SUMMER COURSES IN SPATIAL ECONOMETRICS

1. **INTRODUCTION TO SPATIAL ECONOMETRICS**
   Prerequisites: Participants should be familiar with the basic concepts of the following: matrix algebra, probability theory, elements of calculus, and linear regression models. Familiarity with a software package (such as MATLAB or R) is a plus.

   Description:
   The objective of this course is to provide an overview of preliminary concepts in applied spatial econometrics. Students will learn how to model and incorporate spatial dependencies into their empirical analyses. The course will cover basic concepts ranging from the different typologies of spatial data, to the definition of connectivity in space (spatial weights matrices), to the definition of spatial effects. The course will present the tools to diagnose spatial patterns in the data and estimate the parameters of the spatial lag and the spatial error model using different techniques.

2. **INTRODUCTION TO BAYESIAN SPATIAL ECONOMETRICS**
   Prerequisites: Participants should be familiar with the fundamental concepts of spatial econometric models and fundamental concepts of probability theory. No previous exposure to Bayesian ideas is assumed.

   Description:
   The objective of this course is to introduce participants to the estimation of spatial econometric models using Bayesian econometric techniques. The mathematical derivation of the basic spatial econometric models will be examined as well as the computational techniques used to estimate the models. Topics covered will include: finding full conditional distributions, Markov Chain Monte Carlo techniques such as the Gibbs sampler and the Metropolis-Hastings algorithm, and Bayesian model comparison. Students will be encouraged to experiment with the computer code as well as the estimation of models using their own data.

   **Instructor:**
   Donald Lacombe

   **Organization:**
   The courses are organized into a format that includes morning (theoretical) lectures and afternoon computing lab sessions. A reading list will be provided for each of the topics covered. Additional course materials will be provided. Recommended readings and lab exercises will be available online at the course web page.
Applications:
Applicants should submit a curriculum vitae and a brief statement of interest to:
Donald.Lacombe@mail.wvu.edu

Fees: (Fees may change)
1 course $1,000
2 courses $1,800

Fees include course tuition, lunches and course material. Submitted fees will be non-refundable. Accommodation and other living expenses are not included. A block of rooms will be reserved at nearby hotels at a discounted rate.