





# Intro to Spatial Data Analysis with R

## Outline

SCGIS 2023 Annual Conference






### Workshop Materials

-  Website: [https://ucanr-igis.github.io/rspatial\\_scgis23](https://ucanr-igis.github.io/rspatial_scgis23)
-  Community Forum: <https://etherpad.wikimedia.org/p/rspatial-scgis23>
-  Data files
-  R Notebooks

### Part 1. Intro to R for Newbies

August 14, 2023. 8:00a - 11:00a PDT







Basic R commands, packages, functions, scripts, importing tabular data, basic plotting

-  **Introduction Part I**  
*Workshop overview, resources, RStudio*
-  **Getting Started with R**  
*R vs RStudio, R as a fancy calculator*
-  **Packages, Functions, Data Frames, and Importing Data**  
*What's in a package? Using functions, Importing CSV files as data frames*





### Part 2. Spatial Data Processing and Analysis

August 15, 2023. 8:00a - 11:00a PDT



Spatial R packages, importing spatial data, spatial transformations, geoprocessing, querying spatial data, visualization

-  **Introduction Part 2**  
*Workshop overview and review of Part 2*
-  **Integrating R & GIS**  
*Where R falls in your GIS tool stack*
-  **Importing and Plotting Vector Data**  
*Spatial data classes; importing from Shapefiles, KMLs, geodatabases, and GeoPackages; basic plotting*
-  **Common Manipulations for sf Objects**  
*WKT, projections, converting data frames into sf, exporting*
-  **Visualization with tmap and leaflet**  
*Creating static and interactive web maps with tmap & leaflet*
-  **Geoprocessing**  
*Geoprocessing functions with sf*

### Extras

-  **Foundational GIS Concepts**  
*Vector and Raster Data, Projections, Attribute Tables*
-  **Working with Color**  
*Color models, color functions, RColorBrewer*
-  **Connecting R & ArcGIS**  
*R-ArcGIS Bridge, importing data from AGOL*
-  **Getting Data from APIs**  
*Using data and API packages, functions to import data directly into R, API keys*

### Other

-  **Other Resources**
-  **Sample Scripts**

