Course Content

The analysis of spatial data. Graphical tools for exploring spatial data, geostatistics, variogram estimation, kriging, areal models, hierarchical spatial models, and spatio-temporal modelling.

Goals:

- To explore the statistical issues involved with analyzing spatial data in the context of three or four real datasets.

- To become familiar with graphical and statistical tools in R for displaying and analyzing spatial data.
Learning Outcomes

By the end of the course you will be able to...

- Define key concepts in spatial statistics.
- Describe basic spatial models and state their assumptions.
- Choose appropriate statistical methods for analyzing spatial data.
- Explore graphically and analyze spatial data and using R.
- Interpret spatial models fitted to data and diagnose problems with fit.

Course Policies

**Class Time.** This will consist of real-time data analysis, and active participation of all students is expected. I will provide background material as needed.

**Course Website.** The datasets we will use in class will be available on Blackboard, in addition to available published material on the data. When I do provide background material about spatial data analysis, I’ll post notes on Blackboard. There will also be a forum for posting useful R code, plots, etc.

**Homework.** Students are required to submit at least one question regarding course material, data, R code, or anything else relevant to the subject matter of the course or the datasets before each class meeting. These should be submitted by e-mail to me at: gitelman@science.oregonstate.edu (or gitelmaa@onid.orst.edu). Each student will also be required to prepare a “pop plot” or a “pop analysis” and make a brief presentation on it.

**Exams/Projects.** Working in teams of two, all students will make 2 presentations about data analysis findings throughout the term.

**Evaluation of Student Performance** This will be based upon class participation, submission of questions, pop plots or analyses, and presentation of findings throughout the term.

Learning Resources


Both books are on 3 hour reserve at the Valley Library.
University and Department Policies

Students with Disabilities
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Student Conduct
The Statistics Department follows the University rules on civility and honesty. These can be found at:
http://arcweb.sos.state.or.us/pages/rules/oars_500/oar_576/576_015.html