



**Department of Mathematics, Statistics and Computer
Science
St. Francis Xavier University
Presents**

**Ranked Set Sampling And Its Superiority Over Simple
Random Sampling in Estimating The Population Mean**

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In most sampling surveys, a reasonable number of the sampling units can be fairly accurately ordered with respect to a variable of interest without actual measurement and at little cost. On the other hand, exact measurements of these units may be very tedious and/or expensive. For example, for environmental risks such as radiation (soil contamination, disease clusters) or pollution (water contamination, root disease of crops) we commonly find that exact measurements involves substantial scientific processing of materials and correspondingly high attendant cost, while the variable of interest from the experimental (sampling) units can easily be ranked. Ranked set sampling, as proposed by McIntyre (1952) in estimating the mean of the pasture yields, provides an interesting alternative to simple random sampling in these situations. In this talk we show that compared to simple random sampling, ranked set sampling yields more precise estimator of the population mean. This result is especially useful and important for small surveys or for situations where it is expensive or destructive to obtain data.

Refreshments will be served before the talk in AX24A