

**Title:** Studying Student Disengagement with Educational Data Mining

**Abstract**

Increasingly, students' educational experiences occur in the context of online learning environments, creating opportunities to study student learning and engagement in a fashion that is both longitudinal and very fine-grained. In this talk, I will discuss the use of Educational Data Mining methods on this type of data to make basic discoveries about learners and learning, and to support the creation of interventions that enhance student engagement and learning.

I will illustrate this process through a research project my colleagues and I have conducted. In this project, we leverage a combination of field observation and data mining to develop automated detectors that infer when a student becomes disengaged while using an online learning environment. These detectors can reliably identify multiple forms of disengaged behavior, and successfully generalize to new populations. We use this approach to investigate the factors leading to disengagement in online learning, and embed an automated detector in a pedagogical agent that responds to bring students back on track.

**Bio:** Ryan Shaun Joazeiro de Baker is the Julius and Rosa Sachs Distinguished Lecturer at Columbia University Teachers College for 2012-2013. He earned his Ph.D. in Human-Computer Interaction from Carnegie Mellon University. Baker was previously Assistant Professor of Psychology and the Learning Sciences at Worcester Polytechnic Institute, and he previously served as the first Technical Director of the Pittsburgh Science of Learning Center DataShop, the largest public repository for data on the interaction between learners and educational software. He is currently serving as the founding President of the International Educational Data Mining Society, and as Associate Editor of the Journal of Educational Data Mining. His research combines educational data mining and quantitative field observation methods in order to better understand how students respond to educational software, and how these responses impact their learning. He studies these issues within intelligent tutors, simulations, and educational games. In recent years, he and his colleagues have developed automated detectors that make inferences in real-time about students' engagement, meta-cognition, affect, and robust learning.