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Helping the next generation of STEM researchers: Nuffield Research Placements

Written by [Margaret MacDougall \(/component/contact/contact/292\)](/component/contact/contact/292) on 20 June 2016. Posted in [Features \(/features\)](/features)



Each year, from June to August, the Nuffield Research Placements (NRP) (<http://www.nuffieldfoundation.org/nuffield-research-placements>) scheme offers sixth form pupils funding to gain a four- to six-week science research placement at a participating institution. Margaret MacDougall, a medical statistician and researcher in education at the College of Medicine and Veterinary Medicine in Edinburgh, gives an insight into hosting one of these students and what it entails.

I received initial expressions of interest in my advertised projects from Andrew Girdwood and Becky Miller (pictured left) of Braidhurst and Coatbridge Schools, respectively, in North Lanarkshire. They had each expressed an initial preference for the same project. I invited them to attend a semiformal interview with me within the Centre for Population Health Sciences, University of Edinburgh (UoE). Both were successful in their interviews.

In advance of their placements, both candidates were given some preparatory reading. This took the form of a series of three papers which I had previously published in the field of research-teaching linkages. This ensured that both candidates were provided with some background and rationale for their own research together with early exposure to academic writing styles.

Andrew and Becky shared an open-plan office with PhD students, one of whom was able to break the ice through sharing an impressive gallery of origami figures. On their first day, they also participated in a formal health and safety induction and IT briefing and were encouraged to complete a work-based risk assessment. To support development of research skills, they consulted a customised version of my lecture notes for senior medical students, inclusive of advice on accessing my online statistics resources, to which they were granted temporary login access.

The project was a spin-off project from my Higher Education Academy-funded project *Research-based SSCs: A pragmatic approach to advancing the research-teaching nexus in UK medical schools*

(<http://www.tandfonline.com/doi/full/10.11120/hsce.2014.00049>).

The project area was *Year 4 undergraduate medical student approaches to their learning while engaged in mandatory short-term research projects*. Andrew and Becky played a key role in identifying possible student factors which pre-dispose such students to making choices which enhance their learning experiences as researchers. They also addressed a wide range of secondary goals, including investigating medical student perceptions of their own research experiences.



Their responsibilities included preparation of anonymised undergraduate medical student questionnaire response data for analysis and in turn, presentation and analysis of these data using IBM SPSS (Statistical Package for the Social Sciences) and Minitab. Andrew worked on the project for two weeks prior to Becky's arrival. With the help of my Data Preparation tutorial (<http://www.jaqm.ro/issues/volume-3.issue-3/pdfs/macdougall.pdf>) (PDF), he acquired hands-on experience of the iterative process that typifies the simplification of comprehensive survey data. He was also able to demonstrate creativity in the coding of free text response data.

During the first week of her placement, Becky was in turn able to compare her independent coding with that of Andrew's. Correspondingly, both students appreciated the role of assessing reproducibility of data at the interface between qualitative and quantitative research methods. During the project, they were also exercised in the language and science of hypothesis testing and the assumptions behind the correct choice of individual hypothesis tests. They acquired training in sound principles for the visual display of data and the interpretation of confidence intervals, including the completion of comprehensive dissertation-style research reports. During their placements they also took up the offer of having an interview with a university careers adviser to further support identification of their career options prior to returning to secondary school for a final year.

I had the privilege of attending the closing Nuffield Celebration Event with one of my NRP students. The student offered a poster presentation at the event, while gaining a flavour of participating in a scientific conference. This year, I hope to revisit the NRP student work with a view to preparing relevant content for publication in a peer-reviewed journal.

While my NRP students were very productive in their research and brought their project work to successful completion, I would recommend that future project providers explore the opportunity to offer a buddying system for NRP students. This would allow existing junior researchers to take a share in the mentoring responsibilities involved in helping NRP students to feel at ease within their new working environments. Ideas for good practice in this area could be derived through adapting the recommendations offered in the more recent University of Edinburgh buddy system guide 'Role of the buddy in the induction process' (http://www.docs.csg.ed.ac.uk/HumanResources/Recruitment/Role_of_the_Buddy_in_the_Induction_Process.pdf) (PDF).

The Nuffield Research Placements scheme is managed by the Nuffield Foundation, a charitable trust, with funding support from Research Councils UK, the Society for General Microbiology and the Wellcome trust. Participating host institutions are responsible for volunteering projects for the students to work on, and eligible students are selected in the first instance by a structured application process. Candidates in schools from less affluent areas or who do not have a family history of attendance at university are encouraged to apply.

Second photograph kindly taken by Lesley Gardner, research administrator, UoE.

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