M19-540 Decision Analysis for Clinical Investigation and Economic Evaluation
Washington University School of Medicine
Wednesday 1:00 pm – 4:00 pm
Fall 2018
Taylor Avenue Building (TAB) David Blackwell Room 2133

INSTRUCTOR
Su-Hsin Chang, Ph.D., SM
Email: chang.su-hsin@wustl.edu
Office: TAB 209S
Office Hours: By appointment
Phone: (314) 362-8623

COURSE OVERVIEW:
This 3-credit course covers the methods and applications of decision analysis and cost-effectiveness analysis in health care strategy assessment, medical decision making, and health resource allocation. At the conclusion of the class, the student will have an understanding of the theoretical basis for economic evaluation and decision analysis, its application, and hands-on experience in the application of the methods. Among the topics covered are development of a research topic and research questions, development of a decision analytic model, estimation of costs and effectiveness, use of preference-based measures, addressing uncertainty, and preparation of a manuscript presenting a decision analytic study. Students are required to complete a group project to apply methods and techniques they learn in class and prepare a research manuscript as the final project report. Course materials will be tailored to meet the needs of individual projects.

REQUIRED READING:

OTHER RECOMMENDED READING:
REQUIRED SOFTWARE:
We will be using TreeAge Pro software to demonstrate how to conduct decision analysis and economic evaluation. You are highly recommended to obtain a copy of TreeAge Pro for your own computer to 1) practice the methods and the examples we discuss in class and 2) include these methods in your term project. The Master of Population Health Sciences Program will cover the cost of this software.

COURSE REQUIREMENTS:
The objective of this course is to guide you through the steps of decision modeling and cost-effectiveness analysis. You will be asked to form into 3-4 groups to work on a project of your own choice. You will be evaluated based on but not limited to the following components:

1) Project proposal
   - Choose one research topic and propose a set of research questions and aims.
   - Come up with a feasible research plan by identifying i) the outcome measure(s) to be analyzed; ii) potential strategies or treatments; iii) data that could be used.
   - The format of the proposal should be the same as the NIH Specific Aim page (one page limit).
   - Email the proposal to the class instructor and the teaching fellow before class on the due date.
   - A brief presentation (20 minutes for each team) is expected on the day of proposal submission.

2) Referee report
   - Papers will be assigned to each student to read.
   - Write critiques on i) use of data; ii) choice of method and modeling.
   - Suggest improvements.
   - 1.5 page limit.
   - Email the report to the class instructor and the teaching fellow before class on the due date.

3) Project presentation
   - Using the methods taught in class, you are required to complete your analysis of the research project.
   - Each team needs to prepare a 30-minute in-class presentation with 20-minute Q&A in the last session of the class.
   - Discussants will be assigned for each project.
   - Email the slides to the class instructor, teaching fellow, and assigned discussants 24 hours before your presentation.
4) Project report
   - Each team is required to submit one project report (first draft is due on the day of your presentation; final draft is due a week after the last class).
   - The format of the project report: You are required to follow the manuscript requirements for JAMA. (See JAMA Instructions for Authors http://jama.jamanetwork.com/public/instructionsForAuthors.aspx)
   - Incorporate suggestions from the presentation and the discussion in your final report.
   - Email the report to the class instructor and teaching fellow by the due date.

GRADE DISTRIBUTION:

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<th>Component</th>
<th>Percentage</th>
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<td>Class participation</td>
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<td>Project proposal</td>
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<td>Referee report</td>
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<tr>
<td>Oral Presentation</td>
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<td>Final report</td>
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CLASS EXPECTATIONS:
The class instructor will prepare and deliver course materials, be available to students by appointment, and provide timely feedback on student performance. Students are expected to attend each class on time, participate in class discussions, seek any necessary clarification regarding course expectations, and fulfill course requirements in a timely manner. Any issues with attendance, meeting deadlines, or completing assignments should be discussed promptly with the instructor. Email is the best way to contact the instructor.

Attendance: All classes are required. As a courtesy to other students, you are expected to arrive on time. More than one unexcused absence from class may result in a lowered grade. Do not enroll if you have >2 absences already planned.

Blackboard: Please check the site regularly for class announcements, readings, and slides. Blackboard will be the primary vehicle for course announcement and information. However, submissions of course assignments should be via email.

Course assignments: Assignments include project proposals, referee reports, presentation slides, and final reports. All written assignments should be delivered before class on the day of the deadline via email unless otherwise specified. Do not use Blackboard for submitting course assignments. Late submission will not be accepted for credit unless prior approval is obtained from the instructor or a compelling situation prevents prior approval. The instructors will allow for documented family emergencies. Health issues must be documented by a physician.

Mobile phones/social networking: Phone ringers should be silenced during class. Utilization of social network sites is not allowed during class.
**Academic Honesty:** Students are expected to complete course assignments in accordance with Washington University’s academic rules and regulations regarding honesty and integrity. Any evidence of academic misconduct, including cheating, failure to cite sources, and plagiarism will result in appropriate action as dictated by Washington University. Violations of academic honesty will result in notification to the Associate Dean of Academic Affairs at the Washington University School of Medicine, as well as to the MPHS Director and Program Committee. Any hint of violation will result in no grade. For more information, see visit University’s Student Academic Integrity Policy: [www.wustl.edu/policies/undergraduateAcademicIntegrity.html](http://www.wustl.edu/policies/undergraduateAcademicIntegrity.html).

**Special Needs:** Per University policy, students with learning, sensory, or physical disability or other impairment should contact the Washington University Center for Advanced Learning Disability Resources (DR) at (314) 935-4062 or visit [http://disability.wustl.edu/DisabilityResources.aspx](http://disability.wustl.edu/DisabilityResources.aspx). The DR office is located in Cornerstone on the Danforth Campus. Students whose second language is English and/or those in need of assistance in lectures, reading, or writing assignments may contact the University Writing Center at (314) 935-4981 or visit [http://artsic.wustl.edu/~writng/home.html](http://artsic.wustl.edu/~writng/home.html).

**TEACHING FELLOW:**
The teaching fellows are a critical resource for all of you. They will hold office hours and will answer brief clarification questions immediately before and after class; collect and maintain a record of all assignments turned in; help form the teams in class; and be responsible for the management of the class website. If you have a question about course content, please be sure to email the teaching fellows.

<table>
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<tr>
<th>Name</th>
<th>Email</th>
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<tbody>
<tr>
<td>Will Chapman</td>
<td><a href="mailto:chapmanjr@wustl.edu">chapmanjr@wustl.edu</a></td>
</tr>
<tr>
<td>Lisa Pollack</td>
<td><a href="mailto:lpollack@wustl.edu">lpollack@wustl.edu</a></td>
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TENTATIVE COURSE SCHEDULE:

Session 1: Course Introduction and Overview 08/29/2018
Session 2: Statistical Overview 09/05/2018
Session 3: Optimal Decision 09/12/2018
Session 4: Introduction to TreeAge Pro 09/19/2018
Session 5: Valuing Outcomes 09/26/2018
Session 6: Proposal Presentation (Project proposal due) 10/03/2018
Session 7: Deciding when to test + Multiple test results 10/10/2018
Session 8: Finding and Summarizing Evidence 10/17/2018
Session 9: Cost-Efficiency Analysis I (Referee report due) 10/24/2018
Session 10: TreeAge Pro – CEAI 10/31/2018
Session 11: Cost-Efficiency Analysis II 11/07/2018
Session 12: TreeAge Pro – CEAI 11/14/2018
No Class – Thanksgiving 11/21/2018
Session 13: TreeAge Pro – CEAI + Q & A Session 11/28/2018
Session 14: Project Presentations (First draft of project report due) 12/05/2018
Session 15: Project Evaluation and Discussion 12/12/2018
Final draft of the project report due 12/19/2018