

UNC STEM Teacher Preparation Symposium

**Closing the Opportunity Gap through
Excellence and Equity in STEM Education**

December 10, 2013



A Program of the Gill Foundation



Session Objectives

- Provide information on the state STEM plan
- Provide information on 100Kin10
- Provide information on CDE STEM work
- Provide an update on LEAD Compact

Session Presenters

Yee-Ann Cho, Vice-President, Initiatives, Colorado Legacy Foundation

Amber Ptak, 100Kin10 Funding Partner, Director of Education Programs, Gill Foundation's Gay & Lesbian Fund for Colorado

Violeta Garcia, STEM Coordinator, Colorado Department of Education

Leslie Colwell, Keystone Center, The Licensing Educators for Academic Development (LEAD) Compact



Preparing for Next Generation Learning

- Preparing students for a 21st Century Economy and Community
 - Academic, professional, and entrepreneurial competencies
 - Relevant, real world, engaging, rigorous, hands-on education and experiences
- Effective STEM education is a vehicle for developing Next Generation Learning

What do we mean by STEM Education?

- STEM = **science**, **technology**, **engineering**, and **math**.
- Effective STEM education is a deeper, and often integrated, focus on **CONTENT** and **CONCEPTS**.
- Effective STEM education **CONTENT DELIVERY** is focused on developing critical thinking and 21st century skills.

CLF STEM Project

- **Y1:** Develop a common vision, mission and goals for STEM education in Colorado
 - Colorado STEM Education Roadmap
 - Colorado STEM Education Roadmap Action Plan
- **Y2:** Identify criteria and metrics of effectiveness for STEM education
- **Y3:** Scale effective programs and policies

STEM Value, Mission, and Purpose

Core Value

Every individual has unique potential to contribute to a vibrant, innovative, and globally responsible Colorado.

Mission

Advance STEM education as a way to unlock the unique potential of Colorado's youth, educators, and adult workforce.

Purpose

Increase coordination, alignment, and continuous improvement of STEM education to:

- Expand excellence and equity in STEM education;
- Excite and challenge learners through personalized STEM experiences; and
- Develop transferable, globally competitive skills.

STEM done well is a vehicle for meeting new state requirements...

Educator
evaluation

Content standards

Industry and
Career and
Academic Plans
(ICAP, SB 296)

Graduation
Guidelines

Effective STEM education content and content delivery is a way for educators and students to meet high expectations

STEM Teacher Pipeline

- Educator effectiveness is a critical component of the Colorado STEM Education Roadmap
- CLF seeks to support and learn from teacher preparation efforts to prepare educators for Next Generation Learning through effective STEM education

Timeline

May-September 2013: Stakeholder Engagement and Feedback sessions

September 2013: ELC STEM Committee reviewed/endorsed STEM Roadmap

February 2014: Full ELC to review/endorse STEM plan

Pre-2011	2011	2012	2013	2014	2015	2016 ->
NGA STEM Grant WIRED Grant	Colorado STEM Network Colorado Blueprint	CDE Race-to-the-Top Award – STEM ELC STEM Advanced Industries Legislation	CLF STEM Initiative CCCS Equity in STEM Grant and Data Group CDE STEM Think Tank	Colorado STEM Education and Action Plan	Defining Effectiveness and Metrics of Effectiveness in STEM in Colorado	Identify, Connect, and Scale Effective STEM efforts

Why Focus on STEM Education?

The Need...

- STEM jobs are growing
- Achievement gaps persist
- Coloradans need the STEM skills to succeed in a global economy

What Are We Doing About It?

- **Colorado STEM Roadmap and Action Plan**

- Defines common vision, mission, goals, and actions; coordinates numerous STEM efforts, policies, and programs across the state; aligns stakeholders behind a common vision; and evaluates individual and collective impact of STEM efforts

- **Communications Strategy**

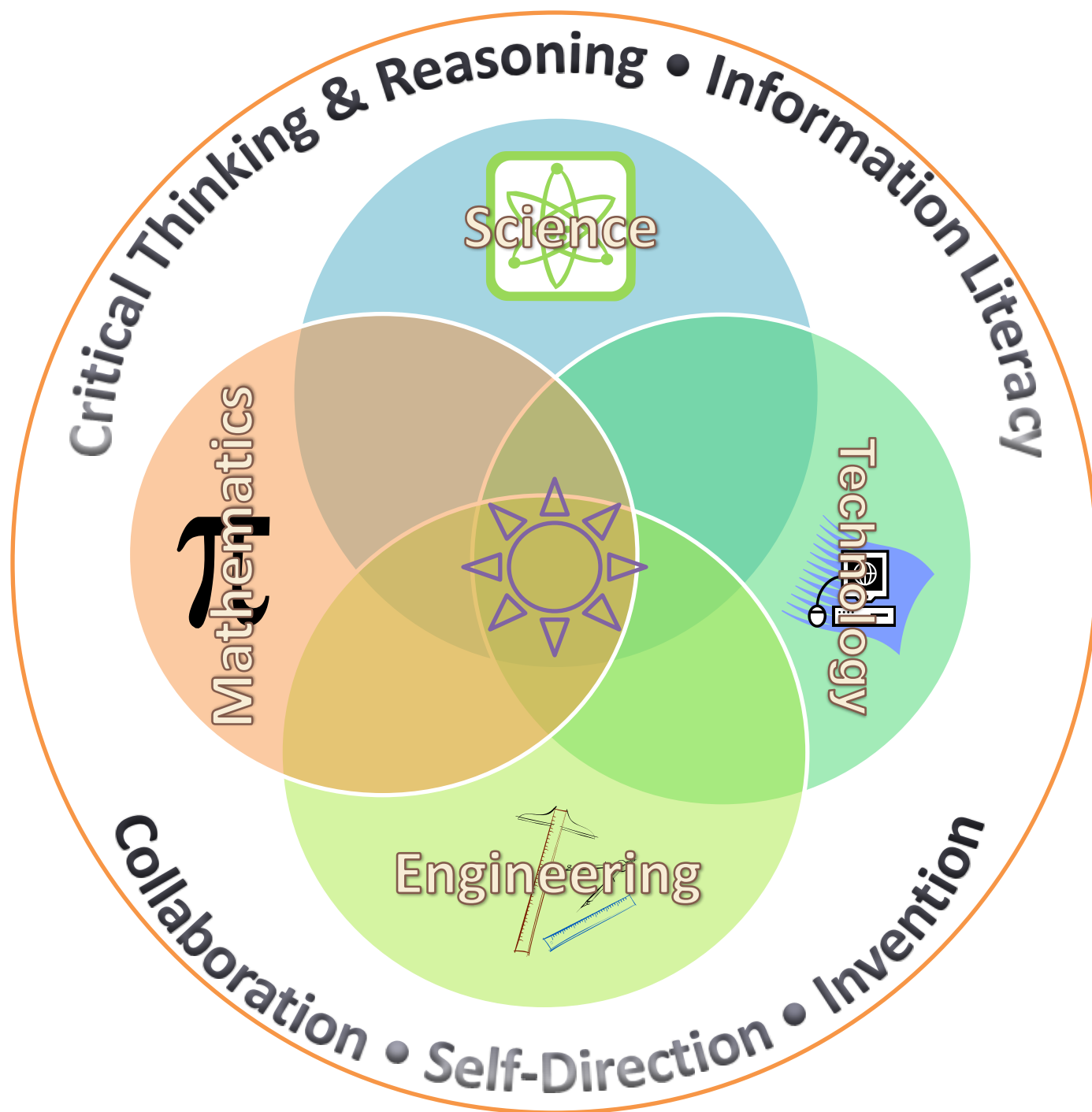
- Build awareness by reframing the challenge: advancing STEM education is a talent and equity agenda for Colorado
- Make a difference: inspire and activate youth, educators, and parents/caregivers
- Regional engagement: support and celebrate regional work

- **Investment Strategy**

- 100Kin10 – in partnership with the Governor's Office
- Develop partnerships with corporate, foundation, government, public partners to support high-quality programs across the state

100K in 10

- Providing America's classrooms with 100,000 excellent science, technology, engineering, and math (STEM) teachers by 202: <http://www.100kin10.org/>
- Gill Foundation's Gay and Lesbian Fund as Colorado Funding Partner



PK-12 STEM Think Tank Work Groups

CO STEM Road Map

Research Group

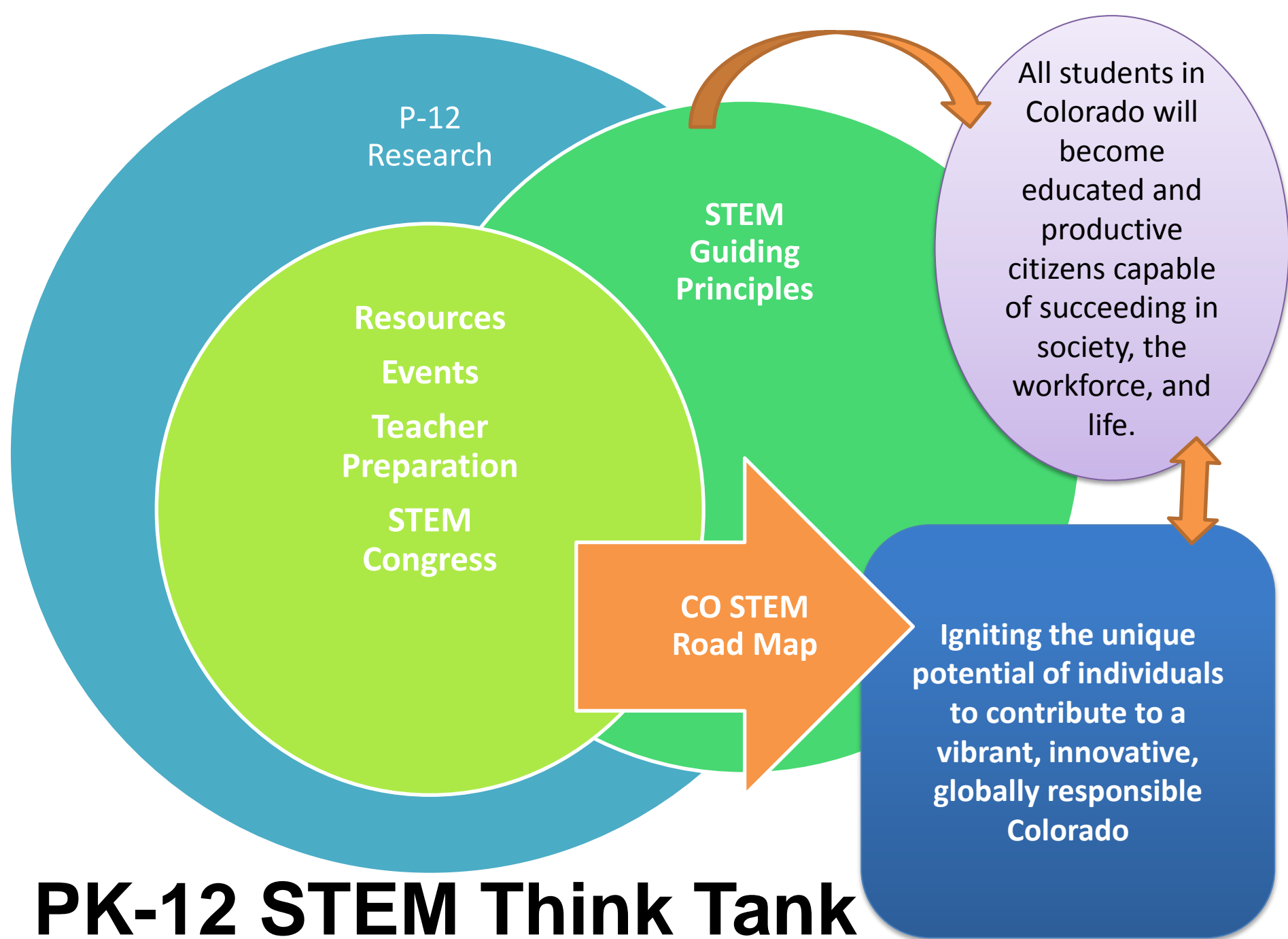
STEM Driving Principles

STEM Resources

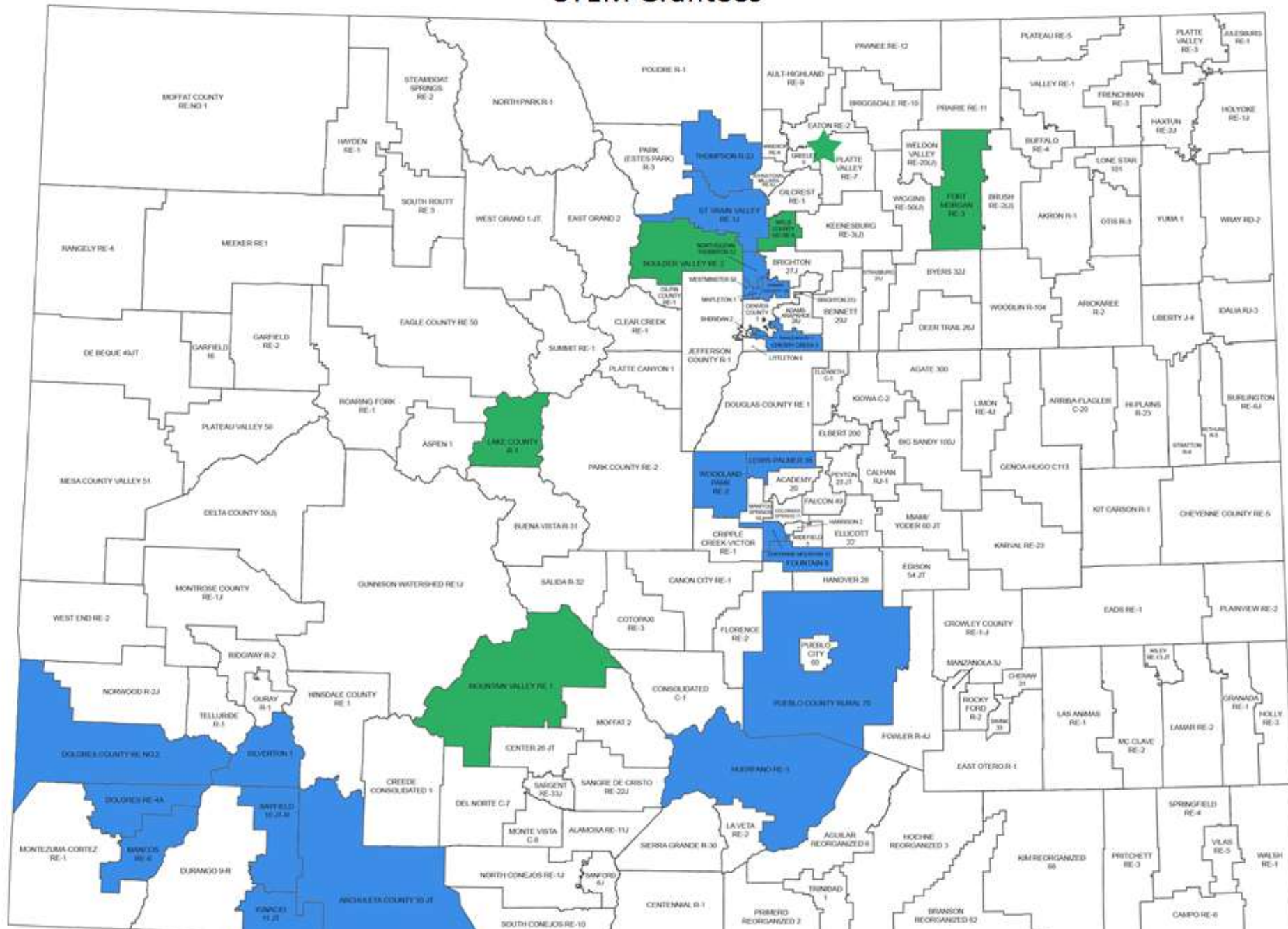
STEM Teacher Preparation & Development

STEM Regional Group

STEM Outreach/ Planning Group



STEM Grantees



LEAD Compact Update

The Licensing Educators for Academic Development (LEAD) Compact was formed to help inform legislation which seeks to be responsive to the changing workforce and educational landscape.

Website: <https://www.keystone.org/>

Vision: Every Colorado student is served by effective teachers and principals

How can we increase the quality and quantity of teachers and principals wanting to enter the profession?

What should the pathways for entry to the profession be, and what should candidates be able to demonstrate to show readiness?

How do teachers and principals advance through the profession in a way that recognizes their unique talents and provides professional development in areas that need improvement?

With the goal of retaining our most highly effective teachers and principals, how do we recognize and reward them and provide growth opportunities?

Pre-Service: Attracting to the Profession

- Institutions of higher education/district partnerships
- Diverse candidates

1-2 Years: Entry into the Profession

- Standards alignment
- Minimum training/ experience necessary to be effective with all student populations
- Entry assessments
- Metrics that determine prep program success/approval
- High-quality induction and mentoring

3+ Years: Advancing through the Profession

- Inputs → Outcomes-based
- Criteria for advancement/ renewal (cycle length, years of effectiveness, professional development)
- Individualized, meaningful high-quality professional development

5+ Years: Recognition of the Best in the Profession

- Structure that makes the most sense for the state, for districts, and for educators
- Competencies/ application criteria
- Roles and relation to professional development
- Compensation
- Oversight/ accountability/ authority/ responsibility

Questions?