



Northwest Central Ohio Local Section

# Meeting Announcement

Wednesday November 20, 2019 – 7:30 pm

Ohio Northern University, Mathile Center for the Natural Sciences  
RM 248

## Dr. Hannah Sturtevant – Ohio Northern University

Affecting Change in STEM Higher Education: Research Perspectives from Chemical Education

Substantial amounts of research in chemical and STEM education have consistently shown that active problem-solving in a collaborative environment supports more effective learning than the traditional lecture approach. In this researcher's first research study, a flipped classroom format was implemented and evaluated in the chemistry majors' sequence at Purdue University over a period of three years. Three years of results, using ACS standardized exams, showed that students' ACS general chemistry exam scores in the flipped class increased by almost one standard deviation compared to the students' previous scores in the traditional class. Despite the ever-growing body of evidence demonstrating positive learning outcomes related to employing a wide variety of active learning strategies, such as the research study mentioned above, in classes, a recent publication in *Science* (Stains et. al. 2018) showed that implementation of active learning practices was relatively low across universities in the US. As STEM departments emphasize faculty use of evidence-based instructional practices (EBIPs), various faculty barriers hinder that process. While a large body of literature exists in this area, no survey instrument has been developed to comprehensively and systematically capture all these factors. A survey instrument, the Faculty Instructional Barriers and Identity Survey (FIBIS), was developed and piloted to delineate university STEM faculty perceptions of barriers to using EBIPs and examine the composition and sources of faculty professional identity, use, and dissatisfaction with these practices. Initial pilot study results with a small, targeted sample (n=69) from one institution demonstrate how FIBIS may be used to identify and provide information regarding how to possibly reduce STEM faculty barriers to implementing EBIPs. Future work includes further validating the FIBIS barriers component of the survey so that FIBIS can be used to identify barriers and support change in institutions of higher education.

**Dinner Meeting: 6:30 pm, Viva Maria (124 E. Buckeye Ave. Ada, OH)**

**Cost:** Attendees at the Dinner Meeting will be responsible for their menu selections, we will be pre-ordering our dinner selections, you may view the menu here → [Viva Marias](#)

**RVSP by Noon on Tuesday, November 19<sup>th</sup> with your menu selection** to Kelly Hall at [nwcohoacs@gmail.com](mailto:nwcohoacs@gmail.com) or by phone at (419) 979- 8527.