

STATISTICAL METHODS FOR LAWYERS

L749

University of Pennsylvania Law School
Fall Term 2006

SYLLABUS

Texts:

M. Finkelstein & B. Levin, *Statistics for Lawyers* (Springer-Verlag, 2nd ed. 2001)(SFL)

This is our basic textbook for the course. It is available from The Book Store, 3601 Walnut Street. The sections listed below are from this text.

M. Finkelstein, *Introduction to Basic Concepts of Probability and Statistics in the Law* (2002 Draft)(BC).

This is a simplified and less mathematical rendition of parts of SFL. It is available from the copy center.

D. Freedman, R. Puzani & R. Purves, *Statistics* (W.W. Norton 3rd ed.)

This is an excellent introductory text that one can use for background. It does not cover all of the subjects we will explore. It is also available at The Book Store.

September 7–Probability, Classical and Bayesian

Basic concepts of probability in science and in law; sufficiency of statistics as proof; conditional probability; odds; likelihood; Bayes's theorem. Reading: BC, Ch. 1.

September 14–Descriptive Statistics

Section 1.1 *Introduction to descriptive statistics*

Section 1.2: *Measures of central location*

Section 1.2.1 Parking meter heist

Section 1.2.4: Hydroelectric fish kill

Section 1.3: *Measures of dispersion*

Section 1.3.1 Texas reapportionment

Section 1.3.2: Damages for pain and suffering

September 21--Descriptive Statistics (con't)

- Section 1.4: *A measure of correlation*
- Section 1.4.1: Dangerous eggs
- Section 1.4.2: Public school finance in Texas
- Section 1.5: *Measuring the disparity between two proportions*
- Section 1.5.1: Proficiency test with a disparate impact
- Section 2.1: *Permutations and combinations*

October 5—Elements of Probability

- Section 3.1: *Some fundamentals of probability calculation*
- Section 3.1.1: Interracial couple in yellow car
- Section 3.1.3: Telltale fibers
- Section 3.2: *Selection effect*
- Finkelstein & Levin, *On the Probative Value of Evidence from a Screening Search*, 43 *Jurimetrics* 265 (2003).

October 12--Some Probability Distributions

- Section 4.2: *The binomial distribution*
- Section 4.2.3: Small and nonunanimous juries in criminal cases
- Section 4.3: *The normal distribution and a central limit theorem*
- Section 4.3.1: *Alexander*: Culling the jury list
- Section 4.3.2: *Castaneda*: Measuring disparities

October 19--Some Probability Distributions (con't)

- Section 4.4: *Testing statistical hypotheses*
- Section 4.4.1: Hiring teachers
- Section 4.5: *Hypergeometric distribution*
- Section 4.5.2: Challenged election
- Section 4.5.3: Election 2000: Who won Florida?

October 26--Statistical Inference for Two Proportions

- Section 5.1: *Fisher's exact test of equality for two proportions*
- Section 5.1.1: Nursing examination
- Section 5.2: *The chi-squared and z-score tests for the equality of two proportions*
- Section 5.2.1: Suspected specialists
- Section 5.2.2: Promotions at a bank

November 2--Confidence and Power

- Section 5.3: *Confidence intervals for two proportions*
- Section 5.3.1: Confounders and confidence intervals
- Section 5.3.3: Purloined notices
- Section 5.4: *Statistical Power in hypothesis testing*
- Section 5.4.3: Automobile emissions and the Clean Air Act

November 9–Epidemiology

- Section 10.1 *Introduction*
- Section 10.2 *Attributable Risk*
- Section 10.2.1 Atomic weapons test
- Section 10.3 *Epidemiologic principles of causation*
- Section 10.3.1 Dalkon Shield
- Section 10.3.2 Radioactive cocktails for pregnant women
- In re Ephedra Products Liability Litigation, 2005 U.S. Dist. Lexis 20259 (SDNY 2005)

November 16–Regression Models & Moot Court Preparation

- Section 13.1: *Introduction to multiple regression models*
- Section 13.2: *Estimating and interpreting coefficients of the regression equation*
- Section 13.5: *Explanatory Factors for a regression equation*
- Section 13.6 Reading multiple-regression computer printout
- Section 13.6.1 Pay discrimination in an agricultural extension service

November 30–Regression Models & Moot Court Preparation

- Section 13.7: *Confidence and prediction intervals*
- Section 13.7.2: Challenged absentee ballots
- Section 14.7: *Logit and probit regression*
- Section 14.7.1: Death penalty in Georgia

December 7–Moot Court

END OF SYLLABUS