Course Faculty Course Format

Presenters	Affiliation	Email
Daniel Anderson	University of Oregon	daniela@uoregon.edu
Joshua Rosenberg	University of Tennessee, Knoxville	jrosenb8@utk.edu

This tutorial will be a **4-hour mini-course** on tools for conducting open and reproducible research with R. It will overview the idea and importance of reproducible research for educational researchers, cover R Markdown for weaving text with code, and discuss *git*/*GitHub* for version control and collaboration. Part of the benefit of R Markdown is that the syntax itself is relatively straightforward (learning to code with R is much more difficult than learning R Markdown), but is a powerful framework for presenting research findings in a variety of formats, including static web pages, slides, technical reports, and even APA-formatted journal articles. While the heart of our presentation will focus on getting participants familiar and comfortable with R Markdown and version control toward the ultimate goal of more open, transparent, and reproducible analysis workflows, we also spend some time discussing these alternative output formats by way of motivating participants to continue learning beyond the mini-course. Both of the authors are experienced R users and have been using reproducible research principles in their applied work for a number of years.

Dr. Anderson has taught R at the University of Oregon for each of the past two years and is currently leading a five-course data science specialization for the University of Oregon's College of Education (see the current development here). In the classes Dr. Anderson teaches, he requires all work be completed in a reproducible way. Similarly, he has provided training both to faculty at the UO (for example, see here) and at other institutions in a consulting role (for example, see here). He has also written multiple conference papers and led many conference presentations using R Markdown, *GitHub*, and reproducible practices (for example, see his most recent presentation for NCME).

Dr. Rosenberg recently completed his doctoral dissertation using R Markdown and reproducible workflows with *GitHub* (see here). He actively develops statistical software for R, including the konfound R package and interactive web application for sensitivity analysis, and a package that provides an interface to MPlus to make it easier to carry out certain kinds of mixture models as part of a reproducible analysis. Dr. Rosenberg has also given invited talks on using R at Georgia Southern University and at the School of Criminal Justice at Michigan State University. At Michigan State University and now at the University of Tennessee, Knoxville, he has mentored peers and graduate students on using R as part of a reproducible workflow.