**Introduction to Spatial Data & Using R as a GIS**

**Learning Outcomes**

* Use R to read in CSV data & spatial data
* Know how to plot spatial data using R
* Join spatial data to attribute data
* Customize colour and classification methods
* Understand how to use loops to make multiple maps
* Know how to reproject spatial data
* Be able to perform point in polygon operations
* Know how to write shape Files
* Know how create a 'heat-map' style map using point data

**Contact**

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**Location**

Room 1.84 GEOPL Computer Lab, School of Geography and Planning, Cardiff University, Glamorgan Building, King Edward VII Avenue, Cardiff CF10 3WA.

**Outline of the day**

* 10:00am – 10:15am – Registration & Refreshments
* 10:15am – 11:00am – What is GIS & R?
* 11:00am – 11:30am – Practical 1 *Introduction to GIS & R*
* 11:30am – 12:00pm – Classification
* 12:00pm – 12:30pm – Practical 1 *Introduction to GIS & R ctd.*
* *12:30pm – 1:30pm – Lunch*
* 1:30pm – 1:45pm – Recap and Making Maps
* 1:45pm – 3:00pm – Practical 2 *Analysis*
* *3:00pm – 3:15pm – Tea/Coffee*
* 3:15pm – 4pm/4:30pm – Practical 3 *Bring your own data*

**Useful Websites**

* Electronic versions of all resources: <http://github.com/nickbearman/intro-r-spatial-analysis>
* Useful Data Sources:
  + Global Administrative Areas ([http://www.gadm.org](http://www.gadm.org/))
  + OS Open Data (<https://www.ordnancesurvey.co.uk/opendatadownload/products.html>)
  + Free GIS Data, Robert Wilson (<http://freegisdata.rtwilson.com/>)

**Useful Points**

* Remember that while an electronic version of the notes is available, typing out the R code is a useful exercise for you.
* Remember that a green post it means you are progressing well, a red post it means you need help (particularly useful if I am busy with someone else, so can’t come to you straight away).
* If you have time, you can complete the optional exercises, but if you don’t have time you don’t need to.