



BIOLOGY EDUCATION  
RESEARCHER CANDIDATE

## Dr. Robert Erdmann

The role of education data science in  
crafting a more welcoming and  
inclusive academy

### ABSTRACT

Research questions regarding how students of different identities navigate the learning environment represent some of the most pressing issues in STEM education research today. Data analytics can play an essential role in our efforts to forge more inclusive and effective educational environments. In this seminar, I will share my journey from epigenomics research to education data science, and my work to address these driving research questions. I will describe my efforts to develop methods of classroom video analysis that utilize bioinformatics tools to enable fine-grained analyses of dozens of classroom observations in parallel. I will also share current efforts to detail the trajectories of sense of belonging among first year students, in addition to predictive analytics efforts related to student success. Finally, I will share my plans to use large scale data mining and analytics to study academic equity, probing questions relating to the potentially differential impact of instructor grading schemes, as well as the performance of students on high stakes assessments across the curriculum. Ultimately, the goal of this research is to provide the evidence needed for educators to confidently create more welcoming STEM classrooms.

Tuesday, April 11, 2023 - 1:00pm  
404D Biological Sciences Building