Course Syllabus: NMETH 590
Bayesian Clinical Trials
Spring Quarter 2008

Time and Location

When: 8:30am-11:20am Wednesday
Where: TBA

Instructor

Adrian Dobra
Office: Padelford Hall B-303
E-mail: adobra@u.washington.edu
Office hours: 2:00pm-4:00pm Wednesday

Textbook

Spielgelhalter, D.J., Abrams, K.R. and Myles, J.P. (2004). Bayesian Approaches to Clinical Trials and Health-Care Evaluation, John Wiley and Sons.

Additional Reading

Parmigiani, G. (2002). Modeling in Medical Decision Making: A Bayesian Approach, John Wiley and Sons.

Course Contents

This course surveys Bayesian methods for health sciences. It introduces the Bayesian paradigm for data analysis and contrasts it with frequentist inference approaches. The choice of prior distributions is discussed in depth as well as dedicated computing techniques. Randomized controlled trials, observational studies and meta-analysis are also covered. Examples are drawn from biomedical literature.

Here is a tentative list of topics to be covered each week:

1. Introduction to Clinical Trials
2. Basic Concepts from Traditional Statistical Analysis
3. Overview of the Bayesian Approach
4. Comparison of Alternative Approaches of Inference
5. Prior Distributions
6. Randomised Controlled Trials
7. Observational Studies
8. Evidence Synthesis
9. Cost-effectiveness, Policy-Making and Regulation
10. Discussions and Open questions

Many relevant papers will also be covered during lectures.

Prerequisites

It is assumed that the students have completed BIOST 511, or BIOST 517, or an equivalent statistics class. I can waive this requirement in special cases.

Homework, Exams and Grades

There will be no formal homework and no formal examination. The grade will be based on class participation and on a (Very) short presentation whose topic will be chosen by each student.

Communication

You should try to come to the office hours for questions and discussions. You can also email me as needed but please do not expect an immediate reply. Your feedback is welcomed at all times.

Disclaimer

This syllabus is supposed to be an overview of the class. Changes to these rules might occur and you are encouraged to check the course webpage frequently.