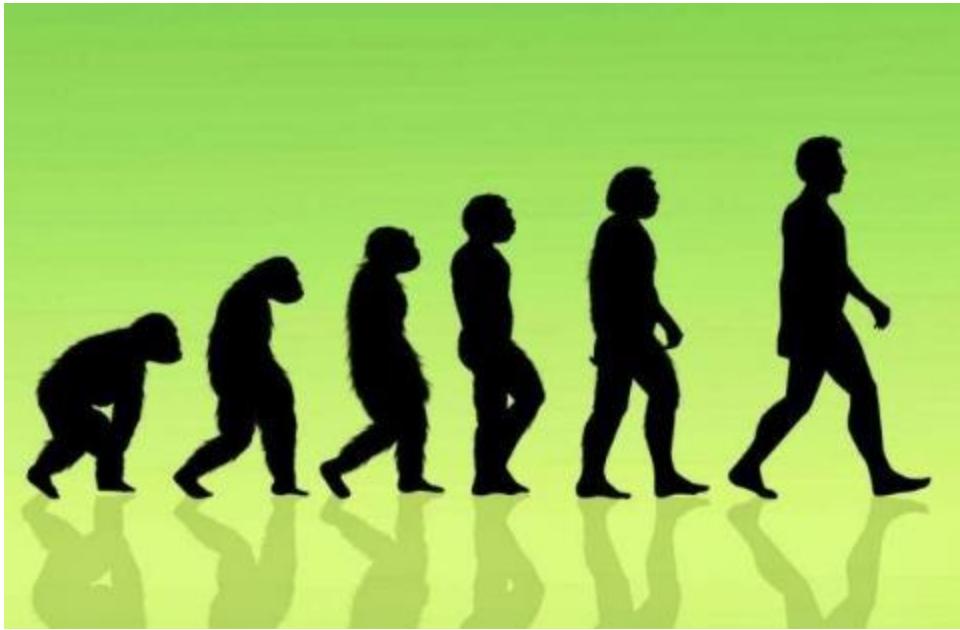

INTERDISCIPLINARY STEM SEMINAR SERIES

(Science Technology Engineering Mathematics)



Roadblocks to Student Learning About Evolution Cognitive and Cultural Challenges

Thursday March 21st, Reuter Center, Room 102
4:30 PM to 6:00 PM

Speaker: Dr. Jason Wingert

**Associate Professor of Health & Wellness, UNC Asheville
Faculty in the Neuroscience Program, UNC Asheville**

Evolution is the fundamental unifying and organizational theory of biology. Despite the central importance of evolution, student understanding of this topic is tenuous and challenged by several cognitive biases. Teleological reasoning is one such cognitive bias that has been shown to disrupt student ability to learn about evolution. Teleological reasoning is the cognitive tendency to explain natural phenomena by their putative function, purpose, or goals, rather than by natural forces. Teleology in the natural sciences is unwarranted because more accurate and direct mechanistic explanations are provided by antecedent physical-causal conditions. Understanding the obstacles to learning evolution is necessary for improving learning gains. This STEM lecture will review the literature describing the cultural, attitudinal, and cognitive obstacles to learning about evolution. In particular, it will share data demonstrating that an evolution course which specifically interrogates students' teleological biases can be effective for student learning about evolution. The lecture will discuss the universal development of teleological thinking, why teleological reasoning is a roadblock to learning, why even Darwin was concerned about teleology, and provide specific exercises to help us understand and overcome our own teleological biases.

