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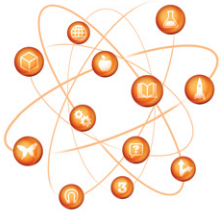

EARLY CHILDHOOD STEM CONFERENCE
Science Technology Engineering Math

FEBRUARY 6-8 2014

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For over 120 years, Children's Home Society of California has served the changing needs of parents, child care providers, and the community at large.

Creating a quality environment for children requires skill, dedication, patience, and continuing education. We provide these quality supportive services for child care providers:

- Child care and early education workshops and training
- A lending library with toys, games, books, and resources
- Technical support to help you operate a successful, quality child care business
- Newsletters with helpful information about child development, health, curriculum, activities, and more!

To provide support for the families in your program, we also offer the following resources:

- Resources and education about your child's development
- Resources for supporting your child's early education
- Parenting newsletters, workshops, and resources
- Referrals to licensed child care providers throughout Orange County
- Payment for child care for low income families
- And much more…

As the local Resource and Referral, we also refer families to licensed child care providers throughout Orange County. Be sure to keep us updated with details about the services that your program provides! For more information about how we can support your licensed program, call us at (714) 456-9800. You can also access our Family Education Program materials online at www.chs-ca.org.

CHILDREN'S HOME SOCIETY OF CALIFORNIA

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WE THANK OUR SPONSORS

PLATINUM

CHILDREN'S HOME SOCIETY OF CALIFORNIA

BRONZE

OC STEM INITIATIVE

SUPPORT

ORANGE COUNTY BUSINESS COUNCIL
The Leading Voice of Business

DISCOVERY SCIENCE CENTER

CPIN
California Preschool Instructional Networks
REGION 9 - Orange . San Diego . Imperial

ORANGE COUNTY DEPARTMENT OF EDUCATION

SCHEDULE AT A GLANCE

THURSDAY, FEBRUARY 6

Registration	3:00 pm - 4:30 pm
Special Evening Event: Expert Panel Discussion - Reception	5:00 pm – 8:00 pm

FRIDAY, FEBRUARY 7

Registration	8:00 am - 10:00 am
Continental Breakfast	8:00 am - 9:45 am
Opening Address: Al Mijares, Ph.D. "Future Plan"	8:30 am – 8:45 am
Keynote: Patricia Hunter McGrath "Intentional Teaching"	8:45 am – 10:00 am
Exhibit Hall & Teaching Lab	9:00 am - 5:00 pm
Break	10:00 am – 10:30 am
Concurrent Workshops	10:30 am - 12:00 pm
Lunch	12:00 pm - 1:00 pm
Concurrent Workshops	1:00 pm – 4:30 pm
Discovery Science Center Tour	1:00 pm – 4:30 pm

SATURDAY, FEBRUARY 8

Registration	8:00 am - 10:00 am
Continental Breakfast	8:00 am - 9:45 am
Keynote: Alison Gopnik "The Philosophical Baby"	8:30 am – 10:00 am
Exhibit Hall & Teaching Lab	9:00 am - 5:00 pm
Break	10:00 am – 10:30 am
Concurrent Workshops	10:30 am - 12:00 pm
Lunch - Furniture Raffle	12:00 PM - 1:00 PM
Concurrent Workshops	1:00 pm – 4:30 pm

EARLY CHILDHOOD STEM CONFERENCE

Science Technology Engineering Math

MISSION

The Children's Center at Caltech in collaboration with The Children & Families Commission of Orange County and THINK Together, are sponsoring and hosting the *Early Childhood Science, Technology, Engineering, and Math (ECSTEM)* Conference to promote and increase awareness of the importance of introducing STEM education in early childhood (birth through eight years).

WELCOME

Welcome to the 2014 Early Childhood Science Technology Engineering Math conference. As the shortage of professionals in STEM fields is heading to crisis levels in the US and California, we must act now to change the direction of the future for our children and for our communities. Our immediate goal is to provide the best opportunities for our youngest learners, at an age that is most crucial in developing a strong foundation of knowledge and skills for successful lifelong learning: birth through eight years. To accomplish this goal, we are gathering early childhood practitioners, researchers, business leaders, policymakers, and parents to collectively develop a plan to train early childhood educators to provide the highest quality STEM opportunities for our children, spreading awareness of the importance of STEM skills to families and involving them in the process, and partnering with the community to leverage resources for our educators, children and their families. It's a big order, but together we can make great strides toward equipping our children with the tools necessary to create change, innovate, and be effective and productive individuals – the skilled STEM professionals of the future.

Doug Clements, a Kennedy Endowed Chair and Professor in Early Childhood Learning at Denver University, found that "the development of mathematics skills early on may be an even greater predictor of later school success", including reading skills and language development, than "early reading skills" itself! His extensive research exemplifies why it is critically important that our children are provided with the opportunities necessary to build skills essential for lifelong learning success.

We all must take action now! Thank you for joining us in this movement to strengthen our educational system for future generations to come!

Sincerely,

Early Childhood STEM Conference Committee

2014 CONFERENCE STEERING COMMITTEE

Susan Wood, Children's Center at Caltech - Director
Kheng Ly-Hoang, Children's Center at Caltech - Science Curriculum Coordinator
Michelle Pelliccino, THINK Together - Executive Director of Early Learning and School Age Care
Tiffany Alva, THINK Together - Early Learning Program Manager
Kelly Pijl, Children & Families Commission of Orange County – External Affairs Director
Lisa Burke, Burke Consulting – Principal

2014 ECSTEM CONFERENCE HOSTING ORGANIZATION EXECUTIVES

Grace Fisher-Adams, The Children's Center at Caltech -Board of Trustees President
Randy Barth, THINK Together - Founder and CEO
Christina Altmayer, Children and Families Commission of Orange County - Executive Director

WHO WE ARE

The Children's Center at Caltech (CCC) is a non-profit organization providing quality early education and care for children ages six months through five years since 1972. The CCC is a science based program that utilizes a constructivist approach to plan, develop, and implement an inquiry based curriculum.

The Children & Families Commission of Orange County supports programs for young children and their families to ensure children are healthy and ready to learn when they enter school, including an Early Literacy and Math Program. THINK Together, manages the Commission's Early Literacy and Math Program in Orange County.

THINK Together is a non-profit provider of extended learning time programs, serving more than 100,000 youths in over 400 locations in California including Los Angeles, Orange, Riverside, Sacramento, San Bernardino, and San Diego Counties, in partnership with a wide variety of public and private agencies.

Susan Wood

Michelle Pelliccino

Kelly Pijl

Kheng Ly-Hoang

Tiffany Alva

Lisa Burke

OPENING ADDRESS SPEAKER

Al Mijares

Superintendent Orange County Department of Education

Dr. Al Mijares has been a dedicated educator for over 34 years. He graduated from Simi Valley High School in 1971, and attended California State University, Northridge on a scholarship where he earned his Bachelor's degree in Child Development/Special Education. Al earned his Master's degree in Social Welfare from the University of California, Berkeley and his doctorate from USC. Al's distinguished career saw him in K-12 classrooms, a school principal, and Superintendent of the Bakersfield City School District, Coachella Valley Unified School District, and Santa Ana Unified School District. He also served as Vice President of the Western Region of the College Board before becoming Superintendent of the Orange County Department of Education. Al and his wife of nearly 40 years are the proud parents of five grown sons, all educated in the Orange County public school system.

KEYNOTE SPEAKERS

Patricia Hunter McGrath "Intentional Teaching"

Executive Director Branches Atelier

Patricia Hunter McGrath is the Executive Director/Atelierista of Branches Atelier in Culver City, California. Over the past 15 years she has developed an innovative early childhood program inspired by the Reggio Emilia Approach. She also speaks at conferences throughout the United States and abroad and has visited Reggio Emilia, Italy six times. She is also a contributing author of the book *In the Spirit of the Atelier* published by Davis Press and *Insights and Inspiration* from Reggio Emilia also published by Davis Press.

Alison Gopnik "The Philosophical Baby: What children's minds tell us about love, truth and the meaning of life"

Professor UC Berkeley Department. of Psychology

Alison Gopnik is a professor of psychology and affiliate professor of philosophy at the University of California at Berkeley. She received her BA from McGill University and her PhD. from Oxford University. She is an internationally recognized leader in the study of children's learning and development and was the first to argue that children's minds could help us understand deep philosophical questions. She is the author or coauthor of over 100 journal articles and several books including *Words, thoughts and theories* MIT Press, 1997, and the bestselling and critically acclaimed popular books *The Scientist in the Crib* William Morrow, 1999, and *The Philosophical Baby; What children's minds tell us about love, truth and the meaning of life* Farrar, Strauss and Giroux, 2009. She writes the *Mind and Matter* science column for *The Wall Street Journal*. And she has also written widely about cognitive science and psychology for *Science, The New York Times, Scientific American, The Times Literary Supplement, The New York Review of Books, New Scientist* and *Slate*, among others. She has frequently appeared on TV and radio including *The Charlie Rose Show* and *The Colbert Report*. She has three sons and one grandson and lives in Berkeley, California with her husband Alvy Ray Smith.

SPECIAL EVENING EVENT

Thursday, February 6, 2014

Advanced registration required (240 max) $50

STEM Panel Discussion, Catalina Ballroom I, 5:00 PM - 6:30 PM

Reception, Fountain Terrace/Garden Terrace Patio, 6:30 PM - 8:00 PM

This event will be filled with highly influential guests from distinguished professors and practitioners to top business leaders and respected political figures. The evening will begin with the panel discussion followed by hearty hors d'oeuvres.

"The Future of Math and Science in Early Childhood Education" PANEL SPEAKERS

Christina Altmayer

Executive Director Children and Families Commission of Orange County

Christina Altmayer is the Executive Director of the Children and Families Commission of Orange County. The Commission is responsible for allocating funds from the Proposition 10 tobacco tax that was approved by voters in 1998 to programs that support the health, early education, and development of young children and families. Previously, she was the President of Altmayer Consulting, Inc. that specialized in management consulting. As a consultant she provided services to the Commission since its inception, was the program director for its pediatric health investments, and worked with numerous Children and Families/First 5 Commissions throughout California on long term financial planning, strategy development, program design and implementation, and evaluation.

Douglas Clements

Kennedy Endowed Chair in Early Childhood Learning and Professor University of Denver

Doug Clements, Kennedy Endowed Chair and Professor at the University of Denver, is a researcher and curriculum developer who directs research funded by the National Science Foundation and the Institute of Education Sciences and has published over 100 refereed research studies, 8 books, 50 chapters, and 250 additional publications in mathematics and technology education. He has served on the President's National Mathematics Advisory Panel, the Common Core State Standards committee of the National Governor's Association and the Council of Chief State School Officers, the National Research Council's Committee on Early Mathematics, the National Council of Teachers of Mathematics national curriculum and Principles and Standards committees, and is a coauthor of each of their reports. He is presently serving on the Common Core committee. See http://portfolio.du.edu/dclemen9.

EllieKaucher

Dean Pacific Oaks College

Dr. Ellie Kaucher currently serves as the Vice President of Academic Development and Compliance at Pacific Oaks College and her career in education spans over 24 years in teaching and administration from pre-school to higher education.

Dr. Kaucher has conducted extensive research on educational leadership and co-authored the NAEYC Code of Ethics supplement for administrators, as well as authoring a number of articles on Leadership and Ethical Decision making including "Educating Immigrant Children in the United States." She holds a Doctorate Degree in Educational Leadership and Management and a Master's Degree in Human Development with a specialization in Early Childhood Education from Pacific Oaks College and a second Master's Degree in Education with an emphasis in Behavioral Management.

Dr. Kaucher serves on numerous educational committees and boards and is the current President of the California Association for the Education of Young Children (CAEYC).

Dr. Osnat Zur

Ph.D Senior Program Associate WestEd

Osnat Zur is a Developmental Psychologist, with expertise in children's cognitive development, focusing primarily on the development of mathematical and scientific reasoning. Dr Zur is a senior program associate at the Center for Child and Family Studies at WestEd. In this capacity, she served as the lead researcher and author for the California preschool foundations in the domain of science, and for the state's preschool curriculum framework in mathematics and in science.

Gerald Solomon

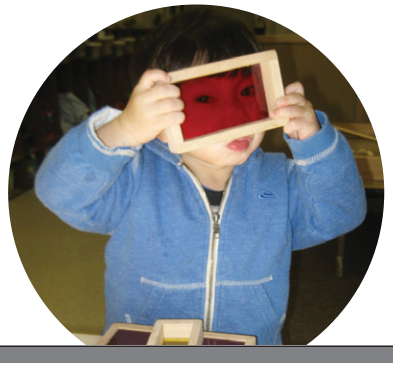
Executive Director Samueli Foundation

Gerald Solomon offers a diverse executive leadership background, having served as President and CEO of several highly successful nonprofit as well as for-profit organizations, including a distinguished 18 year career as a civil trial attorney and Judge Pro Tem. During his tenure at Samueli, the Foundation has redesigned its philanthropic strategy from responsive grantmaking to one initiative based. STEM education serves as one of the core pillars. Under his leadership, and in collaboration with several funders including S.D. Bechtel Jr and the Noyce Foundations, he helped design national, state and local STEM networks. He currently serves as Co-Chair of the National STEM Funders Network, is actively engaged in CSLNet, is Chair of the OC STEM Initiative, and on the corporate board of the National Science Teachers Association.

Gregory Washington

Dean Henry Samueli School of Engineering, University of California Irvine

Gregory Washington is the Dean of The Henry Samueli School of Engineering at the University of California Irvine. Professor Washington has been involved in multi-domain research for the last 20 years. His core area of interest lies in the area of dynamic systems: modeling and control. During this time he has been involved in the following applications: the design and control of mechanically actuated antennas, advanced control of machine tools, the design and control of Hybrid Electric Vehicles, and structural position and vibration control with smart materials. He is internationally known for his research on ultra-lightweight structurally active antenna systems and other structures that involve the use of "smart materials". He is the author of more than 140 technical publications in journals, edited volumes, and conference proceedings. Professor Washington received an NSF Career Award in 1996, the OSU Harrison Award for Excellence in Engineering Education and Research in 2005, two best paper awards (one with his students), and many other awards. Professor Washington has served on several advisory boards to include the Air Force Scientific Advisory Board and the National Science Foundation Engineering Advisory Board.



THE TEACHING LAB "THINKING OUTSIDE THE BLOCKS"

Are you uncertain about how to set up your classroom to maximize STEM instruction? Perhaps you are a veteran teacher looking for new ideas and tips to integrate STEM-related activities into your indoor and outdoor classroom space.

Come discover the Teaching Lab!

The Teaching Lab is set up like a "typical" classroom with areas that will look familiar to teachers and students alike. Visitors to the Teaching Lab will be able to:

- Relate to the classroom as your own
- Expand on your STEM-related experience with children, using every day materials, with minimal amount of additional items but with the emphasis of intentionality
- Reflect on your own teaching approach to STEM within your environment
- Talk with STEM Ambassadors to reflect, brainstorm, and prioritize your next steps
- Collect sample lesson plans mapped to the Preschool Learning Foundations and DRDP

The Teaching Lab makes contemporary science, math, engineering and technology approachable, accessible and exciting!

Organizers:

The teaching lab is organized and equipped with support of the following:
Cinda Muckenthaler, Muckenthaler & Associates, Inc. - ECE Consultant
Jean Barbre, Orange County Department of Education - Early Childhood Education Coordinator, CA Preschool Instructional Networks – Region 9 Lead
Cristina Blevins, Orange County Department of Education - ECE Project Liaison
Jonathan Lin, Kohburg - Vice President
Dave Scahill, Constructive Playthings & ETA Hand2Mind - Educational Consultant
Sean Scahill, Kodo Kids - Regional Manager
Ed Sudario, Lakeshore - Regional Manager
Anaheim City School District – Office of Early Childhood Education
Nellie Pedraza – ACSD Preschool Teacher/ California Early Childhood Mentor Teacher
Viviana Jelinek – ACSD Child Development Specialist

DISCOVERY SCIENCE CENTER TOUR

Friday, February 7, 2014; 1:00 PM - 4:30 PM

Advanced registration required (60 max) $10

For 25 years, Discovery Science Center (DSC) has been a non-profit organization dedicated to educating young minds, assisting educators teach science and increasing public understanding of science, technology, engineering and math through interactive exhibits and programs. With one of the largest education outreach programs in the county and an unparalleled approach at creating immersive, game-based exhibits, DSC is revolutionizing how educational content is delivered. Throughout the year, guests can take the Eco Challenge and become a green superhero or feel the power of a simulated rocket engine launch. Traveling exhibits and annual events such as Spooky Science and Bubblefest throughout the year ensure that there is always something new to discover. In 2012, DSC was named one of the ten "Most Trusted Brands" in Orange County and in 2013 was awarded the National Medal of Service from the Institute of Museum and Library Services. DSC owns and operates the Taco Bell Discovery Science Center based in Santa Ana, California and will be opening a second facility in Los Angeles in 2014.

WORKSHOPS FRIDAY, FEBRUARY 7

OPENING ADDRESS 8:30 AM - 8:45 AM

Plan for the Future

Speaker: Al Mijares
Orange County Superintendent of Schools
Room: Catalina Ballroom
The opening address will introduce the idea of how we need to solve the shortage of STEM professionals and how to plan ahead for the future.

KEYNOTE 8:45 AM - 10:00 AM

Intentional Teaching

Presenter: Patricia Hunter-McGrath
Executive Director, Branches Atelier
Room: Catalina Ballroom
This Keynote presentation will explore the following key concepts that support intentional teaching: how to teach with intention; how to thoughtfully create classrooms that embrace children and parents; how to develop shared values among staff, families, and children; how to design classrooms to reflect community; how to welcome families into school; how to create inclusive program; how is documentation used to create a culture of interconnections; how are community values made visible by our actions and our language; and how do we create a culture of empathy, respect, and collaboration?

WORKSHOPS 10:30 AM – 12:00 PM

Early Childhood Environmental Education: A Multidisciplinary Start to STEM

Presenter: Gerard Gonzalez
Project Learning Tree
Room: Laguna Beach I
Discover hands-on activities that encourage outdoor exploration and nature experiences that encourage developmental skills necessary for early success in STEM. Project Learning Tree (PLT) curriculum materials provided.

Small Group Explorations: A Vehicle for Science Learning

Presenter: Kaitie O'Brien
Evergreen Community School
Room: Laguna Beach II
Using three essential questions posed in Christine Chaille's book *"The Young Child As Scientist"*, we follow the path of three different small group explorations - pendulum motion, sandbox concoctions, and gardening.

Making STEM Visible and Accessible for ALL Children

Presenters: Susan Wood, Ellen Khokha, Sherry Hoffman, & Todd Erlandson
The Children's Center at Caltech
Room: Laguna Beach III
The role of the environment, as the child's "third teacher" in making STEM visible and accessible for all children. Children are able to learn and express themselves through experiences of touching, moving, listening, seeing, and hearing in relationship with other children and materials.

Research from the Heart: Observing Shapes, Building Connections and Constructing Knowledge

Presenters: Amy Dickens & Michelle Lawson
The Growing Place
Room: Newport Beach I
A preschool classroom's year-long investigation of the heart symbol; where it lives and what it means, to the self and others.

Thinking Outside the Blocks: Integrating Research-based Activities with STEM

Presenter: Jean Barbre
Orange County Department of Education
Room: Newport Beach II
Explore how the California Preschool Instructional Network (CPIN) integrates the CA Preschool Learning Foundations in Math to other learning domains. Come and hear about activities that will help preschool children become creative mathematical thinkers. Hands on activities will be explored.

From Building Blocks to Building Theories

Presenter: Evelyn Godinez
The Growing Place
Room: Newport Beach III
Our investigation began by the children manipulating simple unit blocks in the construction space. Through the wonderment of why their block towers kept falling over, the children used their observation skills to form theories and hypotheses to explore various math and physics concepts.

Brain Appropriate Practices for the Early Childhood Brain Learning Math and Science

Presenters: Regina Lamourelle & Chantal Lamourelle
Santiago Canyon College
Room: Catalina Ballroom I
This session will acquaint attendees with basic brain functions enabling them to make clearer connections for appropriate early age math and science learning.

The value of connecting concrete, authentic, and hands-on methods as brain appropriate strategies for teaching math and science content will be explored.

The Building Blocks of Early Mathematics

Presenter: Douglas Clements
University of Denver
Room: Bristol III
What are the building blocks of mathematics? Clements presents research abstracted from 6 recent publications that he co-authored: (1) the report of President Bush's National Math Advisory Panel, (2) NCTM's new Curriculum Focal Points for early childhood, (3) a report on early childhood mathematics from the National Research Council, (4) Sarama and Clements' extensive research reviews, (5) the TEAM (Tools for Early Assessment in Math), and (6) the Common Core. One effective instructional approach featured in all four is basing education on learning trajectories. This approach will be illustrated by a set of NSF- and IES (U.S. Dept. of Education)-funded projects that produced and evaluated research-based mathematics curricula and assessment.

Group Games: Math and So Much More!

Presenter: Betty Zan
University of Northern Iowa
Room: Huntington Beach
Group games are an inexpensive and easy way to engage children in reasoning about mathematics while also promoting children's social, emotional, and moral development.

1:00 PM – 2:30 PM

Books You Can Count On

Presenters: Jennifer Montgomery & Michelle Moen
El Camino College
Room: Laguna Beach III
This workshop is geared toward teaching staff. The focus is on books and curriculum expansion ideas linked to math and language domains outlined in the Head Start Child Development and Early Learning Framework.

STEM in Early Childhood: Key Early Education Resources to Support Preschool Mathematics and Science Learning and Development

Presenters: Osnat Zur & Laura Bridges
WestEd
Room: Newport Beach I
The session provides an overview of key resources published by the California Department of Education to guide mathematics and science education in preschool settings. Resources include the California preschool learning foundations and curriculum frameworks in mathematics and science.

1:00 PM – 4:00 PM

Inventions of the Past Promote Problem Solving in the Future "

Presenter: Lia Doron-Mizrahi
Ilan Ramon Day School/ NAEYC/ CSUN
Room: Laguna Beach I
Explore a play-based curriculum emphasizing the history of technology, (e.g., electricity, switchboards) as young inventors use problem solving, critical-thinking and peers. Involvement of families, culture and state standards are included.

A Sea Change in STEM Science Education

Presenter: Marvin Martin
San Gabriel Academy
Room: Laguna Beach II
An on-going pilot program: Brain research driven, scientific inquiry-based curriculum and content, featuring science progression-based instruction and thematic unit content, amalgamating the three natural sciences and engineering.

Numbers (and Space) in Pre-Primary Schools

Presenter: Maria Bartolini
Università di Modena e Reggio Emilia
Room: Newport Beach II
I shall discuss with participants one (short workshop) or two (long workshop) teaching experiments carried out by pre-primary school teachers in the schools of Reggio Emilia and Modena, who take part in programs for teacher development.

Sprouting STEM: Team-Building to Promote and Sustain STEM-Enriched Programs

Presenter: Carrie Rothstein-Fisch
California State University, Northridge
Room: Newport Beach III
Engage in a dynamic and interactive workshop to build and maintain a team of enthusiastic teachers and administrators in STEM-enriched early childhood programs

Ramps and Pathways: An Inquiry-Based Approach to Physical Sciences

Presenter: Betty Zan
University of Northern Iowa
Room: Huntington Beach

Ramps and Pathways is a science activity involving inclined planes and the movement of objects that is developmentally appropriate, intellectually rigorous, and lots of fun!

Brain-STEM: Powerful Learning for Developing Minds

Presenter: Kenneth Wesson
Educational Consultant: Neuroscience
Room: Bristol III
STEM experiences link memorable concrete experiences together, which represent the "real world" in the developing young mind – through the senses, words, and images, some and others abstract. Complex brain circuits are built on these early foundations.

1:30 PM – 4:30 PM

Facilitated Exploration of Common PreK - 2nd Grade Manipulatives

Presenter: Cynthia Olivas
University of La Verne
Room: Catalina Ballroom I
Through facilitated instruction, table participants will explore common preschool curriculum manipulatives (wooden blocks, unit cubes, linking chains, transportation vehicles, animal figures, teddy bear counters, plastic chain links, linking cubes, etc.) in ways that promote critical thinking, problem solving, and reasoning.

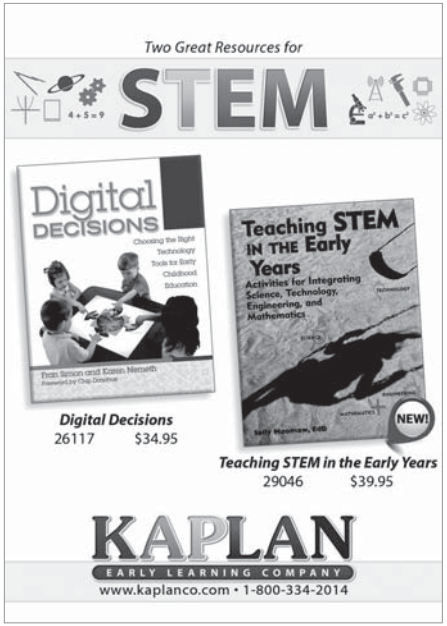
3:00 PM – 4:30 PM

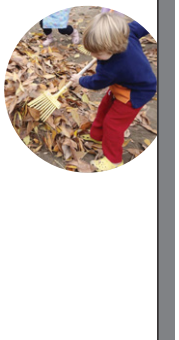
A Pocket Full of Seeds: Growing Confident Problem Solvers, Jump Start to Children's Engineering

Presenter: Carrie Draper
Readiness Learning Associates
Room: Laguna Beach III
Why teach engineering to children? What is the engineering design process? How do you create a signature program and what you need to know before you start or need to improve what you have. CD with resources will be provided to the first 20 participants.

A Constructivist Approach to Investigating Scale and Structure

Presenters: Veronica Dayag & Shain-Yann Hsu
Children's Center at Caltech
Room: Newport Beach I
This workshop will include an in depth look into investigating scale and structure in the Early Childhood setting. Highlights will include balance, building, bridges, and more.





WORKSHOPS SATURDAY, FEBRUARY 8

KEYNOTE 8:30 AM - 10:00 AM

The Philosophical Baby

Presenter: Alison Gopnik
University of California, Berkeley
Room: Catalina Ballroom
In the last thirty years there's been a revolution in our scientific understanding of babies and young children, a revolution that's also transformed our understanding of human nature itself. In this talk, I'll outline some of the new discoveries and their implications for the way we think about young children and ourselves. Human beings have a longer childhood than any other animal – our children are more helpless and dependent than any others. Why make babies so helpless for so long? I'll show that childhood – our long period of helplessness – is responsible for our uniquely human consciousness and our ability to learn, imagine and love. Their long protected childhood gives human babies an opportunity to learn and play, and that lets them plan and work as adults. Our research shows that even the youngest babies have learning abilities that are more powerful than those of the smartest scientists and most advanced computers. Toddlers already analyze statistics and do experiments. In their unstoppable pretend play, preschoolers also use their discoveries to imagine new ways that the world might be. Children not only learn about the world around them, they also learn about other people and themselves. By the time they are three or four they understand love and morality. These remarkable learning abilities reflect special features of babies' and children's brains, features that may actually make them more conscious than adults.

WORKSHOPS 10:30 AM – 12:00 PM

Beyond the Science Center

Presenter: Cristina Blevins
Orange County Dept. of Education
Room: Laguna Beach I
Learn and explore activities you can do in your classroom that go beyond the science center, taking science into all interest areas

Introduction to Documentation

Presenter: Jenne Ring
Pasadena City College
Room: Laguna Beach II
Using documentation as a practical and beneficial part of our communication with parents, children and the community. Showing what our students are learning and experiencing.

Sowing the Seeds of Wonder: The ECE Garden

Presenter: Whitney Cohen
Life Lab
Room: Laguna Beach III
Discover the power of gardening with young children! We'll sample indoor and outdoor activities to encourage healthy eating; help children connect to the natural world; and bring science to life!

Supporting Preschoolers to Acquire the 3 ESSENTIAL Math Skills!

Presenters: Susan Walsh & Brittnee Walsh
University of La Verne
Room: Newport Beach I
Stable order counting, 1-1 correspondence and cardinality are essential to understanding numeracy and math operations. Explore creating and teaching these skills through fun and developmentally appropriate inside and outside activities. Emphasis: 3-6 year olds.

The "E" in STEM - Defining Engineering in the Early Childhood Experience

Presenters: Chris Hume & Diane Spahn
Kodo Kids
Room: Newport Beach II
This enriching workshop will support participants develop content, environments and materials for the Engineering strand of STEM. We'll introduce practical ways to implement ideas and work through teacher-child interaction.

Connecting Gardening + Technology in the Classroom

Presenters: Cynthia Wylie & Lourdes Padgett
Bloomers! Edutainment, LLC
Room: Newport Beach III
Motivate children to play and garden outside through the use of developmentally appropriate technology. Hands-on example of the Bloomers! Schoolyard program demonstrated.

Making Sense of Numbers: The Mathematical Brain

Presenter: Oana Tudusciuc
Caltech
Room: Huntington Beach
A review of relevant research in humans (adults and babies), non-human primates (monkeys) and other animals, providing insight into our brain's ability to grasp numerical concepts.

The Central Role of Art in the Early Childhood Curriculum
Presenter: Cathy W. Topal
Smith College
Room: Bristol III
This presentation will take you into the early childhood and kindergarten classroom, highlighting selected units of a new visual arts curriculum and showing the many connections to science, math, engineering, and technology. The goal is to show how visual arts experiences can contribute to children's overall growth—not just as artists, and not just as individuals, but as part of a larger community of researchers, thinkers, and learners.

1:00 PM – 2:30 PM

Blocks and Beyond: Strengthening Early Math and Science through Spatial Development
Presenter: Mary Jo Pollman
Metropolitan State College of Denver
Room: Laguna Beach II
This presentation will provide participants with current research on spatial literacy as well as new approaches to the teaching of spatial and geometric development in the early childhood classroom.

How to Promote Science in the Early Years
Presenter: Elmida Baghdaserians
Los Angeles Valley College
Room: Newport Beach III
This presentation will provide the audience with specific strategies on how to promote science in an early childhood environment. It will also provide data on the connection of creativity, play and science. Strategies for promoting science in the ECE classroom will be discussed. The presenter will provide literature on the importance/connection of creativity, play and science. Presenter will share best practices guide by the NAEYC, and review DAP in terms of developmental milestones, and developmental domains.

Engineering a Kingdom
Presenters: Adriana Olivera & Cindy Nelson
The New School-West Preschool
Room: Huntington Beach
This year-long block investigation, moved beyond construction. Teachers listened to children, supporting their castle ideas by exposing them to circuitry, math and simple machines. We learned that community

BIG Science School Yard
Presenter: Vivian Belmont
Dream Big Science
Room: Bristol III
Outdoor Science on a grand scale. An interactive PowerPoint presentation highlighting inquiry based approach of children investigating.

1:00 PM – 4:00 PM

Project Learning Tree Early Childhood Curriculum
Presenter: Gerard Gonzales
Project Learning Tree
Room: Laguna Beach I
This hands-on workshop will present Project Learning Tree's award-winning Environmental Experiences for Early Childhood which integrates trees and nature throughout the curriculum.
Participants will receive the curriculum guide and accompanying CD.

Thinking and Creating with a Line
Presenter: Cathy Topal
Smith College
Room: Laguna Beach III
Explore what can happen when you allow the process of line printing to help you construct a world of shapes, patterns, designs, letters, plants, machines, buildings and other complex structures.

How Do Things Work? What Are Things Made Of? AIMS Hands-On Science Grows Curiosity Through Interaction!
Presenter: Care Butler
AIMS Education Foundation
Room: Newport Beach I
Matter and energy topics will be explored through Activities Integrating Math and Science (AIMS) curriculum investigations. Real world interactions that grow conceptual understandings from seeds of curiosity will be emphasized.

Tinker. Make. Innovate. Labs
Presenters: Jean Kaneko & Paola Cervantes
The Exploratory/Maker Guilds
Room: Newport Beach II
The Tinker. Make. Innovate. process is the result of 3 years of facilitating STE[A]M learning opportunities for preschoolers in Los Angeles. It provides children the opportunities to develop relationships with STEM subjects as languages of self-expression.

3:00 PM – 4:30 PM

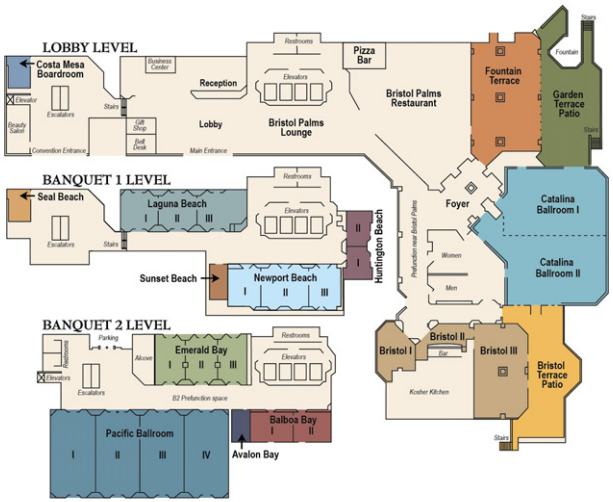
STEM – Inquiring Minds Want to Know
Presenter: Steven Erwin
Kaplan Early Learning Company
Room: Laguna Beach II
Using an inquiry based planning model participants will have an opportunity to explore how to recognize, support and plan responses that will address children and families learning of STEM.

Starting an Authentic Science & Math-Based Curriculum in Your Program
Presenter: Anne Broussard
County of Orange
Room: Newport Beach III
Beyond a science table with sea shells and a magnifying glass: panel discussion on how to infuse science and math into every aspect of the day; how to motivate staff and parents; how to develop the curriculum step-by-step; how to empower staff to take it to the next level.

Cause and Effect: Force
Presenters: Diana Gomez & Amanda Sandoval
Children's Center at Caltech
Room: Huntington Beach
Toddler age children will explore cause and effect - force. I will show you how the children explore ramps, spatial awareness, movement, water, and wind.

Correlation between Math and Music in Early Childhood Music Education
Presenter: Dayita Datta
Children's Center at Caltech
Room: Bristol III
Ear training for young children using musical pattern recognition, which is an integral part of math skill. Pattern recognition through song-tales, echo songs, dance, tap, clap, and playing percussion instruments.

FLOOR PLAN



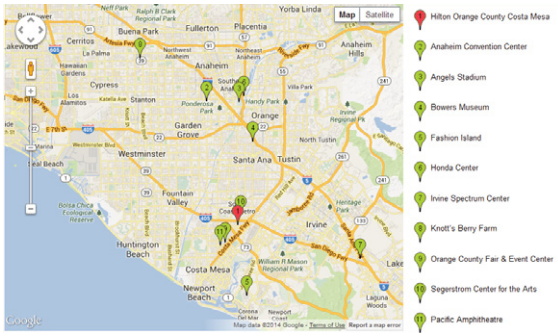


EXHIBIT HALL

Friday and Saturday, February 7-8, 2014

9:00 AM – 5:00 PM

Come explore the exhibit hall where you will find a variety of valuable resources and opportunities to network. New to our hall is the Teaching Lab! The Exhibit Hall will be located in the Fountain Terrace. We thank the following vendors for participating and filling our exhibit with quality resources!

kohburg® Quality & Green for Kids You Love

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CONSTRUCTIVE PLAYTHINGS®

ETA hand2mind® hands-on learning for growing minds

Lakeshore® products designed with learning in mind™

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2015 EARLY CHILDHOOD STEM CONFERENCE REGISTRATION AND TRAVEL ARRANGEMENTS

WHEN: February 5-7, 2015

WHERE: Hilton Orange County
3050 Bristol Street, Costa Mesa, Ca 92626
714-540.7000

Registration Information

Online To register online with PayPal or a credit card visit http://childrenscenteratcaltech.org/conference/ecstem-registration/

Email your registration form (available at http://childrenscenteratcaltech.org/conference/ecstem-registration/ as a PDF) with purchase order information to ECSTEM@caltech.edu

Fax your registration form (available at http://childrenscenteratcaltech.org/conference/ecstem-registration/ as a PDF) with purchase order information to 626-793-7308

Mail your registration form (available at http://childrenscenteratcaltech.org/conference/ecstem-registration/ as a PDF) and payment to:

THE CHILDREN'S CENTER AT CALTECH
ECSTEM CONFERENCE
1200 E CALIFORNIA BLVD, MAIL CODE 1-12
PASADENA, CA 91125

Housing Information

Deadline: January 16, 2015

The ECSTEM Committee has negotiated with the Hilton Costa Mesa Hotel to provide our guests with discounted room rates.

Call the Hilton at 1-714-540-7000 and have your credit card and arrival/departure information ready.

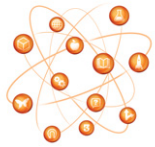
EARLY CHILDHOOD STEM CONFERENCE
Science Technology Engineering Math

SAVE THE DATE

FEBRUARY 5-7, 2015

EARLY CHILDHOOD STEM CONFERENCE SCIENCE TECHNOLOGY ENGINEERING MATH

HILTON ORANGE COUNTY/COSTA MESA HOTEL, COSTA MESA, CA
ECSTEM will begin accepting workshop proposals on March 1, 2014
Contact: ECSTEM@CALTECH.EDU
Visit: http://childrenscenteratcaltech.org/conference



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Science Technology Engineering Math