Introduction to Dynamic Treatment Regimes

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Department of Statistics
North Carolina State University

SAMSI PMED Program
Spring 2019

Shameless promotion

Coming in 2019:

Introduction to Dynamic Treatment Regimes:
Statistical Methods for Precision Medicine

Tsiatis, A. A., Davidian, M., Holloway, S. T., and Laber, E. B.

- Published by *Chapman & Hall*
- Dedicated website with *software*, *code*, and complete *worked examples*

This course is based on material in this book

Thought leaders

Susan Murphy and *Jamie Robins*

Course information

Goal of this course: Provide a foundation in causal inference and fundamental results and methods for dynamic treatment regimes, preparing students to study the evolving literature

Course meetings: *Wednesdays*, 4:30 - 7:00 pm at SAMSI

Instructors: Marie Davidian (davidian@ncsu.edu) and Eric Laber (eblaber@ncsu.edu), Department of Statistics, NC State

- By appointment
- Marie's office hour: Thursdays, 1:00 - 2:00 pm

Teaching Assistant: Eric Rose (ejrose@ncsu.edu)

See the course syllabus for details

Course Outline

1. Introduction

2. Preliminaries: Basic Causal Inference

3. Single Decision Treatment Regimes: Fundamentals

4. Single Decision Treatment Regimes: Additional Methods

5. Multiple Decision Treatment Regimes: Framework and Fundamentals

6. Optimal Multiple Decision Treatment Regimes

7. Sequential Multiple Assignment Randomized Trials (SMARTs)

8. Statistical Inference