# Statistics 515 Advanced Statistical Inference I
# Fall 2020

**Instructor**:  Wei Wang
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**Class hours**: Monday and Wednesday, 10:30 am - 12:00 pm (EST).

**Office hours**: After class; Wednesday, 1:00 pm - 2:00 pm (EST); by appointment.

**Course description**: This course is aimed at first-year Ph.D. students and builds a good foundation in statistical inference. Topics will include probability theory, random variables, distributions, moments, exponential families, multiple random variables, sufficiency, point estimation, hypothesis testing, confidence intervals. If time permits, EM algorithm, bootstrap methods and Bayesian methods will be covered.

**Text**:  *Statistical Inference*, 2nd Edition, G. Casella and R. L. Berger.

**Course Prerequisites**: STAT430, STAT431, MATH114, and MATH 115.

**Homework**: There will be biweekly homework assignments due on Wednesdays at the beginning of class.  Late homework will not be given full credit without a convincing reason.

**Exam**: There will be a take home final.

**Grading**:  Grades will be based 60% on homework, and 40% on the take home final. No plagiarism toleration.

**S**o**ftware**: We will use the free statistical computing software R (http://www.r-project.org/).

**Note:** No class on Sep. 7th, 2020 (Labor day) or during Thanksgiving break Nov. 26-29. The last day of class will be Dec. 10th (Thursday).