CPB Proposed Workshop:
Tools and Workflows for Reproducible Research

Science in general, and ecology in particular, is beginning to focus on *reproducibility*. This is evidenced by journal policies that require the deposition of data and computer code necessary to reproduce the analyses associated with a publication. However, getting your data and code "in shape" for public release is a daunting and time-intensive task. Fortunately, there are new tools and workflows that make the process easier, especially if they are used throughout a project's life cycle from idea conception to publication. Aside from the benefits to other researchers, conducting reproducible research greatly benefits one person in particular: your future self!

During the three day workshop (four hours each day), I will introduce students, postdocs, and faculty to contemporary tools for reproducible research, including Github, R Markdown, Figshare, and Zenodo. Using an example project, we will create a Github repository with code and data, create stunning documents with embedded R code, figures, and tables in R Markdown, and archive the entire project on Figshare or Zenodo. I will introduce best practices for coding and data cleaning/manipulation along the way, which eases the burden of getting code production-ready after paper acceptance. Throughout the workshop I will highlight how the tasks we are learning benefit both the researcher themselves (e.g., figures that update on the fly in R Markdown) and other researchers (e.g., providing a resource from which others can build). By the end of the workshop participants will have the skills to easily make their own research reproducible. This workshop will complement and extend the R course taught by Baskett and Schreiber, without needing their course as a prerequisite.