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Transitions Working Group

CSEWI and ARCHES (Alliance of Regional Collaborations for Heightened Educational Success) thank all working group participants for their time, insight and input at our December 9 STEM CAP Forum. I believe we are off to a very good beginning, I request that you do two things:

(1) Please review your working group assignment in the attached roster and email Teresa Henderson with any working group changes:

teresa.henderson@csewi.org.

(2) Please find below rough "first notes" from each of the three working group sessions. You will see that working group inputs have been arranged to align with the four categories of a STEM-related continuum outlined at the Forum: Inspire, Engage, Educate, Employ. These are rough notes and more complete working group session recaps will be forwarded by the end of January.

Before then, the facilitators ask that you review these first notes and provide any comments by January 15, to ensure incorporation into the complete recap. We especially welcome your comments on the draft goal statements and the criteria for STEM CAP program models/best practices. To accelerate the feedback, we ask that you forward comments directly to the facilitators:

Recruitment/Retention: Victoria Conner (v.conner@strategicvitalityllc.com)

STEM Curriculum: Diane Siri (iris1996@aol.com)

STEM Transitions: Dennis Galligani (galligani@arches-cal.org)

Transitions Working Group Notes

Draft Goal Statement:

Every student in the corridor/State will be motivated, academically prepared and realize potential in STEM academic areas and will have the opportunity to participate in the STEM professional workforce upon completion of elementary, middle, high school, certificate, AA, transfer, BS and graduate degree.

INSPIRE

Inspire students with confidence through success

- Successes in STEM help other areas like English and art by giving students confidence

As early as preschool

- GEMS, FOSS (Full Option Science System) may serve as potential resources.

Through culturally valid role models and mentors

- Hollywood can serve as source of inspiration
- Female and African American astronauts
- Famous entrepreneurs

Through parent involvement

Career path choices

New culture of science and technology

- Address culture that sets limitations for career development
- Student expectations derived from experiences of parents

Through alternative media

- Blogs, YouTube, radio, etc.

Urban reality

Community economic vitality

New stereotypes and expectations

Innovations

Partnerships for seamless transitions

Informal Education

- Science centers; there exists an association of science centers
- Girl Scouts, Boy Scouts

ENGAGE

Each student

California STEM industries

Connect nodes on the lattice

Provide opportunity at all transition points

- Help students to understand impact of decisions made during grades 1-8 on future opportunities
- Can use STEM Inventory as resource to map opportunities

Motivate students with real opportunities

- Raise student awareness of how important it is to engage early in academics in order to create future opportunities
- Raise student awareness of lifestyle choices and the impact on future career opportunities such as security clearances
- Career preparation can be started as early as middle school, but most students are not concerned with college until much later

Create opportunities to motivate students

- Engage professional societies
 - NACME, AIAA, ASME, SHPE, IEEE
 - Students can become involved with professional leadership very early on (middle school) by giving papers at student conferences, etc.

Mentoring plays a critical role in engaging students

- Use technology to connect with and between students (email, text messages, etc.)
- University students can leveraged for outreach

- Engage parents and enable them to serve as role models
- Parental involvement is often lost when abstract math is encountered

Partnerships created by students should be enduring

Though model proven programs during and outside of school day

- After school programming can be used to address lack of time in classroom for STEM.

Informal organizations, NPO's, CBO's Professional organizations

- Girl Scouts, Boy Scouts, Science centers

All technologies

EDUCATE

Create new measures of student/educator success

Resources needed for real equipment used in STEM jobs

Experienced educators with practical experience as well as teaching strategies in STEM

Redefine professional development for teachers

- Include pre-school
- GEMS, FOSS (Full Option Science System)

Redefine grade levels and early activities

Provide alternative pathways, time, and modes

- Can make use of NADE data/reports?

Real skills, subject matter for jobs of future

- Teachers are not able to fit STEM into schedule due to existing policies
- Project based learning plays critical role
- 21st century workforce vocational courses, career technical education

Redefine vocational education and academic relevance

- Technology and engineering are not addressed by current opportunities
 - Need to create a Technology and Engineering pathway
 - This may be an area to address with a policy change

Review standards for relevance

- California Schools are behind other states
- There is no existing test/standard for Technology and Engineering at the elementary level.
- The current standards are not necessarily designed to create opportunities for the students who excel at them
- Existing standards for CA science are like a laundry list and difficult to accomplish
- High School math curriculum is not focused on applications and turns kids off
 - Industry outreach may apply here

EMPLOY

All transitions have direct link to work force opportunity

Allow opportunity to step out to work and then return to further education

Multiple entry and exit points
Collaborate with industry

ADDITIONAL NOTES

-Will do conference call follow up

WHO IS MISSING?

- Government representatives