

**Statistics 659 - Assignment 1**  
(due Wednesday, January 27, 2016, 11:59 pm)

**Instructions:**

- The textbook exercises are in the book by Alan Agresti. This assignment covers material from Lectures 01–03.
- Whether you write out the solutions by hand or in a text document, be sure that they are *neat, legible and in order* (even if you choose to solve them in a different order).
- **Type** your name, email address, course number, section number and assignment number at the top of the first page (or cover page).
- Either scan or print your solutions to a **PDF** file under 15MB in size. It must be in a *single* file, not separate files for separate pages. Name the file using your name (for example, I could use twehrly659hw01.pdf) to avoid confusion with other students and/or assignments. *Do not* take a photo of each page and then paste them into a document – this will make your file too big and the results will generally not be very readable anyway.
- Distance students must login to their WebAssign account to upload their file. Local students should login to Filex to upload their files. You must do this by **11:59 pm U.S. Central time**, according to the WebAssign or Filex server, on the due date. We highly recommend that you start the upload at least 15 minutes earlier. You can make multiple submissions but *only the last submission will be graded*.

The problems numbered with an \* are not from the text by Agresti.

1.2cef, 1.3, 1.4, 1.5, 1.8, 1.9

1.9 b. Find the Wald, Wilson, Agresti-Coull, and Clopper-Pearson 95% confidence intervals. Is there much difference?

1.10, 1.12, 1.14

1.19\* Samples were taken from 13 patients with early, culture-confirmed Lyme disease. Of these 13 patients, 8 tested positive on an immune complex assay test. The sensitivity of the test is the proportion of tests that are positive on patients with Lyme disease. Form 95% confidence intervals for the sensitivity using Wald, score, Agresti-Coull, and Clopper-Pearson intervals. Comment on the differences in these intervals.

The remaining problems are only for students who have taken STAT 414, 610 or STAT 630:  
1.15, 1.18