

California Online Mathematics Education Times (COMET)

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COMET Archives (2000-2015): <http://comet.cmpso.org>

California Mathematics Project: <http://www.cmpso.org>

California Online Mathematics Education Times (COMET) is an electronic news bulletin providing STEM-related news from California and across the nation, as well as information about professional events and opportunities, current educational issues, and online resources.

Best wishes for a Happy Thanksgiving!

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ARTICLES & ANNOUNCEMENTS (CALIFORNIA FOCUS)

(1) Executive Summaries for the *Mathematics Framework* and the *ELA/ELD Framework* Now Available

Deborah Franklin (Education Programs Consultant for the Curriculum Frameworks and Instructional Resources Division of the California Department of Education) announced the availability of Executive Summaries for the state's *Mathematics Framework* and the *ELA/ELD Framework*, developed to support Common Core implementation.

"Anyone is welcome to download, print, copy, and distribute the executive summaries. We hope they will be used in professional learning or grade-level meetings as a starting point for entry to the complete frameworks," Franklin stated.

The executive summaries were produced for the Consortium for the Implementation of the Common Core State Standards and made possible through the support of the S.D. Bechtel, Jr. Foundation, the Charles and Helen Schwab Foundation, and the Silver Giving Foundation.

The *Executive Summary: Mathematics Framework* was prepared by Christopher Yakes and Mary Sprague, co-authors of the *Mathematics Framework*. The summary highlights essential information and guidance in the Framework and introduces readers to the information and support for teachers, administrators, and parents/guardians that the Framework contains. Grade-level and course-level chapters in the Framework provide examples of what standards-based instruction and learning look like in the classroom. Other chapters focus on access, instructional strategies, and assessment.

The *ELA/ELD Framework* integrates the California English Language Development Standards and the California Common Core State Standards for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects. The *Executive Summary: English Language Arts/English Language Development Framework* offers a glimpse into the *ELA/ELD Framework* and the guidance it provides for educators, including descriptive snapshots and vignettes of grade-level instruction. The summary was prepared by Hallie Yopp Slowik and Nancy Brynelson, two of the primary authors of the *ELA/ELD Framework*.

The executive summaries can be downloaded from the Sacramento County Office of Education website at www.scoe.net/castandards

(2) California Mathematics Placement Act of 2015 (SB-359)

URL:

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB359

Last month, Governor Jerry Brown signed into law SB-359, requiring governing boards or bodies of local educational agencies (LEAs) to adopt (if they haven't already done so and before the beginning of the 2016-17 school year) a fair, objective, and transparent mathematics placement policy for pupils entering grade 9. Boards and LEAs are required to include all of the following in their placement policies:

- Multiple objective academic measures of pupil performance
- A placement assessment within the first month of the school year to ensure accurate placement; reevaluation of individual pupil progress is permitted
- Annual examination of aggregate pupil placement data to ensure that pupils who are qualified to progress in mathematics courses based on their performance on objective academic measures are not held back in a disproportionate manner on the basis of their race, ethnicity, gender, or socioeconomic background
- Clear and timely recourse for pupils and their parents or legal guardians who question the pupil's placement.

The policy must be posted on the governing board's or LEA's website.

To read the full text of the bill, visit

https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB359

(3) Public Comment Invited on *Science Framework Draft*

Source: California Department of Education

Last week, Lupita Cortez Alcalá (Deputy Superintendent, Instruction & Learning Support Branch of the California Department of Education) invited public comment on the draft *2016 Science Framework for California Public Schools, Kindergarten Through Grade Twelve (Science Framework)*. The *Science Framework* was developed to help teachers, district and county administrators, other educators, and publishers design instructional materials, curriculum, instruction, assessments, and professional learning.

The public has until 19 January 2016 to review the *Science Framework* online at www.cde.ca.gov/ci/sc/cf/scifw1st60daypubreview.asp and to submit comments at <http://surveys2.cde.ca.gov/s.asp?k=144659424255> or by emailing scienceframework@cde.ca.gov

The public's comments will be presented to the Instructional Quality Commission in February and March 2016 for review and possible inclusion in the final draft of the *Science Framework*. The final draft will be available for a second public review in late spring or early summer. The State Board of Education is scheduled to review and act on the *Science Framework* in September/November 2016.

Questions regarding the public comment review period or the *Science Framework* revision process can be directed to Bryan D. Boyd, Education Programs Consultant, Curriculum Frameworks and Instructional Resources Division: 916-445-4910 or bboyd@cde.ca.gov.

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Related Announcements

(a) Tom Adams to Succeed Lupita Cortez Alcalá as Deputy Superintendent of CDE's Instruction and Learning Support Branch

URL: www.cde.ca.gov/nr/ne/yr15/yr15rel86.asp

Last week, State Superintendent of Public Instruction Tom Torlakson announced that he is appointing Tom Adams to succeed Lupita Cortez Alcalá as Deputy Superintendent of the Instruction and Learning Support Branch of the California Department of Education, effective December 1. Alcalá will become Executive Director of the California Student Aid Commission on that date.

(b) Mathematics and Science Teachers in Rural Districts Sought to Participate in Study

The owner of Belden Russonello Strategists, Nancy Belden, is seeking a few mathematics and science public school teachers in rural and small town districts for a half-hour telephone interview as part of a study on implementation of the new state standards in California. The study was commissioned by the Center for the Future of Teaching and Learning at WestEd. Qualified teachers will receive a \$75 honorarium for their time. If interested, please contact Belden at nancybelden@brspoll.com

(4) California Alternate Assessment Content Reviewers Sought; Smarter Balanced Interim Assessment Materials Available

Source: CAASPP Update – 18 November 2015

The California Department of Education (CDE) produces an informative newsletter for K-12 educators that provides updates on the state's assessment system (California Assessment of Student Performance and Progress--CAASPP). To subscribe, send a blank email message to subscribe-caaspp@mlist.cde.ca.gov.

The latest issue includes information about California Alternate Assessments (CAAs) and reports that over the next year, opportunities will become available for California educators to contribute their expertise to the CAASPP development process as content reviewers in the following assessment areas:

- English language arts--alternate
- Language arts--Spanish
- Mathematics--alternate
- Science--alternate
- Science--general

ETS is now collecting applications from California educators who are interested in participating in future content reviews. If interested, please apply by completing a 2015-16 CAASPP Content Reviewer Application, located at http://etsforms.formstack.com/forms/content_reviewer_application

Also included in the current newsletter is information of interest to teachers who would like to use **Smarter Balanced Interim Assessments**:

Educational Testing Service (ETS), through the CAASPP administration contract with the CDE, delivered the Smarter Balanced Digital Library and Interim Assessment Clinic for LEA CAASPP coordinators throughout the state last month. This in-person training offered insight on such topics as the use of formative assessment practices to support teaching and learning in the classroom, promoting the use of the Digital Library in LEAs, and considerations for administering interim assessments and interpreting results.

The presentation slides from this well-received clinic are now available on the CAASPP Digital Library and Interim Assessment Training webpage (www.caaspp.org/training/dl-and-ia/). Educators who use or are interested in using the Smarter Balanced Interim Assessments and/or Digital Library are encouraged to review these highly informative presentation slides (see www.caaspp.org/rsc/pdfs/CAASPP.DL-IA-clinic-presentation.2015.pdf).

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Related Article:

“Common Core's Big Test: Tracking 2014-15 Results”

Last week, *Education Week* posted an interactive info-graphic showing a U.S. map containing links to assessment results for each state, as well as indicating whether each was a PARCC or Smarter Balanced state: see <http://tinyurl.com/qc72kbb> The information includes a comparison of student scores on state-mandated mathematics and English/language arts tests given in 2014-15 (typically the first year of implementation of the new assessments) and in 2013-14 (or the most recent previous year available).

(5) Call for Presenters: 2016 California Educator Excellence Summit

URL: www.cde.ca.gov/nr/ne/yr15/yr15rel84.asp

URL (Flyer): www.cde.ca.gov/pd/ps/documents/savethedate.pdf

The California Educator Excellence Summit will be held in Sacramento on 20 January 2016 from 10 a.m.-4 p.m. Admission to the Summit is free. To register, visit <https://cdefoundation.wufoo.com/forms/california-educator-excellence-summit/>

The Summit will highlight the work of California’s local educational agencies (LEAs) as it relates to the document, *Greatness by Design: Supporting Outstanding Teaching to Sustain a Golden State*. The goal of the Summit is to share promising practices with the larger California education community to support LEAs in making research-aligned decisions regarding how they will spend their share of the \$490 million in Educator Effectiveness funds included in the 2015 State Budget to improve their local professional learning systems.

The California Department of Education (CDE) is seeking experienced and engaging presenters and invites you to submit a formal proposal for review. Workshop topics

should be relevant to the intent of the Summit and align with the following Summit strands: Recruiting and Distributing Excellent Educators to All Communities, Educator Preparation, Induction of Teachers and Leaders, Opportunities for Professional Learning, Educator Evaluation, and Leadership and Career Development.

Interested applicants must review the presenter guidelines and submit a completed Presenter Proposal Form and Presenter Assurances. Please see www.cde.ca.gov/pd/ps/proposalguide.asp for details.

Proposals must be received by 5:00 p.m. on 9 December 2015. Proposal acceptance decisions are expected to be made within two weeks after the closing date.

Questions may be directed to the Educator Excellence Office at educatorexcellence@cde.ca.gov

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## ARTICLES & ANNOUNCEMENTS (NATIONAL FOCUS)

**(1) Retired NASA Mathematician Receives Presidential Medal of Freedom**  
URL: [www.makers.com/blog/katherine-johnson-presidential-medal-freedom](http://www.makers.com/blog/katherine-johnson-presidential-medal-freedom)

Among the 17 individuals honored last night at the Presidential Medal of Freedom ceremony held at the White House was Katherine Johnson, an African American woman who worked for NASA as a mathematician and whose computations influenced every major venture in space from Mercury through the Shuttle program. The Presidential Medal of Freedom is the Nation's highest civilian honor, presented to individuals who have made especially meritorious contributions to the security or national interests of the United States, to world peace, or to cultural or other significant public or private endeavors.

President Obama described Johnson as a pioneer in American space history. She was hired as a research mathematician at the Langley Research Center with the National Advisory Committee for Aeronautics (NACA), the agency that preceded NASA, after hiring was opened to African Americans and women. Johnson exhibited exceptional technical leadership and is known especially for her calculations of the 1961 trajectory for Alan Shepard's flight (first American in space), the 1962 verification of the first flight calculation made by an electronic computer for John Glenn's orbit (first American to orbit the earth), and the 1969 Apollo 11 trajectory to the moon. In her later NASA career, Johnson worked on the Space Shuttle program and the Earth Resources Satellite and encouraged students to pursue careers in science and technology fields.

In a filmed interview of Johnson, she said, "I felt most proud of the success of the Apollo mission. They were going to the moon! I computed the path that would get you there. You determined where you were on Earth, where you started out, and where the moon would be at a given time. We told them how fast they would be

going, and the moon would be there by the time they got there. We were really concerned when they were leaving the moon coming back. He had to do it just as we said. If he missed it by a degree, he doesn't get into orbit. I was sitting there looking at the television thinking, "'Boy, I hope he got that right!' And I was sitting there hoping I was right, too!"

The video of Johnson, which was produced by MAKERS (see below), notes that in 1962, NASA used new electronic data processors to calculate launch conditions for the Friendship 7 mission. Astronaut John Glenn insisted that Johnson check the computer's figures. Johnson recalled, "[Glenn] said, 'Tell *her*.'" (He knew I was the only woman who was working on this.) He said, "If she comes up with the same answer that they have, then the computer's right." It took me a day and a half to compute what the computer had given him. It turned out to be the exact numbers that they had."

Johnson's interview (less than five minutes long) is available at [www.makers.com/katherine-g-johnson](http://www.makers.com/katherine-g-johnson)

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### Related Information:

**MAKERS Website Includes Micro-Documentaries of Females in STEM Areas**

URL: <http://www.makers.com>

MAKERS launched in 2012 and features over 3,000 videos and the stories of more than 300 women. STEM educators may find some of these short videos interesting and useful for the classroom. Searching on "math" ([www.makers.com/search?s=math](http://www.makers.com/search?s=math)), "science" ([www.makers.com/search?s=science](http://www.makers.com/search?s=science)), or "STEM" ([www.makers.com/search?s=stem](http://www.makers.com/search?s=stem)) will bring up a number of videos, including one about Maria Klawe, the fifth president of Harvey Mudd College.

"A renowned mathematician, computer scientist and scholar, Klawe is the first woman to lead the College since its 1955 founding. Prior to joining Harvey Mudd College, she served as dean of engineering and professor of computer science at Princeton University. Klawe is passionate about making science, technology, engineering and math (STEM) accessible to diverse groups and in her tenure at Harvey Mudd her initiatives raised the percentage of women majoring in computer science from ten percent to forty percent."

In the video ([www.makers.com/moments/girls-and-stem](http://www.makers.com/moments/girls-and-stem)), Klawe concluded: "If you want to change literacy or health care or any of the problems that affect the world, then computer science is going to be one of the ingredients. And so, you can't have too much computer science and you can't have too much mathematics."

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**(2) Free Downloads of Two Books on Einstein Available Through Next Monday (Nov. 30)**

Earlier today, the National Academies Press announced the availability of free PDF downloads through Monday, November 30, of two books on Einstein:

(a) *Einstein's Unfinished Symphony: Listening to the Sounds of Space-Time*

"A new generation of observatories, now being completed worldwide, will give astronomers not just a new window on the cosmos but a whole new sense with which to explore and experience the heavens above us. Instead of collecting light waves or radio waves, these novel instruments will allow astronomers to at last place their hands upon the fabric of space-time and feel the very rhythms of the universe..." Download this book free until November 30 from <http://tinyurl.com/ouhfeot>

(b) *Einstein Defiant: Genius Versus Genius in the Quantum Revolution*

"I find the idea quite intolerable that an electron exposed to radiation should choose of its own free will, not only its moment to jump off, but also its direction. In that case, I would rather be a cobbler, or even an employee in a gaming house, than a physicist." - Albert Einstein

"A scandal hovers over the history of 20th century physics. Albert Einstein--the century's greatest physicist--was never able to come to terms with quantum mechanics, the century's greatest theoretical achievement. For physicists who routinely use both quantum laws and Einstein's ideas, this contradiction can be almost too embarrassing to dwell on. Yet Einstein was one of the founders of quantum physics and he spent many years preaching the quantum's importance and its revolutionary nature..." Download this book free until November 30 from <http://tinyurl.com/pnooutu>

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**Related Announcement**

*Mathematics Curriculum, Teacher Professionalism, and Supporting Policies in Korea and the United States: Summary of a Workshop*

The National Academies Press recently released a book that reports on the June 2012 joint Korea-U.S. workshop on Mathematics Teaching and Curriculum. The workshop was sponsored by the United States National Commission on Mathematics Instruction and Seoul National University and was organized to answer questions related to curriculum development, textbooks, learning trajectories, and more. The report summarizes the workshop's presentations and discussions. It is available for free download from <http://tinyurl.com/ppztgpf>

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**(3) No Child Left Behind (NCLB) Expected to be Replaced with the Every Student Succeeds Act Next Month**

URL (11/13):

<http://edworkforce.house.gov/newsroom/documentsingle.aspx?DocumentID=399757>

**URL (11/19):**

<http://edworkforce.house.gov/news/documentsingle.aspx?DocumentID=399784>

Last Thursday (11/19/2015), a House-Senate conference committee reached agreement on a proposal to reauthorize the Elementary and Secondary Education Act (ESEA), bringing Congress closer to replacing *No Child Left Behind* with new legislation, tentatively called the *Every Student Succeeds Act*. The agreement represents a compromise between the House-passed *Student Success Act* (H.R. 5) and the Senate-passed *Every Child Achieves Act of 2015* (S. 1177). The Senate and House are expected to take up the legislation as early as next week, with reauthorization of ESEA expected by the end of 2015.

A summary of the resulting framework for the new bill is available at [http://edworkforce.house.gov/uploadedfiles/joint\\_eesa\\_conference\\_framework\\_short\\_summary.pdf](http://edworkforce.house.gov/uploadedfiles/joint_eesa_conference_framework_short_summary.pdf)

*"No Child Left Behind* has been failing students, parents, teachers, and state and local education leaders for far too long, and today we took an important step in replacing this flawed law," said Education and the Workforce Committee Chairman John Kline (R-MN). "But there is still work to be done. We now have to turn this framework into a final bill for our House and Senate colleagues to review. I am confident that once they do, they will see it as an opportunity to replace a failed approach to education with a new approach that will reduce the federal role, restore local control, and empower parents. We will continue to work with all of our colleagues in the House as we move this important process forward."

The compromise would consolidate nearly 50 programs into a flexible block grant to states, a priority for Kline. And it would take direct aim at what some have called the "National School Board" by restricting the power of the U.S. Secretary of Education in matters pertaining to teacher evaluation, testing, standards, school turnarounds, and more.

The conference panel adopted a great number of amendments, including one from Sen. Michael Bennet, D-Colo., which would allow states to set limits on testing, as well as provisions allowing states and districts to use new flexible funds on arts and STEM education.

Recent snippets from nearly a dozen major news sources regarding the compromise are available on the House's Education and the Workforce Committee website:

<http://edworkforce.house.gov/news/documentsingle.aspx?DocumentID=399849>

Links are available to the articles, which provide more details about the proposed framework upon which the new legislation will be built.

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**Related Document**

**STEM Education Language in the Framework for the Every Student Succeeds Act**  
URL: <http://blogs.edweek.org/edweek/campaign-k-12/ESSALanguage.pdf>

Visit the website above to see the recommended language on STEM education-related initiatives that may appear in the *Every Student Succeeds Act*.

[Page 181] SEC. 2245. STEM MASTER TEACHER CORPS.

"(a) In General.-From the funds reserved under section 2241(4), the Secretary may award grants to State educational agencies to enable such agencies to support the development of Statewide STEM master teacher corps.

"(b) STEMMASTER TEACHER CORPS.-For the purposes of this section, the term 'STEM master teacher corps' means a State-led effort to elevate the status of the science, technology, engineering, and mathematics teaching profession by recognizing, rewarding, attracting, and retaining outstanding science, technology, engineering, and mathematics teachers, particularly in high-need and rural schools, by-

"(1) selecting candidates to be master teachers in the corps on the basis of-

"(A) content knowledge based on a screening examination; and

"(B) pedagogical knowledge of and success in teaching;

"(2) offering such teachers opportunities to-

"(A) work with one another in scholarly communities;

"(B) participate in and lead high-quality professional development; and

"(3) providing such teachers with additional appropriate and substantial compensation for the work described in paragraph (2) and in the master teacher community.

[pp. 208-209] "Subject to section 4106(f), each local educational agency, or consortium of such agencies, that receives an allocation under section 4105(a) shall use a portion of such funds to develop and implement programs and activities that support access to a well-rounded education and that-

... "(3) may include programs and activities, such as-

(C) programming and activities to improve instruction and student engagement in science, technology, engineering and mathematics, including computer science, (referred to in this section as 'STEM subjects') by-

"(i) increasing access for students through grade 12 who are members of groups underrepresented in such subject fields, such as female students, minority students, English learners, children with disabilities, and economically disadvantaged students, to high-quality courses;

"(ii) supporting the participation of low-income students in nonprofit competitions related to STEM subjects (such as robotics, science research, invention, mathematics, computer science, and technology competitions);

"(iii) providing hands-on learning and exposure to science, technology, engineering, and mathematics and supporting the use of field-based or service learning to enhance the students' understanding of the identified subjects;

"(iv) supporting the creation and enhancement of STEM-focused specialty schools [The term 'STEM-focused specialty school' means a school, or dedicated program within a school, that engages students in rigorous, relevant, and integrated learning experiences focused on science, technology, engineering, and mathematics, including computer science, which include authentic schoolwide research.]; and

"(v) facilitating collaboration among school, after-school program, and informal program personnel to improve the integration of programming and instruction in the identified subjects;...

[p. 224] SEC. 4205 . LOCAL ACTIVITIES.

"(a) Authorized Activities.-Each eligible entity that receives an award under section 4204 may use the award funds to carry out a broad array of activities that advance student academic achievement and support student success, including...

"(13) programs that build skills in science, technology, engineering, and mathematics (referred to in this paragraph as 'STEM'), including computer science, and that foster innovation in learning by supporting nontraditional STEM education teaching methods...

Visit <http://blogs.edweek.org/edweek/campaign-k-12/ESSALanguage.pdf> for more proposed bill language.

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#### **(4) Student Performance in Mathematics on 2015 NAEP Shows Slight Decline Since 2013**

**URL (NAGB):** [www.nagb.org/newsroom/naep-releases/2015-reading-math-tuda.html](http://www.nagb.org/newsroom/naep-releases/2015-reading-math-tuda.html)

**URL (NCTM):** <http://tinyurl.com/pb2flgv>

Since 2013, the percentage of students scoring at or above the Proficient level on the mathematics portion of the National Assessment of Educational Progress (NAEP) has declined slightly among fourth- and eighth-graders, according to *The Nation's Report Card: 2015 Mathematics and Reading*. However, scores are higher than they were in the 1990s when the assessments were first administered.

Forty percent of fourth-grade students performed at or above Proficient in 2015 compared to 42% in 2013 and 24% in 2000. In grade 8, 33% were at or above Proficient in grade 8 compared to 35% in 2013 and 26% in 2000. Since 1990, NAEP math scores have risen steadily. Scores for grade 4 were 27 points higher in 2015 than in 1990, and they were 20 points higher in 2015 than in 1990 for grade 8.

Of the 21 large urban districts that volunteered to participate in NAEP's Trial Urban District Assessment (TUDA) in 2015, six saw improved scores from 2013 for at least one grade and one subject. Mathematics scores increased in four urban districts and decreased in 10 urban districts in at least one grade.

"While the downturn in reading and math scores nationally and among states is concerning, especially in math, we are encouraged by the progress made by some of the participating urban districts," said Terry Mazany, chair of the National Assessment Governing Board, which oversees NAEP. "Our nation's schools and school districts are experiencing a lot of change and NAEP gives us an independent and objective long-term measure of student achievement and lets us know where we stand today compared to past performance."

“Many states and urban districts have made huge changes in mathematics instruction and curricula these past two years,” said Governing Board Vice Chair Lucille E. Davy, former commissioner of the New Jersey Department of Education. “While some scores went down in 2015, others went up, so it will be important to watch how the data shift over the next couple of years to understand if this year’s scores are part of a greater trend.”

“The latest NAEP results may reflect some of the recent changes in mathematics education as teachers implement new standards,” said National Council of Teachers of Mathematics (NCTM) President Diane Briars. “Although looking more closely at the results indicates that instructional changes are paying off in some districts and states, it will take more time to see more broad-based benefits nationwide.”

“The Nation’s Report Card’s distinctive, apples-to-apples comparison data are critical for urban school leaders to meaningfully address what’s not working and to confidently build on what is,” said Eric Gordon, CEO of the Cleveland Metropolitan School District, which has participated in TUDA since 2003. “For Cleveland, the results affirm how implementation of the Common Core curriculum and changes in the way we use time, talent, and resources in our schools are key contributors to gains in student achievement.”

For more information on the NAEP Results, please visit the websites above.

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### **(5) STEM Ecosystem Leaders Convene in Washington, D.C.**

**URL:** <http://stemecosystems.org/>

On November 12, leaders from 27 local and regional networks for STEM learning came together in Washington, D.C. to exchange strategies for building all students’ STEM knowledge and expertise through multi-sector “ecosystems” that bring together schools, out of school programs, businesses, institutions of higher education, and STEM-rich institutions such as museums. The education, business, and community leaders who participated also met with White House officials to discuss equitable STEM education and federal STEM policy.

These 27 STEM Learning Ecosystems represent the inaugural group selected by the STEM Funders Network (see <http://stemecosystems.org/about-the-stem-funders-network>) for support as part of a larger commitment that will grow to support 100 ecosystems in its first three years. These groups are forming a diverse set of communities from across the country by creating engaging, real-world STEM learning experiences. Each of the networks is receiving hands-on technical assistance individualized to the needs of each community from the STEM Funders Network (SFN).

“The President has called for all of us to think of creative and effective ways of getting all of our students engaged in STEM education,” noted John Holdren, Assistant to the President for Science and Technology, and Director of the White House Office of

Science and Technology Policy. "It's heartening to see so many communities working locally and together in response to the President's call to action."

SFN has four foundational principles that are infused throughout the network's activities:

- The STEM disciplines should not be in separate silos; rather they must be integrated through a continuum of learning and a dynamic framework.
- STEM literacy emerges across learning settings and throughout one's lifetime. No one sector or setting can provide the comprehensive experiences and content needed to achieve STEM literacy.
- Advancements and innovations in STEM education should connect directly to the changing needs of the STEM workforce.

SFN's activities and projects are informed by research and will be evaluated for their effectiveness and impact.

"We look forward to continuing our work with communities nationwide," stated Gerald Solomon, co-chair of the STEM Funders Network and executive director of the Samueli Foundation. "We know that these grassroots, local partnerships can provide a sustainable way to ensure STEM learning is truly 'everywhere' for all learners as they build the skills and knowledge to thrive in a global workforce."

Five California STEM Ecosystems were among those selected to participate. For more information about each, please see below:

**Bay Area STEM Ecosystem:** <http://stemecosystems.org/first-community-of-practice/#bay-area-stem>

**Los Angeles Regional STEM Hub:** <http://stemecosystems.org/first-community-of-practice/#la-stem-hub>

**Orange County STEM Initiative:** <http://stemecosystems.org/first-community-of-practice/#oc-stem>

**San Diego Ecosystem:** <http://stemecosystems.org/first-community-of-practice/#san-diego>

**Ventura County STEM Regional Network:** <http://stemecosystems.org/first-community-of-practice/#san-diego>

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*Example:* Subscribe COMET Albert Einstein

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