PHIL 6334 (crn: 15631): Spring 2014
Philosophy of Statistical Inference and Modeling
Thurs 3:30-6:15pm, Randolph 209

*Syllabus: Second Installment*

<table>
<thead>
<tr>
<th>Date</th>
<th>Theme/Assignment</th>
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<tbody>
<tr>
<td>1/23</td>
<td>Introduction to the Course: Four waves of controversy in the philosophy of statistics</td>
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<tr>
<td>1/30</td>
<td>How to tell what’s true about statistical inference: Probabilism, performance and probativeness</td>
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<tr>
<td>2/6</td>
<td>Induction and Confirmation: Formal Epistemology: Bayesian confirmation philosophy: B-bumps and tacking paradox</td>
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**Reading:**
- Draft of chapter 1 of “How to Tell what’s True about Statistical inference” (HOTTT): Mayo forthcoming CUP
- Mayo (2005) “Philosophy of Statistics” *
- Probability/Statistics notes (Spanos)

**Optional:**
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Notes</th>
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<tbody>
<tr>
<td>4.2/13</td>
<td>Induction, falsification, severe tests: Popper</td>
<td><em>Reading:</em></td>
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<td>- <a href="#">Chapter 1</a> (EGEK)</td>
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<tr>
<td>5.2/20</td>
<td>Statistical models and estimation</td>
<td><em>Reading:</em></td>
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<td>- Probability/Statistics notes (Spanos)</td>
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<td>6.2/27</td>
<td>Fundamentals of significance tests and severe testing</td>
<td><em>Reading:</em></td>
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<td>- Probability/Statistics notes (Basics of testing)</td>
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<td>7.3/6</td>
<td>Fraudbusting and scapegoating 1</td>
<td><em>Reading:</em></td>
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<td>Five sigma and the Higgs Boson discovery</td>
<td>- Short section from chapter 3, HOTTT; Lindley-O’Hagan letter</td>
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<td>- Probability/Statistics notes (Spanos)</td>
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<td>- Mayo, slides from the Boston Colloquium: “Is the philosophy of probabilism and obstacle to fraudbusting”</td>
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<td>4</td>
<td><strong>SPRING BREAK Statistical Exercises While Sunning</strong></td>
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<td>Reading</td>
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| 8.3/20 | Fundamentals of Testing: Family Feuds and 70 years of controversy     | **Reading:**  
  - The “triad”: Fisher (1955), Pearson (1955), Neyman (1956)  
  - Draft of chapter 5 (HOTTT) part 1: One passage, five interpretations  

  **Spring Break exercises**  
  **Optional:**  
  - [Chapter 11](#) EGEK                                                                 |
| 9.3/27 | How can we test the assumptions of statistical models?                | **Readings:**  
  - Mayo and Spanos (2004), "Methodology in Practice: Statistical Misspecification Testing”.  
  - TBA  
  - Probability/Statistics notes (Spanos)  

  **Optional:**  
| 10.4/3 | Error Statistical Philosophy: Highly Probable vs Highly Probed        | **Reading:**  
  - Probability/Statistics notes (Spanos)  

  **Optional:**  
<p>| 11.4/10| Offshoots of class #10 (TBA)                                          |                                                                                             |                                                                                             |</p>
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<tr>
<td>15. TBA</td>
<td>Resampling statistics and severe testing (TBA)</td>
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**THIS SYLLABUS IS SUBJECT TO CHANGE AS ANNOUNCED IN CLASS COMMUNICATION**

Michael Michaelides (TA for Prob/Stats)<br>E-mail: mmicha@vt.edu.<br>Office hours: Tuesday 3:30-5:30 (Pamplin RM 3121)
**Evaluation (tentative)**

8-9 short items (~54)
5 micro essays in response to reading questions (lowest dropped)
5 prob/stat exercises (lowest dropped)
1 example (PhilStat in your field, article, other with write-up)

Short essay + rewrite 15
Final paper 25

Participation and Contributions
BIBLIOGRAPHY:


http://www.phil.vt.edu/dmayo/personal_website/bibliography%20complete.htm


Readings:


**Optional Readings:**


*The Cartoon Guide to Statistics*