MSS: Earth Systems Course Description

This Making Sense of SCIENCE (MSS) Earth Systems course prepares STEM educators to navigate shifts in teaching practices through phenomena-based professional learning that combines in-depth adult-level explorations with a focus on classroom practices, productive scientific discourse, literacy supports, and pedagogical reasoning. In the words of a participant last summer, "It was exceptionally helpful to support cross-curricular needs, as well as supporting effective science instruction."

This course is optimal for teachers in grades 5–9, as it takes a systems approach to understanding dynamic interactions on Earth. As teachers grapple with their own conceptual understanding of the hydrosphere and geosphere, they are explicitly supported in developing, using and analyzing models that serve to deepen their understanding of the ways in which matter and energy flow through these systems. The teaching component of the course utilizes written teaching cases of practice and protocols to collaboratively examine student work in order to explore common misconceptions. Teachers also analyze instructional choices associated models that explain various phenomena involving water and rocks. The literacy component of the course focuses on supporting productive scientific conversations and productive classroom cultures as well as related literacy standards. Many aspects of the course model classroom environments that build key learning and innovation skills (e.g., critical thinking and problem solving, communication, collaboration).

COURSE OBJECTIVES:

Educators will participate in a 3-day Teacher Course held during summer 2018 (in Boise, ID). Educators will submit a written reflection describing key learnings from the professional learning including what they have taken away from experience that informs their teaching practices.

LEARNER OUTCOMES:

Educators who participate in this course will:

- Engage in collaborative, adult-level science learning that models the multidimensional, discourse-rich practices found in productive STEM classrooms.
- Develop deep content knowledge and strong pedagogical skills needed to effectively foster inspirational and impactful teaching.
- Reflect on and improve their practice with tools that scaffold respectful and collaborative professional learning communities.
- Collaboratively investigate the art of teaching, including strategies for promoting evidence-based conversations.
- Acquire the materials and experiences needed to take on vexing science content, explore the practice of teaching science, and consider how to support students' literacy needs in a STEM classroom.

COURSE ASSIGNMENT:

1) Attend the three-day MSS Earth Systems Course
2) Complete all surveys and assessments administered through the course.
3) Write a two-page reflection about their learning experience and professional growth.