

Statistics & Actuarial Science

“23% of students smoked marijuana last year.”
“Risk of cancer increased for coffee drinkers?”
“Young Drivers’ Insurance to rise by 50%”

Every day you are bombarded by statistics. But how are these numbers determined? How reliable are the results? Statisticians and Actuaries are interested in the collection and interpretation of information. They determine the sampling and data collection methods, monitor the execution of the study and the processing of data, and advise on the strengths and limitations of the results. They must understand the nature of uncertainties and be able to draw valid conclusions in the context of particular applications.

Alumni at work

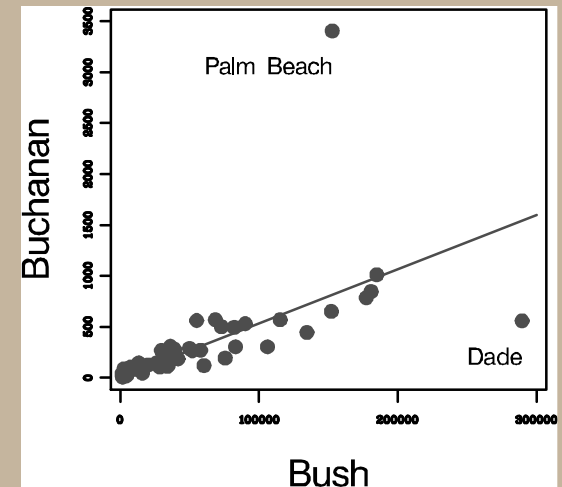
Statisticians and Actuaries are in high demand in high-tech and traditional industries, in government, and in the health care sector. Our alumni can be found at:

ICBC
Statistics Canada
Imperial Oil
The Mayo Clinic
Vancouver Children’s Hospital
Watson Wyatt Actuaries

Who really won the 2000 US Presidential Election?

In the 2000 USA Presidential election, claims were made by Palm Beach, Florida voters that the polling card (the “butterfly ballot”) was confusing, leading them to mistakenly vote for Buchanan instead of Gore.

The graph shows the total votes by county for Buchanan and Bush. In most counties, Bush garnered more votes than Buchanan by a factor of about 200 to one - these points all fall roughly on a straight line. But in Palm Beach, the ratio was closer to 45 to one. Palm Beach stands out as a county where voting trends were significantly different. Confusion over the butterfly ballot leading some Palm Beach voters to mistakenly vote for Buchanan rather than for Gore is a plausible explanation for this aberration. More complex analyses adjusting for income, previous voting patterns, and other variables also show the vote in Palm Beach is anomalous.



Statistics and Actuarial Science at SFU

Faculty research interests are varied and are driven by real problems. For example, are there cancer hotspots in British Columbia, where is a particular gene on a chromosome, how should a consumer price index be constructed, what is the best way to measure risk in investment portfolios, and how should equitable handicap systems be established for golf?

Many of our students work with faculty in solving these problems either through coursework or through our Statistical Consulting Service for both on and off campus researchers. Some recent projects include estimating fish survival as they go over hydro-electric dams, designing experiments to optimize quality of paper from a paper mill, and analyzing the results from a survey of members of an association to see which services needed improvements.