Rigor
Reproducibility
Reporting

Enhancing Scientific Rigor, Reproducibility, and Reporting

CCTS R^3 Series 2023 – 2024
2:00 PM – 3:00 PM

Date	Title	Speaker & Recording Link	Summary
Sept 28	Just Tell Me Three Mice Are Enough – Research Reproducibility in Translational Science	Roger Vaughan, MS, DrPH Director of Biostatistics Recording Passcode: 7@8?g4it	This presentation outlines the essential elements researchers must contemplate when consulting with a biostatistician.
Nov 16	Essentials of Data Management	Claire Warner, PhD Data Services Specialist Recording Passcode: %3VmMwLM	This talk covers the basics of scientific data management throughout the research life cycle. It includes best practices and tips for planning experiments, data organization, metadata creation, data sharing, and more.
Dec 14	Introduction to Reproducible research: Version Control with Git (Gitlab)	Hong Hur, MS Scientific Programmer Recording Passcode: 2!6ZW=wM	This Git intro provides a basic overview of essential Git concepts and commands through demonstrations, covering basic concepts like how to initialize a Git repository, create a remote repository, update the repository, and create branches for collaboration. It's designed to help first-time users track changes, manage code versions, and collaborate effectively in research projects involving computer codes to promote reproducibility.

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2024			
Jan 18	Data Management Plans for Clinical Submissions Data Sharing/Repositories for Clinical Data	Claire Warner, PhD Data Services Specialist Recording Passcode: ^X?1k!5K	This talk covers the NIH Data Management and Sharing Policy, with specific attention to issues related to clinical research. Strategies for creating Data Management and Sharing Plans are discussed, as well as an overview of relevant data repositories.
Feb 15	Exploring the role of AI in medical research: a causal perspective	Michele Santacatterina, PhD Assistant Professor NYU Grossman School of Medicine Recording Passcode: wa1T$xn=	The talk examined causal pathways and their examples and showed how AI can help establish them. It also focused on how AI can help in healthcare by being fed various patient characteristics and developing a personalized treatment plan for each person.
Mar 14	Ethics and R3 Best Practices for Microscopy	Michelle S. Itano, PhD Director, UNC Neuroscience Microscopy Core Facility Assistant Professor, Cell Biology & Physiology UNC Neuroscience Center & Carolina Institute for Developmental Disabilities Recording Passcode: K6gR1#z7	This presentation addresses ethics, rigor, reproducibility, reporting, and best practices in microscope imaging. The discourse and illustrations concentrate on image manipulation and strategies to prevent and identify scientific misconduct in this context.
Apr 18	Elements of Statistical Power Analysis	Caroline Jiang, MS Senior Biostatistician Recording Passcode: =N4dfe5#	The number of subjects (or mice) needed to detect a clinically meaningful effect is a frequent and important question when designing an experiment. In this short course, we will begin with a quick review

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			of sample size and power followed by hands-on exercises in G*Power.
May 15	Artificial Intelligence Tools in Scholarly Writing and Academic Publishing	Mohammad Hosseini, PhD Assistant Professor Feinberg School of Medicine Recording Passcode: $p31h*Ov	The presentation focuses on artificial intelligence techniques, namely generative AI, in the context of scholarly writing, academic publishing, and research overall. The agenda includes an introduction to terminology, a discussion on generative AI in research, live demonstrations, an examination of the issues associated with generative AI in research and writing, and guidelines for disclosure. Subsequently, employing generative AI in peer evaluations.
Jun 20	Overview on RNA-seq Analysis: Design, Quality Control and Report	Manoj Kandpal, PhD Director of Research Bioinformatics Zoom Link	This R^3 talk provided an overview of RNA sequencing, covering its history, standard practices, and recent developments. It focused on key considerations for experimental design, sequencing platforms, and relevant parameters. Additionally, the talk provided an itemized walkthrough of the workflow, highlighting components such as data types, processing steps, tools and software, metadata management, storage, code sharing, and reproducible reporting.