

Biostatistics 171:290
 Statistics in Microbiology
 Spring Semester 2012
 Tuesdays, 11:00 to 11:50am., CPHB C303.

Schedule – This schedule will evolve over the semester. The meeting time is 11am to 11:50am on Tuesdays, commencing on February 21st, in the College of Public Health Building C303.

Please email Kathryn-chaloner@uiowa.edu and Jeffrey-dawson@uiowa.edu if you plan to participate, especially if the scheduled time is not convenient for you.

Date	Topic	Speaker
January 24th	Introduction and Schedule	Kathryn Chaloner, Jeffrey Dawson
February 21st	Introduction: Reproducible Research	Kathryn Chaloner
February 28st	Improving Reproducibility in “Omics” reporting	Kathryn Chaloner
March 6th	Introduction to Sweave for Reproducible Statistical Analysis	Jingyang Zhang
March 13th	NO MEETING (SPRING BREAK!)	
March 20th	Confidentiality and privacy of individuals in data sets: algorithms and potential problems.	Lincoln Lourens
March 27nd	Methods for Detecting Fraudulent Data (tentative)	TBA
April 3rd	NO MEETING (ENAR)	
April 10th	Equipose: What is it?	Kathryn Chaloner
April 17th	Mendel: are his results too good to be true? (tentative)	Jeffrey Dawson/TBA
April 24th		Jeffrey Dawson/TBA
May 1st		Jeffrey Dawson/TBA

This semester, we will be discussing ethical issues related to statistics.

Specific topics that will be covered, together with some selected references are:

1. Documentation of genomics data analysis and reproducibility.

- Jasny, Chin, Chong, Vignieri (2011). Introduction to Special Section. *Science*, 334, p.1225.
- Baggerly, Coombs (2011). What Information Should Be Required to Support Clinical “Omics” Publications? *Clinical Chemistry* 57, 688-690.
- Ionnidis, Khoury. (2011). Improving Validation Practices in “Omics” Research” *Science*, 334:1230-1232.
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2. Reproducible Research

- Peng (2011). Reproducible research in computational science. *Science* 334:1226.

3. Are Mendel's results too good?

- Edwards (1985). Are Mendel's results really too close? (1986). *Biol. Rev.* 61, 295-312.
- Pires, Branco (2010). A statistical model to explain the Mendel-Fisher controversy. *Statistical Science* 25, 545-565.

4. Using Sweave for writing reports.

- Leisch F (2002). "Sweave, Part I: Mixing R and LaTeX: A short introduction to the Sweave file format and corresponding R functions". *R News* 2 (3): 28–31.
- Meredith, Racine (2009). Towards Reproducible Research: The Sweave Framework. *Journal of Applied Econometrics*. 24, 366-374.

5. Equipoise in Clinical Trials: what is it?

- Chaloner K. and Rhame F.S. (2001). Quantifying and Documenting Beliefs in Clinical Trials. *Statistics in Medicine*, 20:581—600.
- Royall RM. Ethics and statistics in randomized clinical trials (with discussion). *Statistical Science* 1991; 6:52--88.
- Freedman B. Equipoise and the ethics of clinical research. *New England Journal of Medicine* 1987; 317:141--145.

Additional topics will also be covered. Possible additional topics are: detecting fraud using statistical methods; avoiding fraud; documenting analysis. Material will be posted on the "Content" section of ICON.

Participation in discussion is expected from everyone, irrespective of whether you register. Those registered for a grade are expected to do more work and a presentation. There will be assignments.

Contacts:

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Disabilities: We would like to hear from anyone who has a disability that may require some modification of seating, testing, or other class requirements, so that appropriate arrangements may be made ahead of time. Please see the instructor after class or contact us by telephone or email me to set up a time to discuss your situation. We will not be able to use any information you give us unless it is provided prior to the exams or other evaluations.

Administrative Home

This course is given by the College of Public Health. This means that class policies on matters such as requirements, grading, and sanctions for academic dishonesty are governed by the College of Public Health. Students wishing to add or drop this course after the official deadline must receive the approval of the Associate Dean for Academic and Student Affairs in the College of Public Health. Details of the University policy of cross enrollments may be found at: <http://www.uiowa.edu/~provost/deos/crossenroll.doc>

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their standard University of Iowa e-mail address (@uiowa.edu). Students should check this account frequently.

Academic Misconduct

Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Education and Student Affairs. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level.

Academic Misconduct includes but is not limited to the following:

- presentation of ideas of others without credit to the source;
- use of direct quotations without quotation marks and without credit to the source;
- paraphrasing without credit to the source;
- participation in a group project which presents plagiarized materials;
- failure to provide adequate citation for material obtained through electronic research;
- downloading and submitting work from electronic databases without citation;
- submitting material created/written by someone else as one's own, including purchased term/research papers;
- copying from someone else's exam, homework, or laboratory work
- allowing someone to copy or submit one's work as his/her own;
- accepting credit for a group project without doing one's share;
- submitting the same paper in more than one course without the knowledge and approval of the instructors involved;
- using notes or other materials during a test or exam without authorization;
- not following the guidelines specified by the instructor for a "take-home" test or exam.

Concerns about Faculty Actions

Students who have a concern about a faculty action should first address the issue with the instructor, then the course supervisor (if there is one), and then the departmental DEO. Students may also contact the Associate Dean for Education and Student Affairs in the College of Public Health. Another resource for students is the Office of the University Ombudsperson. If a complain cannot be resolved at the departmental and/or collegiate level, students may file a formal complaint utilizing the procedure specified in the [Operations Manual \(II-29.7\)](#)

Understanding Sexual Harassment Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances

learning. Incidents of sexual harassment should be reported immediately. See the UI [*Comprehensive Guide on Sexual Harassment*](#) for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Public Safety [web site](#).