



Data Science Summer Professional Development for DCPS teachers and staff

Day 1

Zoom Information (Zoom Co-Hosts: Chelsey Brown & Betty Malloy)

<https://american.zoom.us/j/95125471228?pwd=d2RHeKfkLzFkSThlU0xMVIZpMzhXUT09>

Meeting ID: 951 2547 1228

Passcode: DCPS

Tentative Schedule

9:00am – 10:00am: Welcome to Data Science and R Programming

- Opening Remarks (Dr. Nathan Harshman)
- Greetings/Opening Messages/Introductions (AU Staff and DCPS attendees)
- What is Data Science? The Growth and Influence and Importance of Data Science (Dr. Jeff Gill)

10:01am – 10:46am: Introduction to the R Programming Language

- R Language Origin/Focus/Utility
- R and R Studio installation support and GitHub access
- Overview of Tidyverse and its subpackages
- Installation of package(s)/Tidyverse
- Overview of the Rstudio IDE
- R Trouble Shooting Tips

Q&A 10:47am – 10:57am

10:58am – 11:58am: Usage of R as a powerful calculator

- Preliminary and basic R commands for calculations, analysis, and applications
- Data frames
- Vectors/Lists/Variable types

Q&A 11:59am – 12:09pm

12:30pm – 1pm: Guest Speaker Dr. Barbara Thompson (Research Astrophysicist at NASA Goddard Space Flight Center)

Day 2

Zoom Information (Zoom Co-Hosts: Chelsey Brown & Betty Malloy)

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Meeting ID: 951 2547 1228

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Tentative Schedule

9:00am to 10:45am: Exploration and Analysis of Data Sets

- Retrieving and analyzing embedded R Data Sets
- Using R commands to import Data from an external location (GitHub access)
- Using R to create Data Sets
- Producing and saving R files (*and R Markdown files, time permitting*)

Q&A 10:46am to 10:56am

10:57am to 11:48am: R for Data Visualization

- Using R code to generate the graphs and plots
- Bar graphs & Histograms
- Boxplots, Stem and Leaf Plots, & Violin Plots
- Pie Charts
- Scatter Plots

Q&A 11:49am 11:59am

12 noon to 12:50pm: Practice/Reinforcement work/Application activities

12:51pm to 1:00pm: Summary/Wrap-Up/Reflections/Exit Survey/Closure

Get Help

- Reach out to your Zoom Co-Hosts in chat (during the session) or anytime via email for Zoom and participation help and questions: Chelsey Brown (clbrown@american.edu) and Betty Malloy (malloy@american.edu).
- Contact your Data Science Graduate Teaching Assistant for technical assistance with installing and working with R and accessing material on the [GitHub repository](#): Max Calzada Muñoz (mc4808a@student.american.edu), Sanghyeob Ko (sk7255a@student.american.edu), and Domingo Salerno (ds1559a@student.american.edu).
- Contact your Data Science Instructors for any R questions: Dr. Maria Barouti (barouti@american.edu), Dr. James Dickens (jdickens@american.edu), Dr. Jeff Gill (jgill@american.edu), and Dr. Betty Malloy (malloy@american.edu).