WELCOME to STA 291!

• Syllabus:
  http://www.ms.uky.edu/~mai/sta291.html

• Note: Course materials/lecture notes on the web – usually no handouts in class
• Read the syllabus at http://www.ms.uky.edu/~mai/sta291.html

• And return often, information will be updated as they become available (like room for the exams. Many links will become live as we go on....)
Statistics had a bad reputation

• There are three kinds of lies: lies, damn lies and statistics. -- Mark Twain
But statistics can be useful

- Statistics is the only way to tell if a new treatment/drug is effective. (clinical trials, testing)

- Statistics accurately predicts elections. (polls) (estimation with margin of error)

- Analyzing huge data sets [will not cover]
Statistics the name

- Statistics --- the numbers.
- Statistics --- the science of obtaining, analyzing, draw conclusion from data. (Data sciences)
Outline/Topics to Cover

• Statistical Terminology
• Descriptive methods
• Probability and distribution functions
• Estimation (confidence intervals)
• Hypothesis testing
• Inferential methods for two samples
• Simple linear regression and correlation
Three Important Concepts

• Sampling Distribution
• Confidence Intervals
• P-value of a Statistical Test
Lab Sessions

• Clarify contents of the lecture
• Do a weekly lab practical (often with computer)
• Work out additional problems
• Discuss homework problems
• Get prepared for the exams
• The lab session next week will just deal with computer accounts MyStatLab, etc.
Please...
What does it take to understand the material and do well in 291?

- Logical thinking
- Hardworking, Perseverance
- Don’t fall behind …
  + see Syllabus
  (attend lectures and labs, obtain materials when absent, do homework yourself, …)
- Make sure you quickly set up and get familiar with *MyStatLab*
What is Statistics?

Methods for Collecting, Describing, Analyzing, and Drawing Conclusions from Data
These methods are used for…

- **Design**
  - Planning research studies
  - How best to obtain the required data
  - How many subjects?

- **Description**
  - Summarizing data
  - Exploring patterns in the data
  - Extract/condense information
  - Graphical pictures of the data

- **Inference**
  - Make predictions based on the data
  - “Infer” from sample to population
  - Generalize
What might be the difference to other sections of Sta 291

- Same textbook
- Different Homework, Different Exams
- Different Instructor may emphasis different topics.
• Exams still use old technology (calculator, paper, pencil, formula sheet, your brain power)

• Lab will uses new technology. (web, computer program, …)
Homework 1

• Due Thursday next week (11pm).
• Online homework assignment:
  Log on to *MyStatLab* and create an account for this course

For homework problems, you have 3 try to get full credit. From 4\textsuperscript{th} try the credit will be discounted.
Attendance Question

• Usually, at this point, you will be asked a very short question or survey
• Therefore, please bring 4”x6” index cards