SCOPE OF WORK AND SERVICES

The STEM4Real Professional Learning Series

Universal Design for Learning (UDL), Common Core Math (CCSS) Next Generation Science Standards (NGSS) and STEM Implementation for AIMS College Prep High School (AIMS HS)

A. Background

Our Promise: We believe that the principles of STEM Education can be used in any subject area to promote design thinking, collaboration, and academic discourse. Our promise is to make education socially just #4Real through instructional planning, professional learning, action planning and leadership development. We will do this by recognizing and dismantling inequitable systems and rebuilding your education system #4Real with all students first.
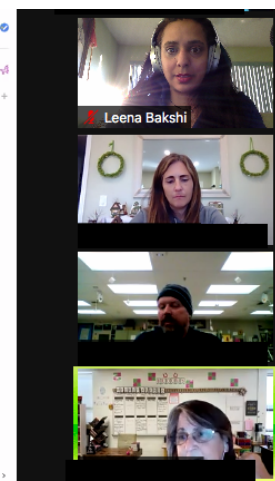
WHY WE ARE DIFFERENT:

- Content + Social Justice: We combine principles of equity and social justice so that educators are learning about standards-based (NGSS/CCSS/Emergent Bilingual) instruction and differentiating for all student groups (students with special needs, African-American students, etc.) accordingly.
- Engagement: We engage with educators during the presentation - there is always an active component where we are thinking, doing, reflecting, and collaborating. We never just talk at our audience all day. We teach and model what we are asking our teachers to do in their classrooms, whether it is live or virtually.
- Implementation and Action: We provide tools and resources that can be immediately used in the classroom. There is no need to purchase a set of curriculum or expensive materials. We focus on teacher pedagogy and shifting teacher practice to create student-centered learning modules grounded in student curiosity.
- Joy: Happy Teachers = Happy Students! We have fun!

B. Description of Services

STEM4Real Tailor-Made: Every organization is different which is why we create a tailor-made professional learning experience designed for your team and context.

Administrator Partnership: We take the time to get to know your school, district, agency, and context. No teacher wants "another thing to do" on top of their busy schedules. We work with your organization to ensure that we are all vision-aligned.

- What initiatives do you already have?
- How do we continue and build on previous work?
- Current implementation of UDL (Universal Design for Learning)
- How can STEM4Real fit into your current vision?
- What does the data say
- Equity Audit - where are we missing our students?

STEM4Real Grounding with Teachers and Coaches: In this session, we connect all of the systems: Your state content standards (The Next Generation Science Standards, Common Core Standards), your case study students, and the context of your school or district.

- Understand 3D Learning and the WHY behind instruction using phenomena and curiosity to drive student learning.
- Consider Your Context - Research the context of your school community
- Case Study Student Analysis - choose at-promise students to differentiate your instruction and learning sequences.
- Family and Community Engagement Plan

Race, Social Justice and Implicit Bias Training: We dig deeper into our own implicit biases to ensure that these do not manifest in our teaching and learning. This critical step helps us evolve as educators to be anti-racist and to stand up for social justice.

STEM4Real Instructional Planning - Based on data and observations from the lesson modeling session and learnings from the STEM4Real Grounding and Intensive Learning sessions, we will construct our 3D5E lesson plans and use principles of Universal Design for Learning (UDL) and the Teaching for Robust Understanding (TRU) Frameworks to reflect on the learning sequence.

- Prepare learning sequences for observation and implementation. Collaborate with staff on feedback.
- Use UDL and TRU Frameworks as a reflection tool for lesson planning.
- Look at current curriculum using the NGSS TIME Toolkits to review, assess and implement materials

Peer-to-Peer Observations - Our team will facilitate video and live observations using the DO-KNOW-THINK Observation tool to observe student learning and shift teacher practice to meet the demands of inquiry-based instruction. We will then reflect on strengths, areas of growth, opportunities and threats to a socially just STEM education.

Analysis of Student Work - We will then analyze student learning outcomes, discuss next steps and implications for teacher practice. We will take a closer look into our case study students to see how they have grown over time with differentiation, family connection, and formative feedback.

Lesson Planning Workshop Summit - All participants walk away with fully completed lessons and ideas. We design and finalize Lessons and Units with all of the learnings and reflections from the year. We also discuss implications for next year.

STEM4Real Network Fellowship is a year-long network to collaborate nationally and internationally with fellow like-minded educators committed to STEM standards + justice. Our community has access to the following:

- **Collaboration and Lesson Study** within the STEM4Real Network of educators - engage in "The STEM4Real Way", an online professional learning series focused on the Next Generation Science Standards, Culturally Responsive Phenomena, Case Study Students, Teacher Observation, and Analysis of Student Work.
- **Teacher-Curated Lesson Bank** and instructional resources: Using the Lesson Study #4Real process, teachers create 3-dimensional (practices, core ideas, and cross cutting concepts) and 5E (engage, explore, explain, elaborate, evaluate) instructional sequences grounded in culturally responsive pedagogy.
- **Monthly Live Professional Learning Via the Un-Speaker Series** (Offered Virtually) - Live workshops focused on current issues in STEM education including assessment, instructional practices, English Language Learner instruction, Social-Emotional Learning, Trauma-Informed Practices.
- **Make a Change Monday Mindset Calls** - Equity work takes work. It is an ongoing practice that we as educators must continually fine tune in order to address STEM + Social Justice educational issues. In these sessions, we Collaborate, Problem-solve and Action-plan (CPA) on specific hot seat issues that we can learn from together.

- **Weekly Follow-Up Coaching Sessions** - sometimes we just need allocated time in the week to focus on getting work done and having a community to support you as you check off those tasks.
- **Yearly Events with Guest Speakers** - We kick off each year with our goals and end each year with our culminating event, sharing best practices and of course, our 3D5E instructional sequences that combine STEM + Social Justice + Joy
- Optional Units with Cal State University, East Bay

C. Deliverables

- 3D5E Teacher Curated Lesson Plans
- Peer-Peer Teacher Observations
- Case-Study Student Analyses
- Family-Engagement Plans
- Analyses of Student Work
- Research-Based Summary Report of Findings and Next Steps

D. Payment Terms & Invoicing

Service	Quantity	Cost Per Service	Total Cost
AIPHS Administrative Onboarding	1-2 Sessions	Included	Included
STEM4Real Tailor-Made Intensive and Follow-Up Workshops	2 (Fall and Spring)	$4500 per session Paid in installments Fall and Spring	$9,000
STEM4Real Network - Year Long Professional Learning Network for select Math and Science Teachers	6 Teachers (Math & Sci) 4 Teachers (ELD/SPED)	$1295 per teacher (paid at the onset of services (July 2021)	$12.950
			21,950

E. Period of Performance
21-22 School Year

F. Expected Outcomes
- Cohesive implementation of the CCSS Mathematics and Next Generation Science Standards (NGSS) objectives
- Participation of collaborative Lesson Study cycles of lesson creation, observation and analysis of student work
- Weekly office hours and follow up coaching for lesson development and equity-focused problem solving and action planning
- Case Study student analysis and family engagement plans.
- 3D5E Culturally Responsive Lesson Plan with access to a lesson bank of STEM-CRT-aligned lessons with a focus on social justice.

G. Data Sharing (yes/no) If yes, please explain
NO

H. Project Contact information
Leena Bakshi, Executive Director, Leena@stem4real.org

As educators, we have been doing the same thing for decades. Let's stand up and do something different. It's time to put equitable and anti-racist teaching strategies into practice. Let's stand up for social justice for our students!

Testimonials

What are participants saying? [STEM4Real Tailor Made Testimonial](#)

- *It is always important to remember the justice side of education as you interact with kids. It's one of the things that I really have been trying to keep in the forefront of my student interactions.*

- *I loved the techniques for structuring NGSS (3D, 5E, CER). NGSS was feeling really open-ended but it now feels like I have a better understanding of how to plan both short and long term.*

- *Some things I am working on is to listen more carefully to students (and teachers) to hopefully become more empathetic and to slow down my reaction/response time, just a fraction, as a check on my own biases.*

- *One key take-away for me was that our perceptions and biases have a huge impact in how we teach, even if we are unaware of them.*

- *A key takeaway was the importance of providing opportunities for all students to think about and talk about their observations and thoughts, in ways that take into account multiple intelligences and different learning styles.*

- *Having students generate questions about a phenomenon is such a good way of including every student, every experience, and every culture in science. Any student can be a scientist and can make references to other material they are learning in school or to past experiences due to the many cross-cutting concepts implemented through NGSS.*

- *I applied the questions to Social Sciences and the answers reflect situations as they may arise in that discipline. I plan to introduce phenomena as the basis for many of my lessons and open the class to debate and discussion.*

- *I really shifted to phenomenon based instruction and I've been doing this in my instruction. I've also gained some understanding of how to navigate the NGSS.*

- *There are many tools and strategies that I am excited to implement within my classroom. They include the sticky note brainstorm strategy, doing a nature/campus walk to observe and write down phenomena, seeing the NGSS as 3 dimensions of what the student can think, know, and do, and also the 5E lesson planning template tool.*

- *Meeting and learning about different students was interesting. Focusing on engaging students of all cultures in every lesson is going to be my goal for science.*

Key Performance Indicators

- **Teacher Observation Data**
  Discuss teacher virtual recordings with the team to discuss teaching goals and performance indicators. Analyze strengths and areas for growth. Monitor progress for both teachers and students.

- **Student, Teacher and Administrator Surveys**
  Our research team will collect pre-and post- surveys to understand the implementation of teacher practices and the shifts in teacher pedagogy over time. We will use the SIPS (Science Instructional Practices Survey), a researched based survey to assess classroom implementation and teacher efficacy.

- **Exit Interviews**
  Our research team will conduct and code exit interviews with select participants to assess validity and reliability of professional learning for educators. We will provide the districts with a full report and recommendations for a STEM action plan, budget planning, and next steps.

- **Artifact Evaluation**
  We will analyze lesson plans, analysis of student work, case studies, and teacher observation notes to discuss the process and assess next steps.

AIMS College Prep High School (AIMS HS)

Authorized Signatory Name: _____

Signature: _____   Date: _____

Leena Bakshi, Executive Director, STEM4Real   Date: May 5, 2021