



CSTAT
Center for Statistical
Training & Consulting

2020 SUMMER WORKSHOPS

A Crash Course in Research Data Management

Scout Calvert, MSU Libraries
June 18th
1:00 pm - 2:30 pm

Have you ever lost a project file? Been unable to find the most recent version of a document? Suffered hard drive failure or had your laptop stolen? Been unable to open old files? Been told your data management plan wasn't detailed enough? Forgotten which file was which? Even small research projects can generate enough data and digital material to become confusing and vulnerable to loss. Start your next project (or class) with a plan to keep your project organized and your data safe, from inception until you are ready to share, reuse, or revisit the project whether next month or years from now. This workshop provides strategies and insights for managing your data for effective collaboration, to meet funder requirements, or to preserve it for reuse or sharing in the future.

Introduction to Agent-Based Modeling

Dr. Wenjuan Ma, CSTAT
June 22nd
1:00 pm - 4:00 pm

Agent-based modeling is a computational tool that is often used to study complex systems or phenomena. An agent-based model studies a system or a phenomenon through observing the interactions among a group of autonomous agents. The interactions produce macro-level patterns, which often cannot be described as simply aggregating characteristics of individual agents. We call these patterns as emergent properties. Studying the emergent properties are particularly useful for deciphering mechanisms, and testing concepts.

The workshop will introduce concepts and methodologies of agent-based modeling. We will use NetLogo for the workshop. Previous experience or knowledge regarding NetLogo are not assumed.

Mixed Model Analysis of Research Data

Dr. Robert Tempelman, Animal Science
June 25th
1:00 pm - 4:00 pm

Many, if not most, studies focusing upon treatment or group factors of direct interest also involve design structure factors whose levels or elements (e.g. animals, days, locations, schools) are random. When classical ANOVA methods (based on ordinary least squares) are used to analyze such studies, the additional uncertainty due to random effects is often ignored. Mixed model analysis will be presented in this workshop as a way to appropriately account for random effects in order to obtain correct standard errors and efficient tests of hypotheses. In particular, the utility of mixed model analysis to discern true experimental replication from pseudo-replication will be demonstrated. Several applications based on the use of SAS PROC MIXED will be presented.

Introduction to the Bootstrap

Dr. Dhruv Sharma
July 9th
1:00 pm - 4:00 pm

In this workshop we introduce the bootstrap, a data driven statistical approach to assessing statistical accuracy. We discuss the merits of the bootstrap and discuss its implementation for central tendency and spread, as well as simple hypothesis tests and confidence intervals. Examples are provided and implemented in R software code.

No knowledge of R is required.

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All Summer 2020 Workshops are being held Online. For complete abstracts or to register visit www.cstat.msu.edu.