WHY I WORK IN O.R.

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Since reading Louise's recent Y2OR columns aimed at those in their early career, I thought it would be a good idea to chip in with some of my experiences in O.R. to date; hopefully giving younger members a flavour of the interesting and exciting opportunities that await them following graduation.

First off I suppose it is worth saying that I consider myself very fortunate to have started my higher education at a university with such a strong base in O.R. At college I developed a keen interest in the application of maths to real-life problems but was never really aware of what operational research was all about until I started at Cardiff University back in 2005.

Following on from a very O.R.-based undergrad degree, I stayed on at Cardiff to study for a Ph.D. under the supervision of Jeff Griffiths and Janet Williams. For anyone who has developed a real interest in O.R. and has a passion for learning more, a higher research degree should be a consideration. For me, it was also a way to further postpone any decision about what I wanted to do in life – and to enjoy another three years of being a student! A particular asset of an O.R. Ph.D. is the blend between theory and practice; opening the door for a career as either an academic or a practitioner.

I actually chose a mixture of these, opting for a role in bioterrorism analysis at the Health Protection Agency. This seemed a natural choice given that my doctorate was in health management – however, the application was very different. To begin with I worked on statistical threat assessments for the Olympic Games, but my major commitment was creating a model for host reaction following

inhalation of an anthrax-like bacteria. This model was then used to evaluate the efficacy of potential medication strategies in the event of a terrorist attack. To succeed in this project, the knowledge and experience gained during a Ph.D. was, for me, absolutely vital; I had the ability to review the relevant literature in order to work out *what* to model, and the technical skills to determine *how* to model it.

Clearly for anyone with a quantitative background, a job in finance is always an option, and so after a year and a half at Porton Down I moved to the City. Since October I've been working for Lloyds Banking Group, joining the Capital Modelling Team at an exciting time – over the next year we will be working to develop a sophisticated approach to improve the measurement and management of operational risks affecting the bank. Learning about how risks can be modelled using O.R. has been fascinating and I'm really enthusiastic about putting the model into action with my colleagues.

So what do I want to get across here? Well firstly that O.R. is a discipline spanning a vast number of applications, meaning plenty of scope for exciting career opportunities. In the coming years this is no doubt set to continue with the rise in big data analytics. Variety can also be found in the breadth of techniques that can be applied. Working on different projects across different sectors offers both the opportunity to widen and deepen O.R. skills in the toolkit. And where will I end up? It's hard to say - as long as I'm in O.R. it could be doing anything!

Richard is speaking about the research undertaken during his Ph.D. at the Beale Lecture on February 27th at the Royal Society in London. For any correspondence he can be reached at richardwoodgb@hotmail.co.uk**.**

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