What is Biostatistics?

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What is Biostatistics? Simply put, biostatistics is the application of statistics ie. collecting, analysing and interpreting data on living organisms. In the context of public health, "living organisms" in this sense generally refers to human life. The prefix "bio" is greek, which means "pertaining to life" hence we are looking at life in statistics!

Why are biostatisticians important?

So what does a Biostatistician do and why are they important? Suppose you are doing research on epithelial ovarian cancer, how would you get started? Well, you know that you would need to find patients that have ovarian cancer but how many? What sort of research design would you use (for eg. is this a randomised controlled trial?) and what data would you need to collect? Furthermore, how would you analyse this data and ensure that your research study on ovarian cancer is valid and good enough to be published in a scientific journal? These are all questions that a biostatistician can answer and over the next 12 weeks, you are going to learn much of how this is all done. My hope is that by the end of this unit, you will be able to read a research paper, analyse and critique the statistical methods that have been done and draw conclusions from it.

Do I have to do mathematics???

A common misconception about biostatistics is that it is simply a mathematics subject. While biostatistics uses a variety of mathematical models, it is considered a science. Having said this, there will be two software programs that will help you with the "maths" part. These are Microsoft Excel and IBM SPSS. Both programs are mandatory for this unit and a 12 month license of SPSS can be purchased **here** **(https://www.hearne.software/Software/SPSS-for-Australian-Catholic-University-Students/Editions)** for only $45AUD (cheaper than any textbook you would ever buy!). Please do not be worried about what level of math you have, the most important thing in regards to maths will be knowing how to solve and manipulate algebraic equations and understanding how to read and interpret visual distributions and graphs. These can be learnt during the unit but only if you are committed to learning them and putting in the work.

Download SPSS **(https://www.hearne.software/Software/SPSS-for-Australian-Catholic-University-Students/Editions)**

Please make sure you have a running copy of IBM SPSS on your computer before Week 1 as you will be completing a series of SPSS exercises that are designed to give you a strong introduction to the program. You will also need to know how to use SPSS for most of your assessment tasks including two online computer exams so make sure you know how to use it well! Please note y **must** use your ACU "@myacu.edu.au" account to access the $45AUD discounted price.

Academic Integrity

Finally, I want to make it very clear that I am here to help you. I want every one of you to succeed in my unit so if at any time you are struggling with the concepts, please feel free to send me an email (brandon.cheong@acu.edu.au) and I will usually respond within two business days. This unit is difficult. If you do not keep up with the work each week, you will fall behind and fail so please make sure you do your best to stay on top of all the exercises and concepts that are taught. I am also very strict when it comes to academic misconduct. If you are having trouble in this unit, please come speak to me first, plagiarism and collusion are very serious offences and could result in you failing the unit or being expelled from the university. There will be some group work in this unit where you can discuss with your colleagues as well as discussion boards however, most assessment tasks are to be completed individually.