

# 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>
```