An Introduction to R for Non-Programmers

Presenter Name: Dr. William Franz Lamberti

Course Length: 3 Day Course (6 contact hours) from May 17 – May 19 at 11 AM EST

Course Title: An Introduction to R for Non-Programmers

Abstract: In this three-day course, participants will be introduced to the basics of R. Basic data manipulation, cleaning, and data visualization will be discussed. Coding best practices will be emphasized throughout the course. Learning through examples will be greatly emphasized. This course will be conducted virtually, so participants are highly encouraged to attend with "R-ready" computers (Windows, Mac, or Linux are all acceptable) to work on examples during the course. This course is designed for individuals who have little to no experience with object oriented programming. Familiarity with programming in tools such as SAS will be helpful, but is not required. It is assumed that the baseline familiarity with data analysis tools have been primarily through a graphical user interface such as Excel. The course will not be recorded. A recorded version of the course is available here: https://vimeo.com/ondemand/rintro

Registration: https://www.eventbrite.com/e/wss-short-course-an-introduction-to-r-for-non-programmers-tickets-332174772687

Outline:
Day 1: 5/17/22: 11 AM EST
Hour 1: R is a Big Fancy Calculator - Topics include vectors, matrices, and math operations.
Hour 2: Computing Things Quickly - Topics include functions and computing linear regression.

Day 2: 5/18/22: 11 AM EST
Hour 1: Dealing with Data - Topics include objects, object types, and data frames.
Hour 2: Plotting Data Part 1 - Topics include scatterplots, color, and titles.

Day 3: 5/19/22: 11 AM EST
Hour 1: Plotting Data Part 2 - Topics include histograms and combining plots.
Hour 2: R Packages for Visualization, Discussion, and Questions - Topics include R packages and other resources available. This time will also be allotted for specific questions from the participants. If there is extra time, additional topics such as ggplot2 may be introduced.

Learning Objectives: By the end of the course, participants will have been introduced to introductory R programming. The material presented will provide the foundations to understand more complicated R functionalities. The material provides the basic knowledge to understand programming at a more general level with the use of text editors and other best practices for coding.

Content and Instructional Methods: The course will have slides for the content. However, many hands on examples are done throughout the course. Generally speaking, each hour will end with an example which summarizes the content for that hour. Participants will have an opportunity to work together to solve the example. The hour ends with presenting a solution to the example provided.

Presenter Background: Dr. Lamberti (Ph.D., Computational Sciences and Informatics with a concentration in Data Science, M.S., Statistical Science) has given talks on R at NASA Langley Research Center, George Mason University's Aspiring Scientists Summer Internship Program, the American Statistical Association's (ASA's) Joint Statistical Meetings, and ASA's Professional Development Webinar Series. He has also received teaching honors as the 2016-2017 Outstanding Graduate Teaching Assistant at George Mason University Statistics Department. He is currently a Postdoctoral Associate at the University of Virginia. Examples of his talks at George Mason University are found at the following link: http://www.rgalleon.com/talks/