California STEM
Learning Network

SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS

Regional Network Meeting

August 22, 2013

Los Angeles

CSLNet Vision

California STEM Learning Network

We Envision a Time When:

All students in California will graduate with the STEM knowledge and skills required for success in education, work, and their daily lives.

CSLNet's Mission is to:

Prepare California students to be the nation's most STEM-capable graduates by coordinating and activating a multi-sector statewide network representing all STEM stakeholders.

CSLNet Long-Term Goals

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- **Build partnerships that connect existing education, business, and community assets to increase efficiency, innovation, scale, and sustainability of quality STEM teaching and learning.**

- **Strengthen quality of and expand access to STEM education across California's PK-16 formal and informal educational institutions.**

- **Increase STEM interest and competencies of all students in California and increase the number of students who pursue STEM-related credentials, degrees, and careers.**

Our Policy & Advocacy Priorities 2012-2013

Policy Priority 1: **Adopt and Implement Next Generation Science Standards and Implement Common Core State Standards**

Policy Priority 2: **Reform Teacher Preparation**

Policy Priority 3: **Revise Accountability Systems**

Policy Priority 4: **Advocate for Strengthened Public-Private Partnerships and Alignment of Resources**

Policy Priority 5: **Ensure All California Students Have Access to High-Quality STEM in Out-Of-School Time**

Norms for Regional Network Meetings

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We agree to…

- Honor the time frame

- Turn cell phones to off or silent

- Refrain from texting/emailing until breaks

- Listen actively

- Bring our best thinking to the work

- Keep sidebar conversations to a minimum

- Develop relationships with our colleagues

California STEM Learning Network

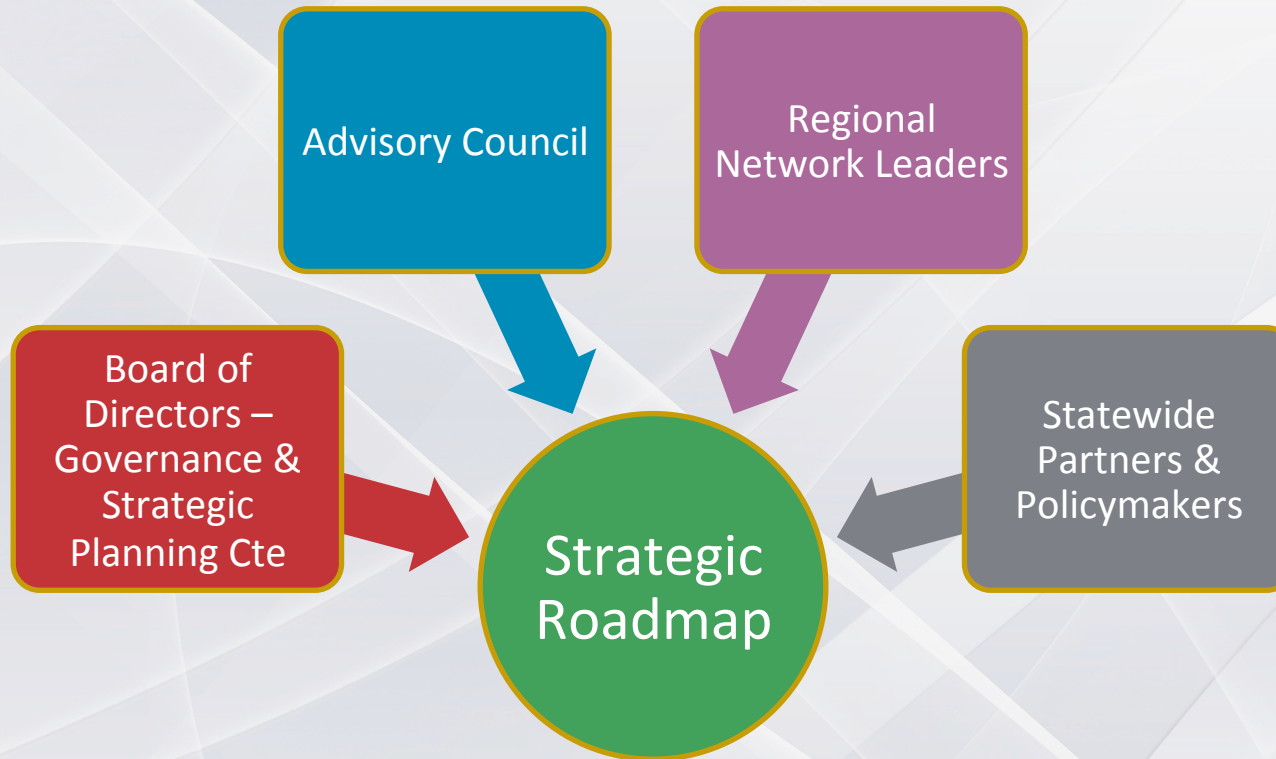SCIENCE | TECHNOLOGY | ENGINEERING | MATHEMATICS

From Grassroots to Treetops: Transforming STEM Education in California

A Strategy Roadmap for the California STEM Learning Network

FINAL DRAFT

August 2013

Final Draft Shaped with Input from CSLNet Leaders & Partners

California STEM Learning Network

What's New in the Final Draft

- Revises and expands Focus Areas to include Innovative STEM Networks

- Identifies major Operational Strategies

- Identifies Metrics

- Includes new/expanded Action Plans

New Strategy Roadmap Confirms Vision, Mission & Goals with Some Adjustments

California STEM Learning Network

|	
Vision	All students in California will graduate with the STEM knowledge and skills required for success in education, work, and their daily lives
Mission	Prepare California students to be the nation's most STEM-capable graduates by coordinating and activating a multi-sector statewide network representing all STEM stakeholders
Long-Term Goals	• Build partnerships that connect existing education, business and community assets to increase efficiency, innovation, scale and sustainability of quality STEM teaching and learning • Strengthen quality of and expand access to STEM education across California's PK-16 formal and informal educational institutions • Increase STEM interest and competencies of all students in California and increase the number of students who pursue STEM-related credentials, degrees and careers

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CSLNet Organizational Strategy

Shape the statewide agenda
to advance STEM education and
mobilize action on that agenda
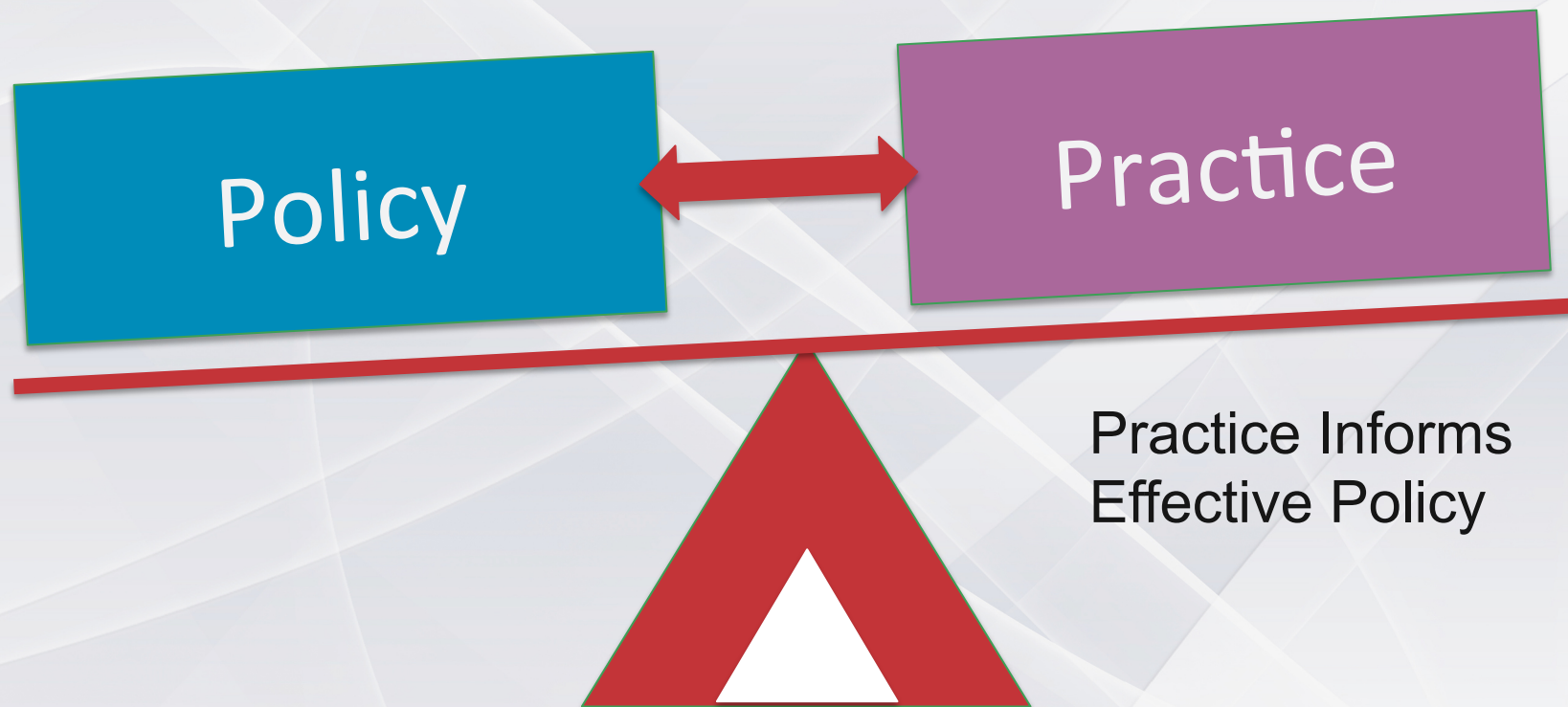
CSLNet's Agenda to Advance STEM Education

California STEM Learning Network

Three Focus Areas Guide Our Long-Term Agenda

- **Innovative STEM Networks**

- **Great STEM Educators**

- **Quality STEM Learning Experiences**

Objectives in Each Focus Area Leverage CSLNet's Competitive Advantages

Focus Area I. Innovative STEM Networks

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Objectives: Innovative STEM Networks

- Build shared statewide leadership around a common agenda for STEM

- Develop a dynamic infrastructure of regional networks that fosters strong STEM leadership, rapid diffusion of knowledge and replicates promising practices

- Identify funding streams to provide sustainable operating resources for state and regional STEM networks

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Objectives: **Great STEM Educators**

- Promote the implementation of reforms to teacher preparation that strengthen educators' science and math content knowledge and pedagogical skills

- Build and enhance pathways into teaching that increase the recruitment of candidates from underrepresented groups and underserved communities

- Support professional learning that builds educators' capacity to implement Next Generation Science and Common Core Mathematics standards

Focus Area III. Quality STEM Learning Experiences

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Objectives: Quality STEM Learning Experiences

- Identify and advance a set of comprehensive reforms to strengthen science and engineering education based on the Next Generation Science Standards

- Support integration of Common Core State Standards, Next Generation Science Standards and Career Technical Education Standards in state and local implementation planning

- Facilitate new partnerships that increase student participation in hands-on STEM learning through expanded learning programs, informal institutions and career technical education

- Develop tools and resources to guide the field in the creation of quality STEM schools and programs

Operational Strategies to Shape the Agenda and Mobilize Action

California STEM Learning Network

STEM Leadership
- Create a common vision and strong collective voice for systemic change

Regional Network Development
- Build knowledge, organizational capacity and peer learning to shift policy and practice at the regional and local levels

Policy & Advocacy
- Develop and advocate for key reforms in public policies, regulations and resource allocations

Programmatic Initiatives
- Identify and scale promising practices to address critical gaps in program quality and access

Action Plans, 2013-15 (Samples from Appendix I)

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Action Plans identify specific projects that implement the core operational strategies to move the agenda in our target focus areas

Objectives	Projects
1.1. Build shared statewide leadership	• Host annual CA STEM Summit • Publish annual CA STEM Report Card
1.2 Develop Regional Network capacity	• Launch online platform for knowledge-sharing & peer learning • Research & develop Regional Network Handbook
2.1 Promote reforms to teacher preparation	• Regional networks host convenings to map gaps and design local reform plans • Educate policy bodies on reforms that support STEM
3.1 Strengthen science education based on NGSS	• Mobilize network to advocate for adoption of NGSS • Coordinate with CDE and other key stakeholders to shape state NGSS implementation plan
3.4 Develop tools to guide creation of quality STEM programs	• Create district STEM implementation guide

Sample Metrics (See Appendix J)

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CSLNet Long-Term Goals	Indicators of Long-Term Systems Changes	CSLNet Operational Performance Metrics
Build partnerships that connect existing education, business and community assets to increase efficiency, innovation, scale and sustainability of quality STEM teaching and learning	• Number of new cross-sector partnerships formed and schools/ programs/students engaged • Amount of existing funding redirected and/or new funding raised to support quality STEM education	• Establishment of baseline measures of regional network participation • Network mobilized to advocate for selected proposals
Strengthen quality of and expand access to STEM education across California's PK-16 formal and informal educational institutions	• Number of, and enrollment in, STEM-focused schools and programs • Number of underrepresented minority and/or female STEM educators	• District STEM Implementation Guide developed • Increased student engagement in Power of Discovery: STEM^2 programs
Increase STEM interest and competencies of all CA students and increase the number who pursue STEM-related credentials, degrees and careers	• Student proficiency in K-12 STEM subject assessments • Number of students obtaining post-secondary STEM credentials	• NGSS curriculum frameworks and instructional resources guidelines under development

Stakeholder Feedback

(see handout)

- Universal support and enthusiasm for new roadmap

- Handout of comments received

Networking Infrastructure

Capture & Share Knowledge
Online site map and timeline
Baseline tools

Value Proposition

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CSLNet Tool Development

CGI
Business/Education Partnerships
STEM District Implementation Guide

CLINTON
GLOBAL
INITIATIVE

STEM Teacher Pathways

- **Joan Bissell**

- **Director, Teacher Education and Public School Programs**

- **Alignment of CSLNet efforts with CSU MSTI (Math Science Teacher Initiative) and TRP (Teacher Recruitment Project).**

STEM Teacher Pathways

CSU Mathematics and Science Teacher Initiative (MSTI) and Teacher Recruitment Project (TRP)

- **Goals and Activities**

- **Support**

- **Campus Contacts**

http://www.calstate.edu/teachered/msti/

STEM Teacher Pathways

Partnership between CSU and The Power of Discovery STEM²

- **Objectives**
- **Benefits**
- **Additional Partnerships**

www.powerofdiscovery.org

STEM Teacher Pathways

STEM²
THE POWER OF DISCOVERY

CSU undergraduates interested in teaching serve as STEM Fellows at PoD: STEM² sites. The CSU undergraduates can:

- **Perform course practicum assignments**

- **Fulfill credential field experience requirements**

- **Participate in service learning**

- **Serve as paid assistants through Math and Science Teacher Initiative (MSTI) and Teacher Recruitment Project (TRP)**

STEM Teacher Pathways: NGSS and CCSS-M

CSU Undergraduate NGSS Reform Project

- **Vision and Strategy**

- **Model Projects**

- **P-12 Partnerships**

CCSS-M: Grant from Collaboration for Effective Educator Development Accountability and Reform Center (CEEDAR) for CCSS-M—Special Needs Students

STEM Teacher Pathways

CSU's NGSS Undergraduate Science Reform Project

- **Significantly strengthen elementary science teacher preparation**

- **Equip future K-6 teachers as leaders in NGSS implementation**

- **Integrate mathematics, technology, and engineering applications**

- **Address crosscutting concepts in science content and pedagogy**

- **Increase teacher confidence and excitement about science**

    http://teachingcommons.cdl.edu/CSUNGSScommunity/

STEM Teacher Pathways

NGSS Undergraduate Models Preparing K-6 Teachers

- **CSU Bakersfield: Integrated upper division NGSS capstone**

- **CSU Chico: Innovative labs addressing crosscutting concepts**

- **CSU Fresno: Multidisciplinary undergraduate STEM concentration**

- **CSU Fullerton: Lab-based courses integrating engineering and science**

- **CSU Sacramento: Thorough weaving of CCSS-M into science courses**

- **San Diego State: NGSS Update of *Physics and Everyday Thinking***

- **Cal Poly SLO: Advancing Scientific and Engineering practices**

   http://teachingcommons.cdl.edu/CSUNGSScommunity/

STEM Can Lead the Way and California State University

- **California Alliance for Clinical Preparation:**

  - **www.calstate.edu/teacherED/ca-alliance/**

- **California Alliance Model Residencies Webinar:**

  - **www.schoolsmovingup.net/cs/smu/view/e/5312**

- **California Alliance Innovative Induction Webinar:**

  - **www.schoolsmovingup.net/cs/smu/view/e/5302**

- **CSU Early Childhood/Transitional Kindergarten Project:**

  - **www.teachingcommons.cdl.edu/tk/**

- **CSU STEM Teacher and Research Program:**

  - **www.starteacherresearcher.org/**

NGSS and Policy Updates

- **NGSS Policy Brief**

- **Letter to State Board of Education**

Project Updates

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- Power of Discovery: STEM^2
- i3- Early Mathematics
- Engineering- NGSS

Save the Date!

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The California STEM Summit 2014 | Engineering Action for Change

February 3-4, 2014
Hyatt Regency in Santa Clara

Networking Across Regions

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Next Face to Face Regional Network meeting:

November 12, 13 2013

Location: Riverside