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Water resources management research: bridging gaps between monitoring, modeling, and risk-based decision making

Tuesday, March 26, 2013, 4:00 – 5:00 PM
2355 G.G. Brown Building (North Campus)
The University of Michigan

Understanding water quantity and water quality dynamics, and propagating that understanding through models and model-based forecasts into decisions that protect human and environmental health, is a major challenge facing the water resources management and research communities. Dr. Gronewold’s research focuses on addressing this challenge by explicitly quantifying observation and model parameter uncertainty using probabilistic models and Bayesian inference, and through model skill assessments that leverage expressions of uncertainty and variability. His current projects aim to advance the state-of-the-art in Great Lakes seasonal water budget and water level forecasting, and to mitigate detrimental impacts of nearshore fecal contamination by combining (and reconciling uncertainties within) monitoring and modeling results to support risk-based decision making. In this seminar, Dr. Gronewold will highlight specific examples from his research program that underscore 1) the importance of acknowledging uncertainty in large- and small-scale water resource management decisions, 2) opportunities for leveraging federal investments in long-term monitoring and modeling projects through collaborative regional research projects, and 3) contributions by students and post-doctorate fellows in communicating this research through the peer-reviewed literature.