Biostatistics for Clinical Investigators, Fall 2018
Course Overview

Course Goals:

To be able to:
1) Determine which statistical tests are appropriate for data analyses in most clinical studies
2) Perform and interpret statistical analyses using common statistical tests/methods, including sample size and power calculations
3) Recognize when complex (e.g., regression) analyses are indicated; be able to discuss these analyses with biostatistical consultants
4) Recognize errors and limitations of published statistical analyses
5) Present data analyses clearly with appropriate conclusions and interpretations

Course Structure:

Weekly lectures and in-class problem solving
Weekly homework assignments (cumulative)
   - Use the Stata 15 statistical package
   - Show all work including the statistical program output when applicable.
   - You may discuss the homework with others but you are expected to complete your own assignments.

Two in-class exams (cumulative; open book)
   - Use the Stata 15 statistical package
   - You may use books, notes and other written references, but you are expected to complete your own test without help from others.

Requirements for Credit:

1. Enrolling in the class for credit (email deborah.garcia@uth.tmc.edu)
2. Laptop with internet connection
3. In-class attendance for at least 7 of the 9 lectures (must sign in to get credit)
4. Attendance at remaining lectures by videostream - must email Deb Garcia after viewing videostream (https://med.uth.edu/crebm/clinical-research-education/clinical-research-curriculum/ - see instructions at bottom of page) to get credit for “attendance”
5. Completion of all homework assignments within 2 weeks after the date assigned
6. Average score of at least 80% on the two in-class exams
7. Completion of the final exam and all other coursework by 12/5/18

Course Directors:

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# Clinical Research Curriculum Course Schedule: Biostatistics for Clinical Investigators

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<thead>
<tr>
<th>DATE</th>
<th>SESSION</th>
<th>TOPIC</th>
<th>LECTURER</th>
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<tr>
<td>9/5/18</td>
<td>1</td>
<td>Types of Data, Summarizing Data</td>
<td>Claudia Pedroza</td>
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<td>9/19/18</td>
<td>3</td>
<td>Comparing Two or More Groups - Continuous Data</td>
<td>Cynthia Bell</td>
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<td>9/26/18</td>
<td>4</td>
<td>Comparing Two Groups - Categorical Data</td>
<td>Farhaan Vahidy</td>
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<td>10/3/18</td>
<td>5</td>
<td>Measures of Association, Confounding and Interaction - Matched and Stratified Analyses</td>
<td>Cynthia Bell</td>
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<td>10/10/18</td>
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<td>In-Class Midterm Exam</td>
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<td>10/17/18</td>
<td>7</td>
<td>Linear Regression</td>
<td>Charles Green</td>
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<td>10/24/18</td>
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<td>Logistic Multiple Regression (Diagnostic tests)</td>
<td>Farhaan Vahidy</td>
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<td>10/31/18</td>
<td>9</td>
<td>Time-to-Event Analysis</td>
<td>Charles Green</td>
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<td>11/7/18</td>
<td>10</td>
<td>Bayesian Approaches</td>
<td>Claudia Pedroza</td>
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<td>11/14/18</td>
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<td>In-Class Final Exam</td>
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## Course Textbooks (both optional):


## Course Software:

*Stata 15 is required for coursework.*

**FOR STUDENTS ONLY (student ID not required but must use .edu email address)**

*Stata/IC 15 - $89.00 for one-year license, $198 for perpetual licensee*

*Small Stata 15 - (for “students” only, can only accommodate smaller data sets, adequate for the Introductory course but not the Advanced course) - $45.00 for six-month license*


To order: [http://www.stata.com/order/new/edu/gradplans/gp-direct.html](http://www.stata.com/order/new/edu/gradplans/gp-direct.html)

Be sure to include your .EDU email address when ordering.
Suggested Other Reading (General Statistics):


Khan Academy online course: http://www.khanacademy.org/math/probability. The Kahn Academy offers a collection of short (5-10 min) videos by Sal Kahn on important concepts in statistics.


Norman GR and Streiner DL. Biostatistics: The bare essentials. 4th ed. People’s Medical Publishing House, 2014. Very easy to read, limited math, excellent coverage of essential information, lots of examples, main limitation is frat-boy humor.


Suggested Other Reading (Stata):
