve?

Dr. V. Ram Ramanathan, Professor, Climate Sciences, Scripps Institution of Oceanography, UC San Diego



Climate change, if left unchecked, can soon morph into an existential threat. Fortunately, there is still time to avoid catastrophic changes by bending the pollution emissions curve by providing top-down policy actions, such as the Paris Agreement, are supported by bottom-up actions. To motivate others towards such bottom-up actions, I will describe three actions I am taking for bending the curve: 1) Develop an education program that has been launched in California which will be scaled to rest of the nation and the world, to empower a million undergraduates with tools to solve the problem; 2) Form an alliance between science, policy, religion and health care providers who can reach out to the public with facts, the urgency and the available solutions; 3) Formed a California collaborative for Climate Change Solutions with academic leaders from Caltech, CSU, Stanford, and to conduct demonstration projects of scalable solutions.

Sponsored by STEMscopes

Visit conference.casience.org/workshops for a complete listing.

Workshops

The California Science Education Conference offers the most comprehensive science education workshop program in the state. Workshops are 90-minute educational sessions. Many workshops are hands-on and led by other classroom teachers along with other science education professionals. Workshops are open to all conference registrants on a first-come, first-served basis. Workshops will be held at the Pasadena Convention Center and Sheraton Pasadena. All workshops presented are aligned to/support one or more California State Adopted Standards. This includes the California Next Generation Science Standards (CA NGSS), California Common Core State Standards (CCSS) in English Language Arts (ELA) and Math, and the English Language Development (ELD) Standards. Workshops are highly interactive and often involve hands-on investigations, group work, and fascinating demonstrations. You're likely to receive free classroom materials, lesson plans, units, handouts, and other valuable resources. Access to all workshops is included with your conference registration.

Workshops are categorized by several variables including grade level and type of science (including STEM and Engineering). As well as the following emphases:

- Assessment
- Beef Up on Core Ideas
- Classroom Management/Engagement
- Common Core-ELA
- Common Core-Math
- Computer Science in Science
- Crosscutting Concepts (CCCs)
- Disciplinary Core Ideas (DCIs)
- English Learners/English Language Development
- Informal Science Education
- Leadership (coaching, site leadership, administrator, professional development)
- NGSS 3-Dimensional Learning
- Pedagogy
- Preservice Teacher Education/TPAs
- Science & Engineering Practices (SEPs)
- STEM/STEAM/Maker

Conference Audio Visual Sponsored by STEMscopes

Visit conference.cascience.org for more information.

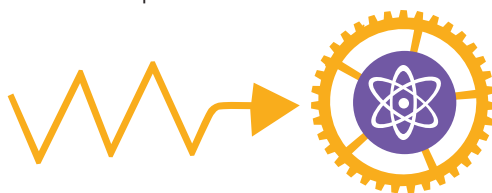
*Climate Summit Session



Featured Conference Partner Strands

CSTA is proud to partner with several organizations to provide you with quality and exclusive content. Partners are listed below:

- CA NGSS K-8 Early Implementation Initiative
- California Academy of Sciences
- California Environmental Education Interagency Network (CEEIN)
- CISC - Science
- California Science Project (CSP)
- Exploratorium
- Environmental Literacy Steering Committee
- HHMI
- Monterey Bay Aquarium
- Pasadena Unified
- San Francisco Unified
- STEMscopes



Focus Speakers

Focus speakers are highly regarded scientists and education experts who present 90-minute, in-depth lectures on subjects relevant to science teaching. The focus speaker series allows you to expand your understanding in a wide range of critical topics. Focus speaker sessions are included with your conference registration.

FRIDAY, NOVEMBER 30
8:00 AM – 9:30 AM

Turning Misconceptions/ Misinformation Into Educational Opportunities

Presented by: Dr. Brad Hoge, Director of Teacher Support, National Center for Science Education

Learn about a new unit of climate change lessons developed using a misconception-based approach and evidence-based pedagogy. The lessons were created at a workshop with classroom teachers called Turning Misinformation into Educational Opportunities. Workshop facilitators included John Cook, a research assistant professor at the Center for Climate Change Communication at George Mason University who developed the misconception-based approach, Frank Niepold, Senior Climate Education Program Manager for NOAA, and Brad Hoge, Director of Teacher Support at the National Center for Science Education (NCSE). The five lesson unit is built around misconceptions specifically identified in the Heartland Institute's mailing utilizing a unique inquiry strategy to inoculate students to misconceptions.

Sponsored by Peter & Rochelle A'Hearn



12:30 PM – 2:00 PM

How to Make Science Happen in an ELA World

Panelists: Katherine Altmann, Teacher, San Diego USD and Alyssa Nemeckova, Teacher, Palm Springs USD
Facilitator: Karen Cerwin, Regional Director, K-12 Alliance @ WestEd

A facilitated panel of elementary educators will discuss challenges and share solutions of teaching science in elementary—a grade span long dominated by English Language Arts.

2:30 PM – 4:00 PM

NGSS and Career Readiness: Fulfilling California's Workforce Demand

Panelists: Janelle Wellons, Mission Operations Engineer, NASA Jet Propulsion Laboratory (JPL); Dr. Peter Hung, Member of the Technical Staff, The Aerospace Corporation

Facilitator: Jennifer McCluan, TOSA, San Dieguito Union High School District

Engage with a panel of professionals from a variety of industries and sectors and learn about their perspective on how a K-12 education inclusive of science education based on the Next Generation Science Standards prepares students for careers.

4:20 PM – 5:50 PM

Data From the Skies Warn of Disasters on the Ground

Presented by: Margaret (Maggi) Glasscoe, Geophysicist in the Earth Surface and Interior Group, JPL Science

Geophysicist Maggi Glasscoe of the Jet Propulsion Laboratory will discuss how Earth observations from satellites and aircraft can be used to monitor natural hazards and disasters through airborne projects like Uninhabited Aerial Vehicle Synthetic Aperture Radar (UAVSAR) and data synthesis programs like the Advanced Rapid Imaging and Analysis (ARIA) Project for Natural Hazards project.

Sponsored by Peter & Rochelle A'Hearn



SATURDAY, DECEMBER 1
8:00 AM – 9:30 AM

NGSS = College Ready

Panelists: Dr. Matthew d'Alessio, Associate Professor, Department of Geological Sciences at California State University Northridge; Dr. Allen Leung, Professor of Chemistry, Department of Chemistry, Rio Hondo Community College; Dr. Maria Simani, Executive Director, California Science Project

Facilitator: Jennifer McCluan, TOSA, San Dieguito Union High School District

Engage with a panel of university and community college professors and learn about their perspective on how a K-12 education inclusive of science education based on the Next Generation Science Standards prepares students for post-secondary education.

10:00 AM – 11:30 AM

Rivers in the Sky

Presented by: Marty Ralph, Professor, Scripps Institution of Oceanography, UC San Diego

California has no mighty rivers like the Mississippi, but rivers of a different kind can flood the state. In winter 2017, more than a meter of precipitation fell in some places, unleashing floods, triggering landslides, and causing evacuation of 200,000 people. It's all because of atmospheric rivers: long, narrow ribbons of water vapor rushing across the sky. Just a few hundred kilometers wide, atmospheric rivers stretch thousands of kilometers from the tropical oceans toward the poles, carrying on average 25 times as much water as the Mississippi River, but as vapor rather than liquid. When atmospheric rivers make landfall, and the vapor condenses, they can release a staggering amount of rain and snow. Join Scripps Institution of Oceanography meteorologist Marty Ralph, Director of the Center for Western Weather and Water Extremes as he describes the phenomena of atmospheric rivers, their impact on our weather, and the essential role modeling and prediction play in managing California's precious water resources.

Sponsored by Peter & Rochelle A'Hearn



12:00 PM – 1:30 PM

Equity in Science Education: Language Learners and Science

Presented by: Claudio Vargas, Co-Director, Sci Lingual, LLC, and Susan Gomez Zwiep, Professor, Science Education, CSU Long Beach

Science for ALL is an important shift in the CA NGSS. We will share successes and strategies for making science accessible for English Learners and discuss why science can be a rich context for language development.

3:00 PM – 4:30 PM

The Reverse Keeling Curve: Earth's Climate History Preserved in Ancient Ice

Presented by: Jeff Severinghaus, Professor, Scripps Institution of Oceanography, UC San Diego

Many are familiar with the Keeling Curve, the iconic record of increasing CO₂ in earth's atmosphere established by Scripps Oceanography scientist Charles David Keeling in 1958 – but how do we know about CO₂ before then? Drilling down thousands of meters into the ancient ice preserved on Earth's massive continental ice sheets, scientists can extract a wealth of information about our climate history – including periods both much colder and considerably warmer than today. Ice, dust and tiny gas bubbles in Greenland and Antarctic ice provide myriad clues into the complex workings of Earth's climate system. Join Scripps Institution of Oceanography paleoclimatologist Dr. Jeff Severinghaus as he describes how he delves into Earth's climate past to gain insight into our climate future.

Sponsored by Peter & Rochelle A'Hearn



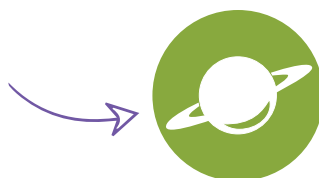
4:45 PM – 6:15 PM

Exploring Earth from Space and Being a Scientist in 2018

Presented by: Mike Gunson, Global Change and Energy Program Manager and OCO-2 Project Scientist, JPL

Every year, NASA and many international partners have added new satellites and instruments to an array of sensors already in space to study how and where the Earth is changing. These capabilities in orbit have required a new generation of scientists to make the discoveries, to exploit the exciting opportunity, and to advance our fundamental understanding of the planet we call home. Over the past thirty years, the skills we need for this research have changed. In this talk, I will look back at the evolution of the Earth science space program, the opportunities for young scientists, and what it might tell us about what they need to know.

Sponsored by Peter & Rochelle A'Hearn



Field Courses

Field courses offer hands-on learning experiences at exciting destinations throughout the Pasadena area. They are optional, require an advance ticket purchase, and are open to adult, registered conference participants on a first-come, first-served basis. Ticket prices include round-trip bus service between the Pasadena Convention Center and the field course site. Please visit the website for logistical details.

FRIDAY, NOVEMBER 30

8:45 AM – 12:00PM

FC01: Tour of NASA's Jet Propulsion Laboratory

JPL is NASA's lead center for the robotic exploration of space. JPL missions have visited all the planets, comets, asteroids and interstellar space. On this visit, educators will tour the visitor center, Space Flight Operations Facility (mission control for spacecraft in deep space), and the Spacecraft Assembly Facility where the Mars 2020 rover is being built. This course is also offered in the afternoon; please see FC02.

More details: Fee includes light snacks.

80 attendees maximum

Fee: \$35



12:30 PM – 3:30PM

FC02: Tour of NASA's Jet Propulsion Laboratory

JPL is NASA's lead center for the robotic exploration of space. JPL missions have visited all the planets, comets, asteroids and interstellar space. On this visit, educators will tour the visitor center, Space Flight Operations Facility (mission control for spacecraft in deep space), and the Spacecraft Assembly Facility where the Mars 2020 rover is being built. This course is a repeat of FC01.

More details: Fee includes light snacks.

80 attendees maximum

Fee: \$35

12:30 PM – 5:00PM

FC03: The Science in Your Beer: Chemistry, Microbiology, and Sensory Analysis at Verdugo West Brewing Company

Learn the science behind beer making and fermentation from the Verdugo West Brewing Company Head Brewer (who has an M.S. degree in Biochemistry). Tour the facilities of this Burbank-based, craft brewery. Participate in three different hands-on stations: yeast counts with representatives of White Labs, learn about enzymatic activity with a small scale grain mash, and do a sensory analysis and tasting to learn how the various ingredients and the fermentation process all comes together and to result in the aromas and flavors in the glass. This event is limited to guests age 21 and over.

More details: Fee includes lunch and flight of beer.

55 attendees maximum

Fee: \$50



9:30 AM – 3:30PM

FC04: Mt. Wilson Hike and Astronomy Tour

Enjoy a walking tour of the Historical Mt. Wilson Observatory. Participants will experience the wonders of the San Gabriel Mountains as well as learning about the astronomical accomplishments that have changed what we know about our universe. Participants will be able to visit the 60" and 100" telescope, walk through the Museum of Photonics, and receive a walking seminar from a Mt. Wilson Naturalist to re-discover the wonders of the San Gabriel Mountains.

More details: Fee includes lesson plans, spectroscopy lenses, light snack, and lunch.

50 attendees maximum

Fee: \$60



8:00 AM – 1:30PM

FC05: LA Zoo in the Classroom: Extending Field Experiences Beyond Four Walls

The LA Zoo is home to animals from around the world and a botanic garden operated by the city of Los Angeles. Experience the LA Zoo's Education Programs through hands-on investigation and exploration, in the classroom as well as out with the animals. Discuss how to bring the zoo into the classroom as well as extending classroom experiences. Enjoy close up encounters with animals and explore behaviors, as well as investigate the zoo as a habitat. Learn about the engineering of habitats for animals and conservation practices with a focus on environmental education.

More details: Fee includes lesson plans and snacks.

50 attendees maximum

Fee: \$40

FRIDAY, NOVEMBER 30 & SATURDAY, DECEMBER 1

6:30 AM – 7:15AM

FC06 & FC07: Breathe, Relax, and Yoga*

Breathe consciously and tap into your body's parasympathetic powers of relaxation through 45-minutes of



Yoga. We will start with an energy-boosting Vinyasa flow, followed by relaxing Yin Yoga stretches and ending in a blissful meditative state. You will leave this morning session refreshed and energized for the rest of your exciting day at the conference.

More details: Fee includes Yoga mat, infographic on Yoga and stress reduction for teachers, Yoga lesson plan, and Yoga DVD.

*Yoga sessions will be led by Mary Ann Ng. Mary Ann teaches Biology and Anatomy & Physiology at Alhambra High School. She is also a certified Yoga Teacher in three different styles of Yoga -Yin, Chair, and Vinyasa Yoga. Currently, she is pursuing her certification in Yoga Therapy at Loyola Marymount University. As a science teacher, she incorporates yoga as a phenomenon for her NGSS lessons and mindfulness in her classroom.

30 attendees maximum

Fee: \$15 per day



Congratulations Award Winners

CSTA is pleased to honor the following 2018 award recipients. Please join us in congratulating them at the Awards Lunch on Saturday, December 1:

CSTA Future Science Teacher Award
Erik Perez, CSU Long Beach

Christine Bertrand Advocacy Award
Jane Steinkamp, San Joaquin County
Office of Education

CSTA Distinguished Contributions Award
NASA Jet Propulsion Lab

-and-

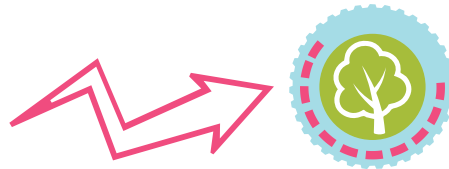
Scripps Institution of Oceanography

CSTA Honorary Memberships
Dr. Michael Kirst, President, CA State Board of
Education
Tom Torlakson, State Superintendent of Public
Instruction

2016 PAEMST – Science Recipient – California
Nancy Wright, Hayward Unified School District

*The 2018 California State Finalists will
be announced by CDE this fall.*

*Tickets to this special event are available for purchase on
the registration form.*



Evening Events

FRIDAY, NOVEMBER 30

7:00 PM – 9:00 PM

Paint and Sip at the Pinot's Palette

Paint and sip with your fellow science educators! Come join us for an evening event where we will paint, enjoy a beverage and each other's company! All painting materials are provided, and you get to take the painting home. Guests are allowed to bring in any wine, beer, beverages of their choosing. Pinot's Palette will provide snacks, water, soft drinks, painting and raffle of a professional art piece. This event is limited to guests age 21 and over.

50 attendees maximum

Fee: \$35

7:00 PM – 9:00 PM

CSTA Happy Hour

Enjoy sampling the variety of food and drink that Pasadena has to offer during CSTA's Exclusive Happy Hour. CSTA will provide a list restaurants that will be offering happy hour pricing to CSTA Attendees, all you have to do is show your badge and enjoy!

Descanso Gardens Enchanted: Forest of Lights – Self Guided

Enchanted: Forest of Light is an interactive, nighttime experience unlike anything else in Los Angeles, featuring a one-mile walk through unique lighting experiences in some of the most beloved areas of Descanso Gardens. This event only takes place November through January.

This evening event will not be managed by CSTA Staff or Volunteers. Attendees will need to purchase tickets directly through Descanso Gardens website. Tickets available for purchase starting in October 15.

LA Zoo Walk/Lights – Self Guided

Bigger. Brighter. Merrier. L.A. Zoo Lights is a not-to-be-missed nighttime holiday light experience that debuted in 2014 and has glowed brighter each year since. This year's event promises to be even more magical than ever – with dazzling new displays and details throughout.

This evening event will not be managed by CSTA Staff or Volunteers. Attendees will need to purchase tickets directly through LA Zoo's website. Tickets available for purchase starting in November.

7:00 PM

Dine About

Enjoy dinner out! Serving cuisine from all parts of the world, Pasadena has more than 500 restaurants! CSTA is pleased to offer conference attendees an opportunity to meet and network with fellow science teachers over dinner at some of Pasadena's well-known restaurants. We have made reservations at several area restaurants for Friday, November 30 at 7:00 pm. Each reservation is for a table of six, and the restaurants have all agreed to issue separate checks.

Here is how the program works: Visit the Dine-About Pasadena sign-up board in the CSTA booth on Friday until 5:00 pm. There you will find the list of restaurants, sample menus, and a sign-up sheet. If you would like to eat at that restaurant, add your name to the list. Once the sign-up list is full, no more names can be added.

SATURDAY, DECEMBER 1

7:00 PM – 9:00 PM

Movie Night

Ready for a night at the movies? Join HHMI at this sponsored event where you will enjoy hosted snacks and beverages while watching the showcase of *Some Animals are More Equal than Others* which will also include a brief two minute trailer of *I Contain Multitudes*. Be sure to stay after the showing of the movie as there will be a panel discussion with those that are behind the making of the movie.

No ticket purchase necessary, this event is open to all CSTA Conference Attendees.

Sponsored by HHMI

7:00 PM

Dine About

See description above.

Schedule-at-a-Glance

THURSDAY, NOVEMBER 29

8:00 am - 5:00 pm	Pre-Conference Event for District-Level Science Coaches and TOSAs
8:00 am - 5:00 pm	Climate Summit, Pre-Conference Day
1:00 pm - 5:00 pm	CSTA Leadership Forum (Invitation Only)
4:00 pm - 7:00 pm	Registration Desk Open

FRIDAY, NOVEMBER 30

7:00 am - 6:00 pm	Registration Desk Open
8:00 am - 5:30 pm	Field Courses
8:00 am - 4:30 pm	CAST Academy
8:00 am - 9:30 am	Workshops and Focus Speaker
9:30 am - 4:30 pm	Exhibit Hall Open!
9:40 am - 11:10 am	Opening General Session and Keynote Address
11:10 am - 12:30 pm	Exclusive Exhibit Hall Time (Lunch Concessions Open in the Exhibit Hall - 11:10 am - 2:30 pm)
12:30 pm - 2:00 pm	Workshops and Focus Speaker
2:30 pm - 4:00 pm	Workshops and Focus Speaker
2:30 pm - 5:30 pm	Short Courses
4:20 pm - 5:50 pm	Workshops and Focus Speaker
6:45 pm - 9:30 pm	Evening Event of Your Choice!



SATURDAY, DECEMBER 1

7:00 am - 5:45 pm	Registration Desk Open
7:00 am - 6:30 pm	Field Courses
7:30 am - 3:00 pm	Exhibit Hall Open - Enjoy the last day of exhibits
8:00 am - 9:30 am	Workshops and Focus Speaker
8:30 am - 11:30 am	Short Courses
10:00 am - 11:30 am	Workshops and Focus Speaker
12:00 pm - 1:30 pm	Awards Luncheon
12:00 pm - 1:30 pm	Workshops and Focus Speaker
1:30 pm - 3:00 pm	Exclusive Exhibit Hall Time - Last Opportunity to Visit the Exhibit Hall
3:00 pm - 6:00 pm	Short Courses
3:00 pm - 4:30 pm	Workshops and Focus Speaker
4:45 pm - 6:15 pm	Workshops and Focus Speaker
7:00 pm - 9:00 pm	HHMI Movie Night

SUNDAY, DECEMBER 2

7:30 am - 1:00 pm	Registration Desk Open
8:30 am - 9:30 am	Closing General Session and Keynote Address
9:45 am - 11:15 am	Workshops
11:30 am - 1:00 pm	Workshops

Pre-Conference Events

Onward: A Pre-Conference Event for District-Level Science Coaches, Science Leaders, and TOSAs - Year 1, 2, & 3 Tracks

THURSDAY, NOVEMBER 29

8:00 AM – 5:00 PM

Join us to: Participate in a full day of intensive professional learning with others working in these unique roles

Fine tune your skills as a Coach, TOSA, or another similar designated role

Network with colleagues and science education leaders

Year 1: My Role in Leading Change

Year 2: Considerations for Leading Change

Year 3: Leading Change Through Instructional Materials Adoption

TOSA Tickets: \$135 fee includes breakfast, lunch, and supplies. Registration is limited to county office of education, district, school, charter, and private school employees. This event is likely to sell out.

California Science Education Conference Climate Summit: Pre-Conference Day*

THURSDAY, NOVEMBER 29

8:00 AM – 5:00 PM

CSTA is pleased to collaborate with Scripps Institution of Oceanography, NASA's Jet Propulsion Laboratory, California NGSS K-8 Early Implementation Initiative, and the K-12 Alliance @ WestEd to bring you the California Science Education Conference Climate Summit.

Intended Audience: The Climate Summit Pre-Conference Day and other Summit events are appropriate for all educators who teach science in a K-12 classroom setting or support or lead implementation of NGSS in their school, district, or county.

- Agenda topics for the Pre-Conference Day include:
- Essential Climate Science: Evidence and Methods
 - Paleoclimatology: The Historical Record
 - Climate Models, Scenarios, and Projections
 - The Anthropocene
 - Educational Resources and Activities
 - Special Topics in Climate Science

Tickets: \$75 fee includes, Climate Summit Pre-Conference Day registration and lunch. The fee is refundable for educators who attend the Pre-Conference Day, complete a pre-survey, and complete a post-survey at the end of your Climate Summit experience.

For information more information about the Climate Summit visit <https://conference.cascience.org/events-and-workshops/climate-summit>.



Short Courses

Short courses for this year's conference. These short courses are designed to help you dig deeper into NGSS, engineering design, and more. Each short course's duration is three to six hours, giving you the chance to really interact and make sense of the material.

Short courses are ticketed events, guaranteeing you a seat in the room and relevant hand-outs. You will have hands-on experiences that are designed to help you envision relevant to use in your classroom. Many short courses will also provide you with sample materials that are ready for use. All short courses are filled on a first come first served basis, so act now—we expect these short courses will sell out fast this year! Visit conference.cascience.org for descriptions.

FRIDAY, NOVEMBER 30 2:30 PM – 5:30 PM

SC01: Science-Literacy (K-2): A Win-Win for Both

Tickets: \$15 | **Grade Level:** PreK-2

Science & Emphasis: Earth/Space Science; Common Core - Literacy, Pedagogy

Strand: CA-NGSS EARLY IMPLEMENTER

SC02: Grappling with Stability and Change in Systems

Tickets: \$10 | **Grade Level:** Not Grade Level Specific

Science & Emphasis: All Sciences; Beef Up on Content, Crosscutting Concepts (CCCs), Science & Engineering Practices (SEPs)

SC03: Class Ethos: The "4th Dimension" of the CA NGSS

Tickets: \$20 | **Grade Level:** 6-12

Science & Emphasis: Applicable to All Sciences; Beef Up on Content, Crosscutting Concepts (CCCs), Science & Engineering Practices (SEPs)

SC04: Academic Vocabulary Through Engaging Phenomena

Tickets: \$15 | **Grade Level:** 3-5

Science & Emphasis: EP&Cs/Environmental Literacy, Life Science/Biology; Classroom Management/Engagement, Common Core - Literacy, English Learner/English Language Development

Strand: CSP and CA-NGSS EARLY IMPLEMENTER

SC05: Learning by Making for STEM Success

Tickets: \$10 | **Grade Level:** High School

Science & Emphasis: Integrated Science (bundled across domains); Science & Engineering Practices (SEPs), STEM/STEAM/Maker, Technology Integration

SC06: Ice, Ice, Baby*

Tickets: \$15 | **Grade Level:** 6

Science & Emphasis: Integrated Science (bundled across domains); Environmental Literacy

Strand: CLIMATE SUMMIT

SC07: Life in the Balance: Coastal Carbonate Chemistry*

Tickets: \$15 | **Grade Level:** High School

Science & Emphasis: Earth/Space Science, Environmental Literacy, Physical Science

Strand: CLIMATE SUMMIT

SC08: Climate Literacy with Informal Education Centers*

Tickets: \$15 | **Grade Level:** Not Grade Specific

Science & Emphasis: Environmental Literacy, Informal Science Education

Strand: CLIMATE SUMMIT

SATURDAY, DECEMBER 1 8:30 AM – 11:30 AM

SC09: ChemEx²: Chemistry Experiments and Experiences for Learning

Tickets: \$30 | **Grade Level:** High School

Science & Emphasis: Chemistry; Common Core - Literacy, Disciplinary Core Ideas (DCIs), Science & Engineering Practices (SEPs)

SC10: Avoid NGSS Implementation Pitfalls!

Tickets: \$20 | **Grade Level:** Not Grade Level Specific

Science & Emphasis: Applicable to All Sciences; Leadership (coaching, site leadership, administrator, professional development)

Strand: CA-NGSS EARLY IMPLEMENTER

SC11: Creating Storylines to Support Coherent Three Dimensional Learning

Tickets: \$10 | **Grade Level:** 6-12

Science & Emphasis: Applicable to All Sciences; Disciplinary Core Ideas (DCIs), Leadership (coaching, site leadership, administrator, professional development), Science & Engineering Practices (SEPs)

Strand: CSP

SC14: Don't Dry For Me California*

Tickets: \$15 | **Grade Level:** K-2

Science & Emphasis: Environmental Literacy, Integrated Science (bundled across domains)

Strand: CLIMATE SUMMIT

SC15: Hot and Out of Breath*

Tickets: \$15 | **Grade Level:** 7

Science & Emphasis: Environmental Literacy, Integrated Science (bundled across domains)

Strand: CLIMATE SUMMIT

SC16: Coral Reefs: Hot, Sour, and Drowning*

Tickets: \$15 | **Grade Level:** High School

Science & Emphasis: Biology; Earth/Space Science; Environmental Literacy

Strand: CLIMATE SUMMIT

SATURDAY, DECEMBER 1 8:30 AM – 6:00 PM

SC12: Are Your Lessons Designed for the NGSS?

Tickets: \$10 | **Grade Level:** Not Grade Level Specific

Science & Emphasis: Applicable to All Sciences, Engineering; Crosscutting Concepts (CCCs), Disciplinary Core Ideas (DCIs), Science & Engineering Practices (SEPs)

SC13: Making the Most of Science Notebooks

Tickets: \$10 | **Grade Level:** PreK-5

Science & Emphasis: Applicable to All Sciences; Pedagogy, Science & Engineering Practices (SEPs)

Strand: CALIFORNIA ACADEMY OF SCIENCES

SATURDAY, DECEMBER 1 3:00 PM – 6:00 PM

SC17: Citizen Science in the Elementary Classroom

Tickets: \$15 | **Grade Level:** PreK-5

Science & Emphasis: Applicable to All Sciences; Informal Science Education, Science & Engineering Practices (SEPs)

SC18: NGSS Implementation for Teacher Leaders

Tickets: \$10 | **Grade Level:** Not Grade Level Specific

Science & Emphasis: Applicable to All Sciences; Leadership (coaching, site leadership, administrator, professional development), Pedagogy, Science & Engineering Practices (SEPs)

Strand: EXPLORATORIUM

SC19: Strategies for NGSS Teaching for Learners with Special Needs

Tickets: \$10 | **Grade Level:** 6-8

Science & Emphasis: Earth/Space Science; Beef Up on Content, Crosscutting Concepts (CCCs), Pedagogy

Strand: CSP

SC20: Dangerous Earth*

Tickets: \$15 | **Grade Level:** 3-5

Science & Emphasis: Environmental Literacy, Integrated Science (bundled across domains)

Strand: CLIMATE SUMMIT

SC21: Considering California's Energy Future*

Tickets: \$15 | **Grade Level:** High School

Science & Emphasis: Earth/Space Science, Environmental Literacy, Physical Science

Strand: CLIMATE SUMMIT

SC22: Think Globally, Act Locally*

Tickets: \$15 | **Grade Level:** 8

Science & Emphasis: Environmental Literacy, Integrated Science (bundled across domains)

Strand: CLIMATE SUMMIT

*Climate Summit Session



Registration Form: 2018 California Science Education Conference, Pasadena

To check the status of your membership, the availability of additional fee events, visit conference.cascience.org. Incomplete forms not accompanied by payment will not be processed. One registrant per form, please. Forms must be received by November 5, 2018 to guarantee pre-registration. Please type or print neatly.



1) REGISTRANT INFORMATION

NAME _____

ADDRESS ☐ Home ☐ Business _____

CITY, STATE ZIP _____

☐ Please do not include my name on mailing lists other than CSTA's.

EMAIL* _____ TWITTER _____

**By providing your email address, you are consenting to be communicated with electronically by CSTA. Your consent may be revoked by notifying CSTA.*

HOME PHONE _____ WORK PHONE _____

SCHOOL DISTRICT _____ SCHOOL _____ GRADE _____

EMERGENCY CONTACT NAME & PHONE _____

☐ Special need request. Must register by November 5, 2018. (Includes dietary, ADA, nursing mom, etc.) _____

2) MEMBERSHIP ☐ 1 Year (\$50) ☐ New Teacher-2 Years (\$50) ☐ 3 Years (\$120) ☐ Lifetime (\$500) ☐ Preservice (\$25) \$ _____

3) REGISTRATION TYPE Select your option from section A or B

A) CONFERENCE Includes access to workshops, exhibit hall, general sessions, and focus speakers, and the option to purchase ticketed events (see Section 5).

or

B) SPECIAL EVENT REGISTRATION Includes registration for that event only. **Options in this section do not include conference registration.** Ticketed events (Section 5) may NOT be purchased with these registration types.

	REGULAR By 11/5	ON-SITE 11/6-12/5
CSTA Members (paid through 11/30/18 or later)		
<input type="checkbox"/> Full Registration (Fri.-Sun.)	\$190	\$210
<input type="checkbox"/> Weekend Only (Sat. & Sun.)	\$165	\$180
<input type="checkbox"/> Preservice Full Registration (Fri.-Sun.)	\$100	\$110
<input type="checkbox"/> Preservice Weekend Only (Sat. & Sun.)	\$55	\$65
Nonmembers		
<input type="checkbox"/> Full Registration (Fri.-Sun.)	\$264	\$285
<input type="checkbox"/> Weekend Only Registration (Sat. & Sun.)	\$235	\$250
Guests & Groups		
<input type="checkbox"/> Group (20 or more, single payment, regardless of membership) (Fri.-Sun.)	\$170	n/a
<input type="checkbox"/> Guest (non-teaching) (Fri.-Sun.)	\$88	\$98

☐ **CAST Academy Only** \$75
(Friday, November 30)

☐ **Climate Summit - Pre-Conference Day** \$75
(Thursday, November 29)

☐ **Onward: A Pre-Conference Event for Coaches and TOSAs** \$270
(Thursday, November 29)

Choose one of the following:

- ☐ **Year 1**
☐ **Year 2** (past Year 1 participation required)
☐ **Year 3** (min. 2 years experience in role)

TOTAL \$ _____

4) PROGRAM BOOK: ☐ I do NOT need a printed Program Book. I will use the Conference App. ☐ I do need a printed Program Book \$10 \$ _____

5) TICKETED AND PRE-CONFERENCE EVENTS (Purchase of a registration option from Section 3A above is required.)

<input type="checkbox"/> Onward Pre-Conference Event for Coaches and TOSAs:	\$135	Choose One: <input type="checkbox"/> Year 1 <input type="checkbox"/> Year 2 <input type="checkbox"/> Year 3	Total \$ _____
<input type="checkbox"/> Climate Summit Pre-Conference Day:	\$75		Total \$ _____
<input type="checkbox"/> CAST Academy:	\$50		Total \$ _____
<input type="checkbox"/> Friday - Paint & Sip: #Attending _____ \$35 per person		<input type="checkbox"/> Saturday - Movie Night: #Attending _____ Free	Total \$ _____
<input type="checkbox"/> Short Courses: Course # _____ Fee _____ Course # _____ Fee _____ Course # _____ Fee _____			Total \$ _____
<input type="checkbox"/> Awards Lunch - Stephen Pruitt: #Attending _____ \$48 per person			Total \$ _____

5) PAYMENT INFORMATION

GRAND TOTAL \$ _____

Payment may be made by check, purchase order, Visa, MasterCard, American Express or Discover.

☐ Check/P.O. enclosed (payable to CSTA) Check/P.O. # _____ (purchase order must accompany this form)

☐ Charge My ☐ Visa ☐ MasterCard ☐ AMEX ☐ Discover Account #

Name on Card _____

Billing Address (if different than above) _____

City/State/Zip _____

Signature _____ Security Code _____ Exp. Date _____

Mail or fax registration with payment to CSTA at: 950 Glenn Drive, Suite 150, Folsom, CA 95630 or Fax (916) 294-0415

By registering for the 2018 California Science Education Conference, you agree to the Registration Terms and Conditions available at conference.cascience.org.