MATHEMATICS EDUCATION SEMINAR

TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

Texas State University
1:00 pm in DERR 227
November 16, 2018

Stats, Streams, and Students - The synergistic development of middle school students' ecological field investigations and informal statistical reasoning

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Recently, ecology has gained increased precedence in STEM education as it addresses critical and complex socioscientific issues. However, the more specific domain of field ecology is still often overlooked or oversimplified in the design of learning environments for PK-8 student learning. This talk will explore the complexities involved when students construct and make sense of data in the field. We'll look at a design study in which sixth grade students investigated the ecology of a local creek and examine how students' attention to variation supported their development of a more sophisticated practice of sampling. We will also look at open questions about (a) how current science education standards position PK-8 students to make decisions about data construction, (b) activities that might scaffold students' perception of sources of variation, and (c) potential ways to leverage student-generated ecological data to engage in informal inferential reasoning.

Michelle (Shelly) Forsythe received her Ph.D. in Teaching, Learning, and Diversity with a Specialization in Math and Science Education from Vanderbilt University and is an assistant professor of STEM Education in the Department of Curriculum and Instruction at Texas State University. Her primary research interest is in the design of learning environments that productively structure K-16 students' ecological fieldwork. Her current research examines how middle school students interact with material space to construct and make sense of ecological data in field settings. Dr. Forsythe is also a member of a multi-site team that is developing a research-based framework for video analysis and professional noticing in science teacher education.