

You are cordially invited to attend:

November 6, 2019

12:00 pm - 1:30 pm

115 Erickson Hall

Michigan State University

Light refreshments provided

CREATE Science Seminar Series presents:
Joseph Dauer
Associate Professor of Life Science Education at
University of Nebraska-Lincoln



“Exploration of Cognitive and Neural Processes Used by Undergraduate Biology Students during Modeling Tasks”

Abstract: Modeling is a common practice for scientists and considered a core competency for all STEM disciplines from primary through postsecondary school. While widely recognized as an essential skill, researchers continue to debate how student outputs (constructed models, discussions about models, interpretation of models) reflect students’ disciplinary knowledge and modeling abilities. While my talk will not solve this debate, it will inform your understanding of the relationships between student modeling actions and output, inferred cognitive processes, and (a little) empirical neural data. I aim to describe the collaborative work to determine how students store and retrieve knowledge about biological systems and system dynamics. I will present research from various studies built around core lessons where students use a computational modeling software to discover biological system dynamics. Lastly, I will present ongoing research on the cognitive neuroscience of modeling where we determine active brain regions during modeling tasks.

Bio: He has a BS in Biology/Mathematics from Western Washington Univ., MS and PhD in Ecology from Penn State, where he worked on weed seed dynamics (how seeds move into and through the atmosphere). He completed 2 postdocs at Oregon State and Michigan State (from the days of CRCSTL). He is currently Associate Professor of Life Science Education at University of Nebraska-Lincoln. He conducts research at intersection of biology, mathematics, and cognitive psychology. He teaches introductory biology and ecology. He isn’t a huge football fan, so he won’t try to justify the bad football team.

This speaker is part of the **CREATE Seminar Series**.

For more information, please visit

<http://create4stem.msu.edu/seminar-series>



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