Modeling and Analysis of Stochastic Integral Projection Models for Wild Sunflower Populations

What: **Bi-State Math Colloquium**
When: **Friday, November 8, 4PM**
Where: **Loras College, Hennessy 250**
Who: **Eric Eager**

Modeling wild sunflower (Helianthus Annuus) populations has proven to be a very challenging task for theoretical and mathematical ecologists. These sunflowers are disturbance specialists, meaning that they only germinate in freshly disturbed soil. Disturbances often occur at very unpredictable rates, rendering traditional deterministic mathematical models fairly useless. To capture the dynamics of these populations, we need to develop stochastic models. In this talk I will discuss the development and analysis of a stochastic integral projection model for wild sunflower populations. Through the analysis of this model we have discovered an interesting tradeoff between seed survival and seed germination, leading to different population responses to various disturbance regimes.

Dr. Eric Eager is an Assistant Professor of Mathematics at the University of Wisconsin-La Crosse.