Foundation Masterclasses 2021-2022
Statistics and Experimental Design
*(mandatory* for first-year EASTBIO PhD students – 10 training points)

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

**Date:** 13 October 2021, 9:00-13:00 (9:15 start; 10:45-11:10 screen break)

**Online** via Microsoft Teams (*please do not circulate*): [Click here to join the meeting](#)

**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:**

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

**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 our research practice.

The session **will be recorded** for students unable to attend and will be circulated upon request.

**Training webpage:** [http://www.eastscotbiodtp.ac.uk/foundation-masterclasses](http://www.eastscotbiodtp.ac.uk/foundation-masterclasses)

*If you have further questions, or concerns about your attendance, please email enquiries@eastscotbiodtp.ac.uk.*