**Graduate School**

# STATISTICAL ADVISORY SERVICE FOR DOCTORAL RESEARCHERS AT READING

## A guide for doctoral researchers

The Graduate School in collaboration with an external company provides a Statistical Advisory Service (SAS) to support doctoral researchers needing help with statistics e.g. project design / statistical analysis during the course of their doctoral studies. This service is free to all doctoral researchers from all departments and at any stage of study.

This guide outlines what support the Statistical Advisory Service offers and how you can access it.

## How it works

### Appointment Service

Consultations are for up to 45 minutes duration. If it is not possible to finish the problem within this timeframe then further consultations are possible. However, please note that the number of consultations are limited to a maximum of three within a 12-month period. It is therefore essential you come prepared to make the most efficient use of the time available. All consultations will take place on the Whiteknights Campus. The advisor needs to develop an adequate understanding of the background to the statistical problem. Therefore, you need to describe the study objectives and expected outcomes on the Statistical Advisory Service Appointment Request Form.

### Booking an Appointment

The Statistical Advisory Service runs as an *appointment only service*. Appointments are scheduled according to the availability of an appropriate advisor. **Appointments are requested by completing the SAS Appointment Request Form which you can download from the Graduate School website. Appointments cannot be made in any other way**. Note that advice will not be given by phone or via email, only by face-to-face consultation. When you complete the form be sure to outline your statistical problem carefully; thinking in advance and writing down the nature of your problem may help you decide on the type of advice that you are seeking. Please state which statistician you wish to see or select the 'no preference' option on the form.

You should receive a reply to your SAS appointment request within one week. Please do not resubmit your form unless you have heard nothing after two weeks. Appointments will be allocated on a first come first served basis according to the availability of the advisors.

Please be aware due to the high demand for the SAS, if you miss an appointment (for whatever reason) you will go to the bottom of the waiting list.

### Repeat / Follow-up Visits

If a follow-up visit is required, this will need to be booked by completing a new SAS Appointment Request Form. You should indicate the name of the advisor you have seen before and whether your problem is a continuation or a new one. Usually you should see the same advisor for follow-up advice

about the same problem.  Please note that the number of consultations are limited to a maximum of three within a 12-month period.

Please note that in some instances the SAS may not be able to provide advice, e.g. if your query is in a specialised area of statistics or about a non supported software package where we have no-one with the relevant expertise.  Supported software packages are: Genstat, Minitab, R, JAGS, RStudio, GPower, PASS, OpenBUGS, WinBUGS, SAS, SPSS, Stata and Excel.

# What the Advisory Service can do for you

**Advice at the planning stage of research can help to:**

- ensure that the proposed research investigation is designed to address the research objectives within the resource limitations as efficiently as possible
- identify best practices for data management in preparation for statistical modelling
- check that the computation facilities necessary to analyse the results are available

**Input at the data analysis stage can help to:**

- identify suitable statistical methods that will address study objectives
- implement the analysis using appropriate statistical software
- ensure that reliable and evidence based conclusions can be drawn from the analysis
- ensure best-practice presentation of results

# Type of advice given

**Support offered by the Service includes:**

- input to the design of your research study, in terms of resources, and how best to plan the study to address the objectives most efficiently and avoid bias in the results
- advice on the design of your data collection instrument (questionnaire)
- advice on how to approach the analysis of data collected in your research investigation
- assistance with the meaningful interpretation of the statistical results of your analysis
- guidance on how best to enter your data on the computer for statistical modelling
- assistance in solving more complex statistical problems connected with your research

# What the service does not provide

The Statistical Advisory Service cannot take responsibility for the outcomes of the research. It has no obligation to monitor or evaluate work undertaken as a result of an advisory session.

The service also cannot provide tuition that substitutes for proper statistical education that the advisee should have acquired. e.g. as part of a degree programme. Basic information about a statistical method can be obtained by attending Reading Researcher Development Programme (RRDP) sessions (if available).  A basic knowledge of the main statistical computing packages can be obtained by accessing the 'Introduction to statistical packages - resource list' in your own time.

# What you should, and should not, expect from the statistics advisor

- You should expect the advisor to be considerate, attentive and constructive. However, the advisor may not always have an immediate answer and may request to see you at a later time.
- You should expect advice from the statistician on how to design your study, manage your data or carry out a statistical analysis. It is not the advisor's role to do the work for you, or to take responsibility for monitoring your work.
- Advisees should not expect advice on any non supported software package. Supported software packages are: Genstat, Minitab, R, JAGS, RStudio, GPower, PASS, OpenBUGS, WinBUGS, SAS, SPSS, Stata and Excel.

# What the statistics advisor expects from you

- Recognition that statistical inputs to a project at its planning stage can help to lead to better designed studies.
- The SAS is not suitable for last minute advice - if you have a deadline to meet and need prior statistical advice, we urge you to seek the advice well in advance.
- Please try to explain the whole problem to the statistician at the initial meeting, rather than presenting different components of your problem at different times. This will make for greater efficiency and understanding on the part of the advisor. It will also help to ensure you are given the correct advice first time round. If you can bring along clearly stated protocols, and any necessary diagrams or output, that will be useful.
- Ideally you should discuss your problem / query with your supervisor in advance of the consultation and before you complete the SAS Appointment Request Form.

# Introduction to statistical packages resource list

Below is a set of links to resources that give an introduction to statistical packages. If you have little experience using your statistical package, we recommend exploring the resources here before seeking advice from the SAS.

**General Resource Pages**

http://stats.idre.ucla.edu

**Data Analysis Examples**

http://stats.idre.ucla.edu/other/dae

**Software**

- R
http://cran.r-project.org/other-docs.html
http://www.youtube.com/user/TheLearnR
http://stats.idre.ucla.edu/r
http://stats.idre.ucla.edu/r/modules

- SAS
http://support.sas.com/training/tutorial
http://stats.idre.ucla.edu/sas
http://stats.idre.ucla.edu/sas/modules

- SPSS
https://stats.idre.ucla.edu/spss
https://stats.idre.ucla.edu/spss/modules

- Stata
http://www.youtube.com/user/statacorp
https://stats.idre.ucla.edu/stata
https://stats.idre.ucla.edu/stata/modules

- Minitab
http://www.minitab.com/en-us/support/videos
http://www.minitab.com/en-us/products/minitab
https://www.minitab.com/uploadedFiles/Documents/getting-started/MinitabGettingStarted_EN.pdf

- Genstat
https://www.vsni.co.uk/take-a-tour/genstat-tutorials
http://www.youtube.com/user/GenStatSoftware
https://www.vsni.co.uk/resources/training/tutorials