

## **Title:** Introduction to Statistics

**Lecturer:** Dr Cowan, G

**Date and Times:** 30<sup>th</sup> July at 11:15  
2<sup>nd</sup> August at 10:15  
2<sup>nd</sup> August at 11:15

### **Summary of the proposed talk:**

The three lectures will present an introduction to statistical methods as used in High Energy Physics. As the time will be very limited, the course will seek mainly to define the important issues and to introduce the most wide used tools. Topics will include the interpretation and use of probability, estimation of parameters and testing of hypotheses.

### **Prerequisite knowledge and references:**

Prerequisite knowledge is standard university level mathematics.

References include

-R.J.Barlow, *A Guide to the Use of Statistical Methods in the Physical Sciences*, John Wiley, 1989;

-S.Brandt, *Statistical and Computational Methods in Data Analysis*, Springer, New York, 1998;

-L.Lyons, *Statistics for Nuclear and Particle Physics*, CUP, 1986;

-G. Cowan, *Statistical Data Analysis*, Clarendon Press, Oxford, 1998;

-W.T.Eadie et al., *Statistical Methods in Experimental Physics*, North-Holland, 1971.

The latter two have been claimed to be difficult at undergraduate level. Lecture notes from a University of London postgraduate course on Statistical Data Analysis for Particle Physicists, which goes significantly further than what we will cover in the three lectures, can be found at [www.pp.rhul.ac.uk/~cowan/stat\\_course.html](http://www.pp.rhul.ac.uk/~cowan/stat_course.html)

## **Biography**

### **Dr Glen Cowan:**

1977 -- B.S. in Physics from University of California, Los Angeles

1988 -- Ph.D in Physics from University of California, Berkeley

1988-1998 -- Research on electron-positron annihilation with the ALEPH Collaboration (properties of hadronic Z decays, QCD) with MPI Munich and University of Siegen.

1998-present -- Senior Lecturer in Particle Physics at Royal Holloway, University of London. Research with the BaBar and ATLAS experiments.