CRF-UCC
HRB Clinical Research Facility University College Cork

Case Study of Good Practice

UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Fheabhsú Cáilíochta
Quality Enhancement

Title: The Hitchhiker's Guide to Reproducible Research: PG6030 - Reproducible Research Practices Using R.

Case Study Synopsis

"The you of three months ago is terrible at answering email!"

Primary research is hard! Steering a course through an ocean of information to arrive at the sun kissed shores of new knowledge is a challenge faced by all. But how did we get there and can we find our way back if required? Reproducible research benefits everyone one, but above all it benefits you. It allows you to recreate the work that you did yesterday, last month, last year. It gives you certainty that the findings you make are based on solid, traceable foundations. Reproducible research practices may seem like additional work, but in reality it is work that you are already doing and just not documenting. Funding bodies recognise this and the emphasis is no longer solely on publications arising from your research, but also on **the data and the process**.
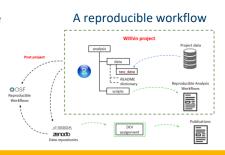
Key Impacts

- PG6030 – Reproducible Research Practices Using R seeks to provide a foundation to support postgraduate researchers who primarily handle **quantitative** data.
- The module aims to introduce the fundamental concepts of reproducible research together with hands-on training in the R programming language.
- Students are instructed on data collection, curation and management techniques that will serve to enhance downstream visualisation, analysis and reporting via scripted, reproducible analytical pipelines (RAPs).
- The module combines asynchronous learning via video instruction with weekly online live sessions and 2 weekly in-person classes.
- Alongside learning R, a highly transferable skill, attendees are encouraged to engage with core data management best practice.
- Combined, this supports an approach to primary investigations that enhances research integrity through diligent incorporation of data management and data quality.

Intended Enhancements

- PG6030 enhances academic career development.
- Knowledge of the R programming language and user experience is a highly sought after skill for many employers outside of academia.
- Academic institutions and research funders recognise the value of the data collected during research. The focus of PG6030 extends beyond data analysis to include data quality, documentation, reproducibility and re-use.
- PG6030 aligns with the UCC Strategic Plan 2023-2028 that has prioritised embedding the principles and practices of Open Research together with FAIR data stewardship.

Areas of Alignment

- ☒ **Research & Innovation**
- ☒ **Learning & Teaching**
- ☒ **Student Success**
- ☒ **Our Place, Our Footprint**

Additional Information

Video Links | Graphics

A non-reproducible workflow

A reproducible workflow