

**BGSU**[®]Department of
**Mathematics and
Statistics****BOWLING GREEN STATE UNIVERSITY****Weekly Calendar – Fall Semester 2024****Week 9 – October 21 – October 25**

Monday, October 21	Putnam Meeting 11:30am – 12:20pm, McLeod Hall 459 Comprehensive Exams 1:00pm – 5:00pm, McLeod Hall 401 (meet in 450) Advisory Committee 1:30pm – 2:30pm, McLeod Hall 400
Tuesday, October 22	Graduate Student Seminar 11:30am – 12:30pm, McLeod Hall 459 Speaker: Kadir Yucel Title: Sheaves and Cohomology
Wednesday, October 23	Peer Mentor Meetings 3:30pm – 4:20pm, McLeod Hall 459, 400 & 340 Undergraduate Committee 4:30pm – 5:20pm, McLeod Hall 400
Thursday, October 24	Peer Mentor Meeting 4:00pm – 4:50pm, McLeod Hall 400
Friday, October 25	Analysis Reading Seminar 11:30am – 12:30pm, McLeod Hall 459 Speaker: Abraham Orinda Title: Ergodic Theory and Linear Dynamics, Part 1 Colloquium 3:45pm – 5:00pm, via Zoom: Speaker: Jyotishka Datta, Department of Statistics, Virginia Tech Zoom: https://bgsu-edu.zoom.us/j/81335111178?pwd=cgaMlx7Plm1cau2lvG7Wn216XcwszO.1 Meeting ID: 813 3511 1178, Passcode: 467613 Title: Global-Local Shrinkage Priors: An Overview and New Directions
Saturday, October 26	Preview Day 8:30am – 12:00pm, BTSU 308

ABSTRACT

Colloquium

Title: Global-Local Shrinkage Priors: An Overview and New Directions

Abstract: Building scalable Bayesian methods for handling high-dimensional data with complex structure remains an important methodological challenge with diverse applications. While there is a vast literature proposing elaborate shrinkage and sparsity priors for high-dimensional continuous data and real-valued parameters, there has been limited consideration of compositional or count data and admixtures. In the first part of my talk, I will provide a broad overview of the state-of-the-art in global-local shrinkage priors, covering theoretical optimality as well as computational aspects. In the second part, I will discuss a few recent developments, namely designing a shrinkage prior to handle bi-level sparsity and handling sparse compositional data, routinely observed in microbiomics. I will address the methodological challenges associated with each of these problems and propose to fill this gap by using new prior distributions specially designed to enable handling structured data. I will provide theoretical support for the proposed methods and demonstrate improved performance in simulation settings and applications to environmentrics and microbiome data.