THE OHIO STATE UNIVERSITY

The William G. Lowrie Department of Chemical and Biomolecular

Engineering Graduate Program

Cordially invites you to attend a seminar on

Drawn to STEM: The Integration of Visualization Into Education

Through Comics and Animation to Improve Learning

Luke Landherr

COE Distinguished Teaching Professor and Associate Chair for Undergraduate Studies Department of Chemical Engineering Northeastern University

> Thursday, March 9th, 11:30 AM 130 Koffolt Lab **CBEC 151 W Woodruff Ave** Reception at 11:00 AM - CBEC Lobby

Bio

conduct engineering education research into content of STEM instruction promotes novel teaching techniques for undergraduate and conceptual understanding. K-12 STEM education. Their comics to teach Engineering comic.

Abstract

One of the major obstacles to effective learning in STEM is the abstract nature of many core STEM concepts. While traditional approaches include examples of realworld applications, demonstrations, and/or hands-on experimentation, the depth and complexity of these concepts can cause efforts such to be unsuccessful. Further exacerbating the problem, some theoretical concepts do not have obvious visual representations that could make the concepts less abstract and so more comprehensible to students.

The benefits of broadening visual instruction in education are not just restricted to learners with particular inclinations toward visual learning. Studies have shown Dr. Luke Landherr is a COE Distinguished that combining text with images improves students' Faculty, teaching professor and the associate retention of information, and multimedia presentations of chair for undergraduate studies of Chemical concepts allow for better transfer of the gained knowledge Engineering at Northeastern University. They towards solving problems. In short, increasing the visual students'

complex science and engineering concepts have Recently, the use of comics and animation as learning been adopted by colleges and high schools tools has grown dramatically, with a broad set of artists, throughout the U.S., U.K., Belgium, and book series, and videos all dedicated to integrating Denmark, and have received several AIChE and visualization into educational approaches. This seminar ASEE awards for their research. They helped to will focus on the range of techniques being used; the write and create the Crash Course: Engineering potential of comics and animation in improving student video series, and are currently a regular enthusiasm, confidence, and understanding; the impact contributor to the Chemical Engineering of these techniques observed thus far; and the means by Education journal producing the Drawn To which other educators can attempt visualization techniques on their own.