

# Day 1 – Spatial & Spatio-temporal Modelling

# Welcome to Day 1

- ▶ Spatial geostatistical modelling
- ▶ Spatio-temporal extensions
- ▶ Malaria data simulated for Nigeria
- ▶ All modelling uses **UTM coordinates**

## Load the Data

```
library(readr)
spatial_binom <- read_csv("../data/spatial_binomial_data.csv")
head(spatial_binom)
```

```
# A tibble: 6 x 10
  id    utm_x    utm_y n_tested n_pos prevalence_true      S elevation
  <dbl>   <dbl>   <dbl>     <dbl>   <dbl>             <dbl>   <dbl>   <dbl>
1 1    385648. 1454675.     182     72       0.351  0.0139 363.
2 2    58859. 1077815.      64      30       0.632  0.680  165.
3 3    437997. 476112.      67      17       0.287  0.489  359.
4 4    380293. 1341662.     188     77       0.419 -0.101  8.90
5 5    319034. 570466.      97      22       0.272 -0.244 484.
6 6    980518. 974256.      88      48       0.427  0.809 474.
# i 1 more variable: urban <dbl>
```