

# Building Coherence in STEM Learning Opportunities for Pre-Service Elementary School Teachers across Disciplinary Boundaries

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The *Building Coherence* project aims to support development of pre-service elementary teachers' knowledge, skills, and dispositions for enacting ambitious and equitable STEM instruction, by fostering greater coherence among STEM content and pedagogical teacher preparation opportunities. This exploration and design study convenes a core working group of University of Utah faculty from both the College of Education and the College of Science, who will collaboratively redesign and implement all of the university's STEM-focused courses offered to pre-service elementary teachers. The primary goal of this course redesign is to foster greater cross-course alignment and coherence, especially regarding the structure of class discussions and emphases on visual representations and mathematical and scientific argumentation. The project's design-based research includes testing, refining, and improving specific conjectures about the preservice teachers' acquisition of STEM content knowledge, pedagogical content knowledge, instructional practices, and dispositions in the context of the redesigned courses. SEEC's external evaluation provides formative and summative feedback on pre-service teachers' perceptions of efforts toward building cross-course coherence, and on the experiences faculty members have during the process of implementing the new courses.

### Clients and Collaborators:

University of Utah

### Funder:

National Science Foundation - IUSE (DUE1712493)

### Our Role:

External Evaluator

### Project Staff:

[Eric Hochberg](#)