

Advanced Data Skills, Open Science and
Reproducibility 2024/25

Contents

Welcome

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Welcome to the Advanced Data Skills, Open Science and Reproducibility M.Res. unit PCHN63101. This unit will be taught via a flipped classroom model. Make sure you go through the content on this site in advance of the live workshop session. These are held on Mondays from 1 to 3pm in the Engineering A building (also known as the Nancy Rothwell building) in room xxxx.

For questions about the course you can contact me via email (george.farmer@manchester.ac.uk). If you have any questions or technical problems relating to each week's content, please post these on the Blackboard discussion board.

There are two assignments associated with this unit. The full details of these (plus hand in dates) can be found on the Blackboard page for this unit.

Chapter 1

Open Science

In this workshop I will first introduce you to the key concepts in open research, and talk about the so-called “replication crisis” in the Psychological, Biomedical, and Life Sciences that has resulted in the Open Research movement. I will also discuss the importance of adopting reproducible research practices in your own research, and provide an introduction to various tools and processes you can incorporate into your own research workflows that will allow you to conduct reproducible research.

Like the other workshops in this series, this one involves a mix of recorded videos, narrative, and links to various resources for you to explore and to read.

1.1 Open Research and Reproducibility

First I'd like you to watch the following video on the history of the replication crisis and the issues which have motivated a move towards the adoption of open and reproducible research practices. The video covers the so-called replication crisis in the biomedical sciences, issues around open research, and summarise some of the initiatives (including the UK Reproducibility Network) that have been established to address the fundamental problems around open research, transparency, and reproducibility in science.

Before watching the next video, please have a read through the following paper by Ioannidis (2005) which arguably started the conversation around reproducibility that has had such an impact on research in Psychology and across the Biomedical sciences for the last few years. Clicking on the image below will take you to the paper.