

# ASA Short Course: Introduction to Statistics for Spatio-Temporal Data

**Instructor:** Professor Christopher Wikle, University of Missouri

**Date:** April 8, 2017

**Time:** 9:30 to 4:00 PM

**Location:** Harvard University, Science Center, 1 Oxford Street

**Room:** 309 Science Center

**Registration:** <http://bcasa2017Wikle.eventbrite.com>.

Registration requested by noon on Wednesday April 5. Limit: 60

**Fee:** \$25 for students, \$60 for Chapter members, \$70 for non-members. The fee includes lunch.

**Public Transportation (Recommended):** Harvard T station on the Red Line

**Parking:** <http://transportation.harvard.edu/parking/visitors/online-daily-permits>.

Availability not guaranteed. Public parking is available in nearby garages.



**Abstract:** The course gives a contemporary presentation of spatio-temporal processes and data analysis, bridging classic ideas with modern hierarchical statistical modeling concepts. From understanding environmental processes and climate trends to developing new technologies for mapping public-health data and the spread of invasive-species, there is a high demand for statistical analyses of data that take spatial, temporal, and spatio-temporal information into account. This course presents a systematic approach to key quantitative techniques for the statistical analysis of such data that features hierarchical statistical modeling, with an emphasis on dynamical spatio-temporal models. The material follows the book by Cressie and Wikle, *Statistics for Spatio-Temporal Data (2011) - John Wiley and Sons, Hoboken, NJ*, but at a slightly lower level. Many examples will be included, along with some basic applications from various R packages.

**Prerequisite:** The course material assumes Masters level knowledge of probability and statistical inference and good understanding of matrix algebra.

**About the Instructor:** Christopher K. Wikle is Curators' Distinguished Professor of Statistics at the University of Missouri, with additional appointments in Soil, Environmental and Atmospheric Sciences and the Truman School of Public Affairs. He received a PhD co-major in Statistics and Atmospheric Science in 1996 from Iowa State University. He was research fellow at the National Center for Atmospheric Research from 1996-1998, after which he joined the MU Department of Statistics. His research interests are in spatio-temporal statistics applied to environmental, ecological, agricultural and federal survey applications, with particular interest in dynamics. Awards include elected Fellow of the American Statistical Association, Distinguished Alumni Award from the College of Liberal Arts and Sciences from Iowa State University, ASA ENVR Section Distinguished Achievement Award, the MU Chancellor's Award for Outstanding Research and Creative Activity in the Physical and Mathematical Sciences and the Outstanding Graduate Faculty Award from the UM Graduate School. His Wiley book on *Statistics for Spatio-Temporal Data*, co-authored with Noel Cressie, was the 2011 PROSE Award winner for excellence in the Mathematics Category by the Association of American Publishers and the 2013 DeGroot Prize winner from the International Society for Bayesian Analysis. He is Associate Editor for several journals and is one of six inaugural members of the Statistics Board of Reviewing Editors for Science.