Invited Seminar
Dec. 3 (Monday), 9:00 am – 10:00 am, SSOE Seminar Room NI-1027

Educational Data Mining:
A Revolution in Methods for Understanding Learners and Learning

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Abstract: Increasingly, students’ educational experiences occur in the context of educational technology, creating opportunities to log student behavior in a fashion that is both longitudinal and very fine-grained. These data are now available to the broad learning sciences research community through large public data repositories such as the Pittsburgh Science of Learning Center (cf. Koedinger et al, 2008). In this talk, I will discuss how the emerging Educational Data Mining community is combining these data sources with data mining methods in order to scalably use this data to make basic discoveries about learners and learning. I will focus this talk on the increasing use of "discovery with models" methodologies that leverage the creation of sophisticated models of student behavior, another prominent area of educational data mining. In discovery with models, a model of a phenomenon is developed, validated, and then used as a component in another analysis. I will illustrate discovery with models methods by discussing our work to model student disengagement in educational software and use these models to understand why students become disengaged, and what the implications are for learning.

Biography: Ryan Shaun Joazeiro de Baker is the Julius and Rosa Sachs Distinguished Lecturer at Teachers College, Columbia University. He earned his Ph.D. in Human-Computer Interaction from Carnegie Mellon University’s School of Computer Science, and was a post-doctoral fellow in the Learning Sciences at the University of Nottingham. He earned his Bachelor’s Degree (Sc.B.) in Computer Science from Brown University. Dr. Baker has been Assistant Professor of Psychology and the Learning Sciences at Worcester Polytechnic Institute. 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.