

*Perspectives on
Statistical Practice
&
Statistical Pedagogy*

36-701

Instructor/Course Leader: Brian Junker

Writing Consultant: Tim Dawson

Guest Lecturers and Panels

Class Meetings: MW 1:30-2:20, BH 231B

Pedagogy:

Activities that impart knowledge.

Goals of the course:

1. Become effective communicators of statistical ideas/knowledge.
2. Develop understanding of the elements of statistical practice.

I. TEACHING

- We'll Talk about:
 - How do students learn, and what are the the needs and difficulties of the learner?
 - What are the current trends in statistics education?
 - What are the challenges in teaching statistics?
 - How can we help students learn (and retain)?
- Practice in Instruction (Oded Meyer)
 - Supervised practice in TA-related activities (labs, office hours, grading)
 - Mini - lectures

- **Eberly Teaching Center (Michele DiPietro)**
 - Presentation on conducting office hours
 - Labs observations and feedback
 - Applying cognitive principles in teaching
 - Presentation on teaching first year students

II. CROSS-DISCIPLINARY WORK/CONSULTING

- What are some good and bad practices of statistical consulting (video)
- Panel discussions on cross-disciplinary work (Statistics Faculty)
- Ethics in Statistics Research (Joel Greenhouse)

Teaching \Longleftrightarrow Consulting

III. WRITING

- We'll supervise the writing of two paper assignments
 - one from 711
 - one from 707
- Presentation on technical writing (Tim Dawson, English Department)
- Individual meetings with Tim after first draft is due.

The “heart” of statistical practice is the process of....

$$A B A^{-1}$$

Where:

A - Translating a scientific research question into well-posed statistical problems.

B - Solve the problems.

A^{-1} - translating the results back into a product that is accessible to the relevant scientific community.

- Also important when teaching introductory courses (tutor....)

Handouts:

1. Assignment 1 from 36-711

For next week Wednesday (9/8).... Think about the “A” part - translate the research question into 2-3 statistical problems (and write them down).

2. Examples of old 707 papers.

What's coming.....

- Wed. 9/1 - Meet here a little early: presentation in the Library Instruction Center, Hunt Library (Paul Neuhaus)
- Mon. 9/6 - Labor Day
- Wed. 9/8 - More about the Clinical Depression assignment and ABA^{-1}