



Biotechnology and  
Biological Sciences  
Research Council

**Foundation Masterclasses 2020-2021**  
**Statistics and Experimental Design**  
(for first-year EASTBIO PhD students)

**Workshop leader: Dr Graham Horgan** (James Hutton Institute/Biomathematics & Statistics Scotland - BioSS)

**Date: 9 October 2020, 9:00-13:00** (9:15 start; 10:45-11:10 screen break)

**Registration link** via Blackboard Collaborate (University of Edinburgh):

<https://eu.bbcollab.com/guest/87f2802738aa47ffb850b07ae79eafce> *Please do not circulate the link!*

**Workshop description:**

This workshop will cover the basic concepts and terminology of statistics and the main issues to be considered in modelling data.

**Learning outcomes:**

Understanding statistics terminology and recognising the issues to be considered in study design and in the modelling of outcomes.

**Training Schedule:**

<b>9:15-10:45</b>	Basic concepts of statistics, summaries, standard error, p-values, confidence intervals and considerations in the design of experimental and observational studies, including sample size.
<b>11:10-12:45</b>	Explaining study outcomes: the linear model, analysis of variance, confounding and adjustment. Recognising repeated measures and mixed models.
Questions and discussion will be encouraged during each session as well as at the end	

**Participation requirements:**

None. Students are encouraged to think about the data they are likely to collect during their research in terms of questions such as: What is the research question? What are the main outcome(s) or response(s)? What known factors or variables might be influencing this response? If experimental, what are we controlling? How might we decide how much data to collect? Responses and approaches to these questions will inform their research practice.

**Training web-page:** <http://www.eastscotbiodtp.ac.uk/foundation-masterclasses>

If you have further **questions**, please email [enquiries@eastscotbiodtp.ac.uk](mailto:enquiries@eastscotbiodtp.ac.uk).