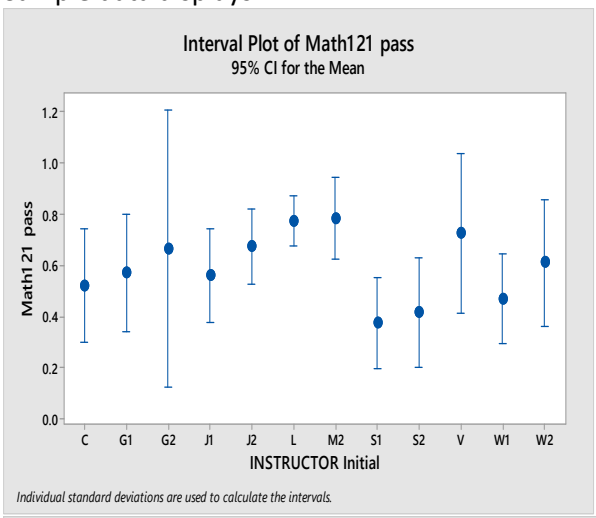
Using Data to Improve a College Math Curriculum and Equity
Preview S116 Jack Rotman

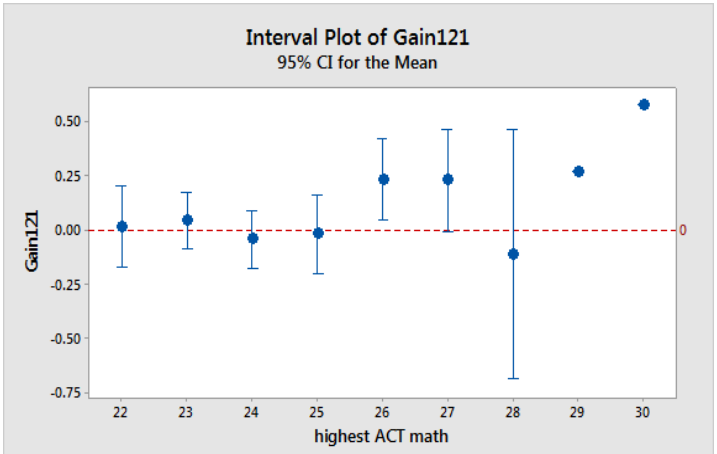
A variety of tools (data warehouse, statistical packages) make it possible for math faculty to explore extensive data sets in powerful ways. This session will show faculty several possible ways to examine such data sets in order to approximate answers to questions important to faculty:

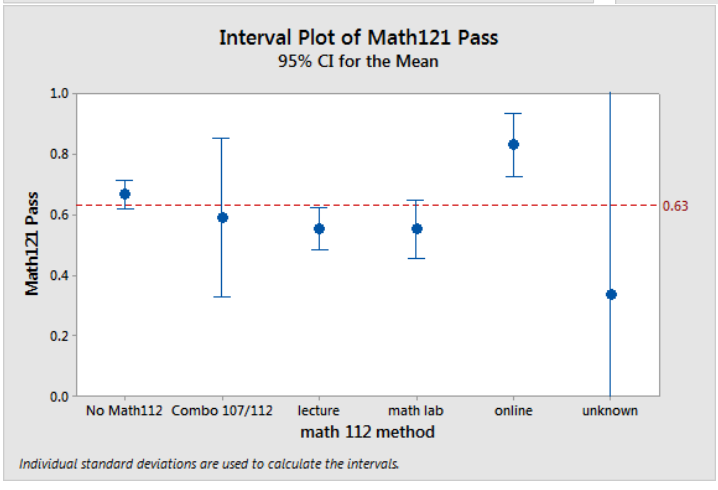
1. Does the prerequisite course adequately prepare students?
2. Is the placement cutoff where it should be?
3. Are there significant variations in results by (A) delivery method of class and/or (B) instructor?
4. Do all students with similar backgrounds equally likely to pass a given class?
5. How close to 'equity' are our classes, in service of upward mobility?

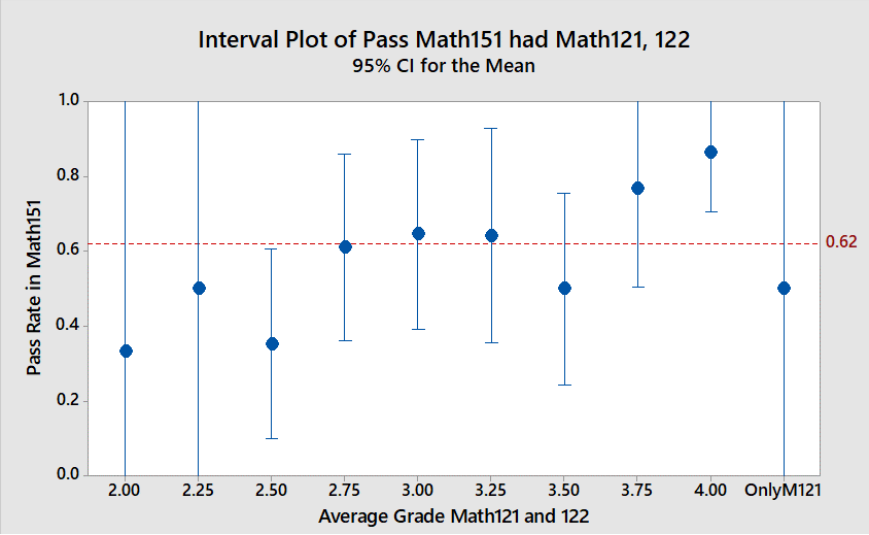
The LCC math department has been using data to analyze our work and improve the curriculum for most of the past 45 years. This session focuses on our use of data at the level of pre-calculus or college algebra, using data variables that are often available at all of our institutions. Some of the data analysis can be done with a spreadsheet, while other processes involve the use of statistical software.

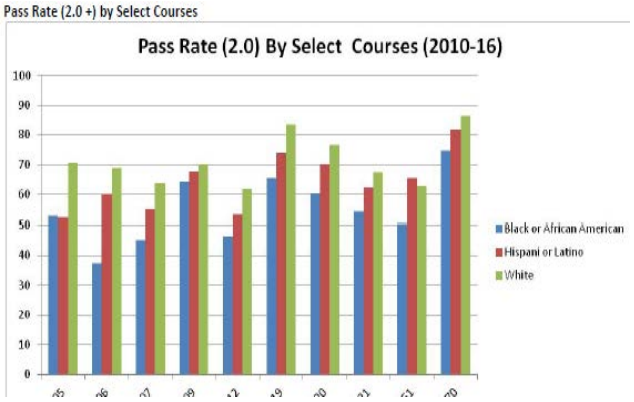
Sample data displays:

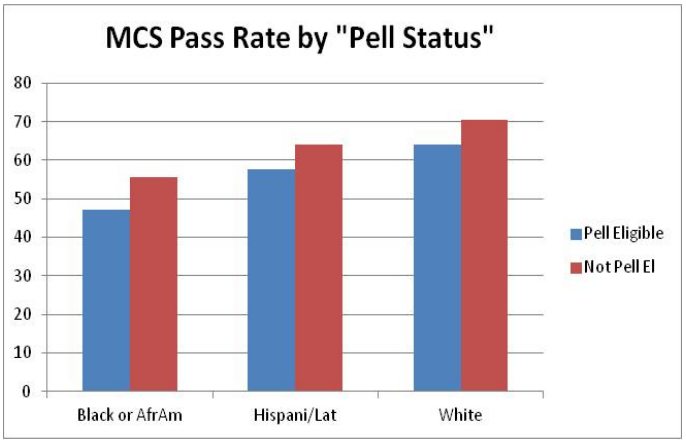


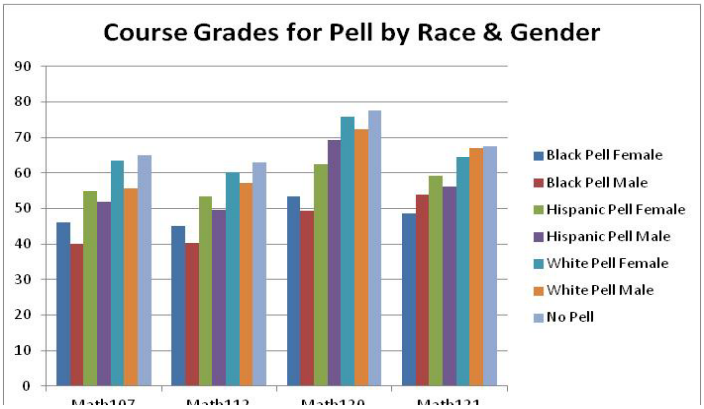





Interval Plot of Pass Math151 had Math121, 122
95% CI for the Mean
Pass Rate in Math151
1.0
0.8
0.6
0.4
0.2
0.0
0.62
2.00
2.25
2.50
2.75
3.00
3.25
3.50
3.75
4.00
OnlyM121
Average Grade Math121 and 122


Pass Rate (2.0 +) by Select Courses
Pass Rate (2.0) By Select Courses (2010-16)
Black or African American
Hispani or Latino
White


MCS Pass Rate by "Pell Status"
80
70
60
50
40
30
20
10
0
Black or AfrAm
Hispani/Lat
White
Pell Eligible
Not Pell El


Course Grades for Pell by Race & Gender
90
80
70
60
50
40
30
20
10
0
Black Pell Female
Black Pell Male
Hispanic Pell Female
Hispanic Pell Male
White Pell Female
White Pell Male
No Pell