



Daniel E. Dawson



Postdoctoral Research Scholar

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### Modeling infectious disease dynamics

#### Research emphasis:

Dr. Dawson's main research focus has been the development and use of model-based approaches to study population and infectious disease dynamics. This focus is the result of a multidisciplinary research background strongly rooted in ecology. For his PhD, he studied the influence of natural and anthropogenic influences on mosquitoes using experimental and model-based methods. His current research involves modeling different pathways of *E.coli* transmission within feed lot cattle populations using network and individual-based approaches.

#### Applications:

- Model-based tools for disease intervention
- Modeling vector populations and disease occurrence
- Characterization of direct and indirect contact in disease transmission

#### Research Strengths:

- Population/infectious disease modeling
- Agent-based model development
- GIS and spatial analysis
- Statistical analysis and data processing

#### Publications and Abstracts:

Salice CJ, **Dawson DE**, Weir SM. 2016. Challenges and paths forward in predicting risk of vector-borne diseases: from mechanistic to rule-based modeling frameworks. In Kendall, RJ, Presley, SM and Ramkumar, S, Eds, *New Developments in Biological and Chemical Terrorism Countermeasures*. CRC Press, Boca Raton, pp 22–49.

**Dawson DE**, Vanlandeghem MM, Asquith WH, Patino R. 2015. Long-term trends in reservoir water quality and quantity in two major river basins of the southern Great Plains Lake and Reservoir Management. 31:254–279.

Patiño R, **Dawson DE**, VanLandeghem MM. 2014. Retrospective analysis of associations between water quality and toxic blooms of golden alga (*Prymnesium parvum*) in Texas reservoirs: Implications for understanding dispersal mechanisms and impacts of climate change. Harmful Algae. 33:1–11