Evaluation Design
Advanced Empirical Methods for Policy Analysis (PA 397C).
Fridays 9am-12pm, SRH 3.316/350

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Overview
Statistical models have grown increasingly sophisticated, yet comparatively little progress has been made in evaluating and predicting the results of policy changes. This course takes a back-to-basics approach that emphasizes collecting the right data up front, so that the statistical model can be simple and the interpretation clear. Topics include sampling, confounding, effect size, causality, and real and natural experiments.

Prerequisites
We assume acquaintance with basic statistical inference including differences between means (e.g., t tests), differences between proportions (e.g., chi-square tests), and normal linear regression.

Course Materials
Most readings will be posted to Blackboard, but we also use two books (Kalton 1983; Hamilton 2008).

- Kalton (1983) is available for about $20 at Amazon or other online bookstores. A free ebook version is available through the UTexas libraries at http://tinyurl.com/kalton1983.
- Hamilton (2008) is available used for less than $30 at Amazon or other online bookstores. Note that Hamilton’s book describes Stata version 10. There is a new edition that describes Stata version 12 for more than $100, but I am going to try teaching from the old version. Be prepared to make small changes related to the version change.

Some assignments will require use of Stata software. You have several ways to access Stata:
- **Strongly recommended.** You can purchase discounted copies through the Stata Grad Plan. See [http://www stata com/order/new/edu/gradplans/direct-ship-pricing/](http://www stata com/order/new/edu/gradplans/direct-ship-pricing/). Having your own copy on a laptop computer will be very useful for in-class exercises.
- Stata is installed on all 14 computers in the cluster near SRH 3.263. You need to use these computers in Windows mode (not Mac).
- You can access Stata via the SSC’s StatApps server. For information on the server, see the following page: [http://ssc.utexas.edu/software/stat-apps-server](http://ssc.utexas.edu/software/stat-apps-server).

Some classroom sessions will involve simultaneous editing of spreadsheets. Please open a Google Docs account.
Grading

Weekly assignments 70% (~5% per assignment)
Final exam 30% (cumulative)

Some weekly assignments will emphasize data analysis, while others will emphasize critical reading of research. Weekly assignments are due ahead of class via email. Late assignments receive half credit.

The date of the final exam is not yet scheduled. It will be known sometime in February.

Students interested in carrying out original research can substitute a paper for the final exam. Details will be worked out by arrangement with the instructor.

Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Fri</th>
<th>Topic</th>
<th>Readings</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 18</td>
<td>Course overview</td>
<td>(Hamilton 2008, chapters 1-2 and pages 135-139, or 2012 chapters 1-2, 5)</td>
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<tr>
<td>2</td>
<td>Jan 25</td>
<td>Preliminaries</td>
<td>(Hamilton 2008, chapter 14, or 2012, chapter 4; Kalton 1983, chapters 1-2 &amp; 4-5)</td>
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<tr>
<td>3</td>
<td>Feb 1</td>
<td>Sampling</td>
<td>(Holland 1986; Campbell 1969)</td>
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<td>4</td>
<td>Feb 8</td>
<td>Causality, counterfactuals, and policies</td>
<td>(Rosenbaum 2009, chapter 2.1-2.3.2; Dobbie and Fryer 2009)</td>
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<tr>
<td>5</td>
<td>Feb 15</td>
<td>Simple randomized experiments</td>
<td>(Bloom 2006; Schanzenbach 2006)</td>
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<tr>
<td>6</td>
<td>Feb 22</td>
<td>Complex randomized experiments</td>
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<td>7</td>
<td>Mar 1</td>
<td>Regression and causality</td>
<td>(Berk 2004; Roscigno 1998)</td>
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<td>8</td>
<td>Mar 8</td>
<td>As-if random assignment</td>
<td>(Dunning 2004)</td>
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<td>Mar 15</td>
<td>Spring break</td>
<td>None</td>
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<td>9</td>
<td>Mar 22</td>
<td>Logistic regression</td>
<td>(Long 1997, chapter 3; Hamilton 2008, chapter 10, or 2012 chapter 9)</td>
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<td>10</td>
<td>Mar 29</td>
<td>Regression discontinuity</td>
<td>(Bloom 2009)</td>
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<td>11</td>
<td>Apr 5</td>
<td>Stratification</td>
<td>(Greenland and Rothman 2008)</td>
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<td>12</td>
<td>Apr 12</td>
<td>Propensity matching</td>
<td>(Luellen, Shadish, and Clark 2005)</td>
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<tr>
<td>13</td>
<td>Apr 19</td>
<td>Propensity matching vs. regression</td>
<td>(Shadish, Clark, and Steiner 2008; Peikes, Moreno, and Orzol 2008)</td>
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<td>14</td>
<td>Apr 26</td>
<td>Crossover designs</td>
<td>(Allison 2009, chapters 1-2)</td>
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<tr>
<td>15</td>
<td>May 3</td>
<td>Review</td>
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Readings


