Literature Proseminar (STATS 810, Fall 2021)

Friday 9-10am, 4088 East Hall.

Instructor: Edward Ionides   **Course web site**: `ionides.github.io/810f21/`

The first 8 weeks of Stat 810 will focus on responsible conduct of research and scholarship (RCRS). Instruction in RCRS is required by both the National Science Foundation (NSF) and the National Institutes of Health (NIH). To satisfy this federal legislation, the University of Michigan requires certification of 8 hrs of classroom discussion on RCRS for all PhD students (http://research-compliance.umich.edu/responsible-conduct-research-rcr-training#). There will be a short weekly writing assignment so that we are all prepared in advance for each discussion.

Certification of RCRS instruction is required for all PhD students and postdocs., since most PhD students and postdocs will at some point be working on federally funded projects. In order to achieve certification, attendance and participation of students is required. Therefore, for the first 8 weeks of 810, it will be necessary to check attendance. The first class of 810 will discuss why RCRS instruction has been mandated, and this would be an appropriate time to raise any concerns you might have about whether RCRS instruction is a worthwhile use of your time. If you cannot be present at class, please contact me: we can arrange a substitution which will involve a writing assignment together with a make-up attendance requirement. If you cannot complete the weekly writing assignment before class, we can arrange a make-up writing assignment.

After completion of the RCRS component, the remaining classes will discuss various issues related to statistical computation: Unix and Linux, parallel computation (the greatlakes cluster), R and Python, Latex, reproducible statistical research (knitR, Rmarkdown, Jupyter), communicating statistical methodology (R packages).

Course Outline

Sep 03	What is RCRS? Why are we discussing it? *[pp. 1–3]*
Sep 10	Building and maintaining healthy mentor/mentee relationships. *[pp. 4–7]*
Sep 17	Publication and peer review. *[pp. 29–38]*. This class will be held on zoom.
Sep 24	Academic misconduct. *[pp. 15–23]*
Oct 01	Data and the reproducibility of research results. *[pp. 8-11]*
Oct 08	Conflicts of interest and conflicts of commitment. *[pp. 43–47]*
Oct 15	Collaborative research; human participants & animal subjects. *[pp. 24-28, 39-42, 48-49]*
Oct 22	Negligence, mistakes & how to avoid them. *[pp. 12–14]*
Oct 29	Internet repositories for collaboration and open-source research: git and GitHub.
Nov 05	Linux and the open source software movement.
Nov 12	Parallel statistical computing.
Nov 19	Statistical computing on greatlakes.
Nov 26	THANKSGIVING HOLIDAY
Dec 03	A workflow for reproducible statistical research: combining Latex and R with knitr.
Dec 10	To be decided.

Reading assignments *[in brackets, above]* correspond to pages of "On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition," a publication of the National Academies of Science and Engineering and the National Institute of Medicine. The course website has a link to a free pdf copy.

COVID adaptations. We will follow UM COVID regulations, such as the requirement to wear a face covering during class. Attendance will be in person unless otherwise stated.

Grading. Participation in class and homework will be assessed non-judgmentally. The expectation is that each of us should contribute to each discussion.