



College of Liberal Arts and Sciences
Winter 2023 Chemistry Seminar Series
Friday, February 17th

Dr. Jack Barbera
Professor of Chemistry
Portland State University

Measurement, Modeling, and Mountain Biking: How I Spent My Sabbatical Year

Research in the Barbera Chemistry Education Research (CER) group revolves around how educators and researchers measure and model student outcomes in chemistry. Their interest in the measurement of these outcomes is to improve what the chemistry education community knows about how students learn. In the classroom, their research tools and results help to provide robust evidence of the impacts of various educational practices. In the CER community, their studies provide new assessment instruments and statistical models that are informed by best practices in psychometrics and statistical analysis.

In this seminar, Dr. Barbera will present an overview of the newest work being conducted in his CER group. He will discuss the theory and methods being used in three new projects that were started during his sabbatical year. In addition, Dr. Barbera will share some of his non-research-based adventures from this time.

Barbera Brief-Bio:

Dr. Barbera is professor at Portland State University who specializes in chemistry education research. His work seeks to better understand how educators define and measure student success in an academic setting. The Barbera group has developed a number of assessment tools to more effectively, and efficiently, gauge students' chemistry content knowledge as well as various factors important for learning such as attitude, engagement, self-efficacy, and identity. Their assessment instruments and related studies have been published in the *Journal of Chemical Education* as well as *Chemistry Education Research and Practice*.