DATA VISUALIZATION AND THE GRAMMAR OF GRAPHICS

In 2005, Leland Wilkison (Vice President Development, SPSS Inc.) published the Grammar of Graphics to describe the deep features that underlie all statistical graphics. In 2012, Hadley Wickham (Chief Scientist, RStudio) published ggplot2: Elegant Graphics for Data Analysis, a full implementation of Wilkinson's formal grammar for R (also available in SPSS, Stata, and SAS Proc IML Studio). With ggplot2, graphs are built from independent components that can be combined in many different ways. This makes ggplot2 very powerful because the analyst is not limited to a set of pre-specified graphics, but can create new graphics that are precisely tailored to their specific problem. Moreover, because there is a simple set of core principles and very few special cases, ggplot2 is easy to learn. The system is designed to work iteratively: You start with a layer showing the raw data then add layers of annotations and statistical summaries. This produces graphics using the same structured thinking used to design an analysis, which reduces the distance between a plot in your head and one on the page. Easy integration with R Markdown/R Studio also makes it easy to incorporate beautiful graphics into professional knitr reports.

NOVEMBER 28 & 29, 2016 │ 1:00-4:00PM │ RM 474, 753 MCDERMOT AVE

TO REGISTER, PLEASE CLICK HERE

SESSION 1
The first session will provide a two hour introduction to the theory and application of Wilkinson's Grammar as implemented by Wickham, concentrating on real-world examples.

SESSION 2
This session will be a three hour computer lab, to provide a hands-on experience with ggplot2 and other graphical packages built on the formal grammar e.g. ggmap, which links ggplot to on-line map databases, like Google Maps and the OpenStreetMap project.

REQUIREMENTS:
While the lecture session may be of general interest, computer lab participants are expected to be familiar with R, particularly the base R plot functions and data frames. It is recommended that you bring a laptop with R and R Studio. A number of R packages will be used during the computer lab, which can be installed from the command line via: `install.packages(c("ggplot2","plyr","gridExtra","mgcv","RColorBrewer","ggmap"))`

ABOUT THE INSTRUCTOR:
Dr. Atul Sharma, MD, FRCPC, MSc, is a pediatric nephrologist and biostatistician, who recently joined the Biostatistical Consulting Unit as a senior consultant. As such, he brings a unique combination of clinical and statistical insights to methods of interest to clinical investigators.