

THE LAST WORD

GUEST COLUMN



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Life as a new scientific researcher in Nottingham

This decade promises to be an exciting time in Nottingham – another ‘Robin Hood’ blockbuster is released in May; multiple international cricket matches are being hosted at Trent Bridge; and, if England’s bid is successful, Nottingham will be one of the hosts for the 2018 FIFA football world cup. Such a bid would involve the construction of a new stadium by the River Trent, opening the likelihood of increased economic investment, development and opportunity in our city. But there is another side to Nottingham: its two universities which attract international funding, stimulating local employment and investment. What, then, of the opportunities for new scientific research and the next generation of scientific researchers in Nottingham?

Moving back to my home city as a Research Fellow at the University of Nottingham, after 21 years as a student poses the question – is it the right choice? Nottingham boasts such breathtaking – and notable – discoveries as the MRI scanner by Peter Mansfield at the University of Nottingham, for which he was awarded the Nobel prize in 2003; development of the first ever genetically-modified tomato in 1996 by Don Grierson, another University of Nottingham member; discovery of the painkiller ibuprofen, by Dr. Stewart Adams within the leading pharmaceutical giant Boots, and; the introduction of the country’s first ever shin-pads in 1874, developed by Samuel Widdowson for his beloved team – Nottingham Forest! Only time will tell if I will make such famous discoveries but what does Nottingham have to offer an early career scientific researcher?

Why Nottingham? Well – I, Dr. (almost – officially after graduating) Smith spent many an hour looking into where to take the next step. Dizzying arrays of projects were on offer, but most were extremely detailed with the principal investigators already dictating the path to follow. Not the right choice for me. Then I spotted a fellowship offered by the University of Nottingham: research within a given

area (infection and inflammation in my case) but without the constraints placed on me by a funding grant. Thus, I got the freedom in which to pursue my research without the constant demands of having to meet the detailed plans of a grant. Indeed, with the University of Nottingham currently ranked seventh for research in the country, it was already an attractive place to start my research career. Within Nottingham I am based at the Centre for Biomolecular Sciences; a specialised research institute. The centre houses over 300 scientific researchers – from the Department of Electrical Engineering and Schools of Chemistry, Clinical Sciences, Mathematical Sciences, Molecular Medical Sciences and Pharmacy – researching in topics as diverse as drug discovery, stem cells, infection and inflammation. I’m now developing – with the help of my research group supervised by Professor John Atherton – my own research into understanding the medically important bacterial pathogen *Helicobacter pylori*, which is estimated to infect half of the world’s population during childhood, and can lead to serious health problems in adult life, such as peptic ulcers and gastric cancer. By gaining a more thorough understanding of how *Helicobacter pylori* can establish and sustain infection throughout an individual’s life, we can progress current therapeutic approaches to target this infection. During my research I am sure that, like all laboratory researchers, I will have to deal with many setbacks before accomplishing successful discoveries in research. Fortunately, by being in an environment with people from such different backgrounds, I am gaining an arsenal of different approaches to tackle a problem. I recently published the key findings from my PhD (Smith et al. 2010. Cell Host and Microbe; investigating how the diarrhoeagenic pathogen enteropathogenic *E. coli* hijacks the host intestinal cells to mediate infection – well you did ask, didn’t you?) and I hope to be able to apply these techniques to the world of *Helicobacter pylori* to make advances in this area. Working in a purpose-built facility with such varied and extensive expertise is therefore an incredible opportunity to collaborate with like-minded researchers on tackling healthcare problems.

This multi-disciplinary approach to research is not restricted to my research centre but is a key strategy of both the University of Nottingham and Nottingham Trent University, the aim being to promote the sharing of ideas between research groups and progress our discoveries into the corporate jungle. Several new facilities have been developed to further develop our research, such as the University of Nottingham Innovation Park in 2008 (with the Sir Colin Campbell building winning the Nottingham Science City Development Project 2009 award!). This provides laboratory and testing facilities aimed at moving academic research into the commercial environment. The Van Geest research centre, opened at Nottingham Trent University in 2008, houses a multi-disciplinary team focused on identifying markers of cancer to

aid treatment and potentially provide vaccines against cancer. Indeed, some of these have already entered clinical trials. Outside of the universities, No. 1 Nottingham Science Park extends the current Nottingham Science Park and aims to provide a relaxed, innovative and flexible environment within the city for research and development. While I have no current involvement with these facilities, future plans involve the development of a MediPark by the Queen’s Medical Centre. This will be a high-level laboratory and office space, targeted at attracting top international medical scientific researchers to push forward scientific knowledge on both academic and business levels. This venture is supported by many local scientific businesses including BioCity, the UK’s largest bio-incubator providing laboratory and office space to a large number of companies in the centre of Nottingham. The development of such specialised resources for scientific research will, in my opinion, yield some incredible information over the following decade and provide an institution that I can’t wait to be part of. By joining a vibrant and rapidly developing scientific community, especially in relation to the consort of people attempting to combat some of the major pathogens that threaten our lives, I feel strongly placed to develop my research career.

So, ta me duck, Nottingham is the science city for me!

If you would like to write a guest column on a science issue for future editions of Wavelength, email us your ideas to mpatt67@btinternet.com

WHAT IS SCIENCE CITY?

The Government designated Nottingham as one of the six Science Cities in March 2005. Nottingham holds this science status to acknowledge a rich science heritage, from the invention of ibuprofen and the MRI scanner, to Nottingham’s present strengths, including two of the country’s leading research universities.

Nottingham Science City is supported by a number of organisations and they include:

Berryman
Boots
East Midlands Development Agency
Greater Nottingham Partnership
Learning and Skills Council
Nottingham City Council
Nottinghamshire County Council
Nottingham Development Enterprises
Nottingham Regeneration Ltd
Nottingham Trent University
The University of Nottingham

Nottingham Science City aims to:
Nurture ... Nottingham’s role as an international leader in scientific discovery and teaching excellence

Stimulate ... community pride and interest in our scientific heritage

Convert ... science into thriving businesses in Nottingham

If you have any relevant news items or ‘people stories’ you feel should be included in the next issue of the Nottingham Science City newsletter, please contact journalist Mark Patterson on 07708 336171 or email mpatt67@btinternet.com

