

Understanding the Careers Expectations of STEMM PhD students roundtable

20th June 2014, Manchester Conference Centre, Cotton Room

Introduction

The Royal Society brought together a group of STEMM PhD students representing a range of universities from across the UK to discuss the issue of managing STEMM PhD students' careers expectations.

There are more STEMM PhD students now in the UK than ever before and they go onto a diverse range of careers in and outside of academia and science. There is the perception that leaving academia is a failure but as only a minority can continue onto post-doctorate positions, students need to understand that they have achieved a good qualification and that they have the skills to go onto do a range of careers. It is also acknowledged that many HEIs already provide many aspects of the recommended responsibilities but that this is not uniform across the sector.

The format of the meeting was break out groups followed by a plenary discussion. Each of the breakout groups saw extensive and interesting discussions, and this continued on into the plenary. The key points from which have been set out below thematically.

Overarching

A large minority of PhD students in the UK are from outside the UK, and the issue of retaining talent in the UK was highlighted by the students. Those who are from an EU member state are more able to find careers in the UK, but many companies are reticent to engage in visas or work permits for students from outside the EU. Despite having a year after finishing their PhD some say that there are structural barriers to working in the UK.

Students

There was great variation amongst students on when they started thinking about the next steps after their PhD. Many did not even consider careers until their final year of study, whereas conversely some were focused on an academic career from the very beginning of their studies. Those in engineering subjects were much more likely to have contact and opportunities to interact with or have awareness of industry and companies.

There was general agreement that PhD students themselves should take some responsibility to proactively go to their University's Careers Service for advice. They should attend training sessions and take opportunities to get experience teaching particularly if they want to continue a career in academia. However, it was felt that there is uneven coverage amongst universities in providing suitable and nuanced services for PhD students. In some universities there was the impression that the careers services were mainly geared towards undergraduates and careers fairs in many cases did not have employers who were able to differentiate between undergraduate and PhD qualified students in their recruitment processes.

Students would welcome Postgraduate careers fairs in universities, and in those instances where PhD alumni gave careers talks to Postgraduate students this was seen as one of the best and most useful ways to help guide and give advice to students. Additionally students thought that providing a national service for advice would be incredibly helpful in guiding their career search.

Supervisors

Supervisors were often seen as the first point of contact for students and commonly give advice about post doc positions for students, but only some supervisors do discuss next steps with students. Sparking this discussion on a regular basis would be useful to them as it will keep the student open to thinking about careers. One method that is already used for this in some universities is to embed it in review forms, but this is sometimes a passive process of the student filling out the boxes and they are often non-specific and formulaic and lead to repetitive answers.

It was thought that ideally supervisors would act as signposts to careers advice and networks, as it was understood that supervisors are variable in their experience and will not necessarily be able to tell students about a range of careers.

Universities

It was thought that many universities have policies or structures in place to get PhD students thinking about career destinations, and considering their next steps. Some have forms or websites for student development, and some supervisors annually discuss the topic with their students but one of the pervading impressions was that this coverage and assistance is uneven amongst HEIs.

The main form of help students wanted from their institutions was access to information and signposting, with additional structural or systematic reminders and guidance in order to direct them to these things. At the moment there are many incentives such as league tables for HEIs to provide assistance and track undergraduate employment rates, but that the equivalent does not exist for postgraduate students. It was felt that if there were this may act as an incentive for HEIs. Importantly, greater transparency of information and examples by universities about the types of destinations which PhD alumni have gone onto do would be a springboard to thinking about careers for current or future students.

Students wanted departments and faculties to aim to work in a more coordinated fashion with careers services to provide PhD specific information and events. In some universities there were already talks on the academic and non-academic route, and in other there were discipline specific events, which were seen as one excellent example.

There was discussion about how BBSRC funded PhD students now have a 3 month internship build into their PhD with additional funding to cover that time. Students from other disciplines thought that it was an excellent idea, even if you knew you wished to continue your career in academia. Most students at the roundtable would want the opportunity to do internships if given extra time and funding built in from the beginning of a PhD. However, it was thought that many supervisors would not allow or perhaps welcome unexpected breaks in a students' projected completion date unless expected to do so, as it would not fit into the 4 years submission to the Research Excellence Framework.

It was accepted that students are not always able to articulate the range of skills they are acquiring throughout their PhD, and some even suggested that rather than focusing on transferable skills employers would find understanding of business management and accounting skills more valuable, and that HEIs might consider offering those to students.

Careers services

The students who attended had mixed experiences with their respective university's careers services; some were excellent, specialised and incredibly helpful and others were not always equipped to give advice or guidance to PhD students particularly in some areas of STEMM. It was felt that careers services were much more set up to be equipped to engage with undergraduate students.

Department or discipline level careers events, like at Manchester University, at least on an annual basis were seen as an ideal way to expose students to careers advice and options. It was thought that talks by Alumni or industry specially aimed at PhD students would be particularly appealing to students. At Liverpool University they encourage the use of Vitae's North-West website which has a set of good examples of careers.

A key part of thinking around careers advice for students is building the topic into their PhD through their General Development Plan, which in some cases it is but in others is entirely focused on academic skills. Utilising this as a way to record all skills and training would serve them well when writing CVs for academic and non-academic jobs.

Industry

A couple of points were aimed at how industry could better engage with PhD student employment to their benefit. It was agreed that there is an issue (whether perceived or actual) of PhD graduates being over qualified and having trouble gaining entry to companies. It was acknowledged that some industries have differentiated entry level points and do recognise a PhD skillset, but many do not. Despite this, once a person got a position in a company they may rise quicker in it than those without a PhD.

It was understood that recruitment is expensive for companies and that there are not as many PhD students as undergraduate so the students would welcome universities combining to provide PG careers fairs to make it more economical for industry. However, it was thought that jobs for PhD qualified students are London centric – there was a perceived country brain-drain, and it is expensive to attend meetings in London and difficult to find opportunities outside the golden triangle (London, Oxford, Cambridge).

Understanding the Careers Expectations of STEM PhD Students roundtable

To be held at the Manchester Conference Centre, on 20th June 2014 at 12:00-14:00. This meeting will be co-Chaired by Prof Steve Furber FRS and Prof Niall MacKay both members of the Royal Society's Higher Education Steering Group.

This meeting will bring together 25-30 people representing universities from a range of locations, and from different sizes and types of university. Lunch will be provided.

Agenda

Time	Agenda Item	Aim
11:45-	Refreshments available	
12:00-12:10	Introduction to the topic	To introduce: <ul style="list-style-type: none"> the background to the Royal Society work that the aims of the meeting are to garner views from PhD students on how best to help manage their careers expectations, and how the outputs of the meetings will be used to inform Royal Society work in this area.
12:10-12:20	Introductions of participants	The participants will be asked to introduce themselves: giving their name, and research area if appropriate.
12:20-13:05	Breakout Group work Groups of around ten people will be facilitated by a Royal Society Steering Group member.	These breakout sessions will be smaller groups aimed to get all participants discussing the issues and contributing on: <ul style="list-style-type: none"> Do you as STEM PhD students have realistic careers expectations? What challenges do you face as a PhD student in understanding your options at the end of a PhD? How does your university help? What should best practise in this area look like? A member from each breakout group will then feedback the key conclusions of their group's discussions in the plenary session.
13:05-13:50	Plenary	The plenary will bring the groups back together to discuss the points raised in group discussions to see if there is consensus and to answer: <ul style="list-style-type: none"> What role should HEIs and supervisors play in managing the careers expectations of STEM PhD students?
13:50-14:00	Concluding remarks	These will be given by the Steve and Niall of the meeting summing up: <ul style="list-style-type: none"> the issues that came out of the meeting providing information to reiterate how the meeting will inform the RS' work, and thank the participants for their valuable contributions.

Participants

Name	Discipline	University
Amal Abuzeinab	Built Environment	University of Salford
Abdullah Alnajem	Computer Science	University of Manchester
Stephanie Baldwin	Life Sciences	University of Liverpool
Aleksandra Borisova	Chemistry	University of York
Maria Copeland	Computer Science	University of Manchester
Catherine Diamond	Neuroscience and Immunology	University of Manchester
Bin Dong	Fossil Energy Technologies	University of Nottingham
Edward Eden	Chemistry	University of Liverpool
Josephine Gunns	Mathematics	University of York
Sam Harrison	Physics	Lancaster University
Jevgenijs Kitajevs	Materials Science and Engineering	University of Manchester
Annunziata Lopiccolo	Synthetic Biology	University of Newcastle
Jorge Montfort-Gardeazabal	Molecular Microbiology	University of Nottingham
Abdulkarim Oloyede	Electronics	University of York
Matthew Piasecki	Cognitive Motor Function	Manchester Metropolitan University
Louise Reynolds	Evolution	University of Liverpool
Zoe Rose	Chemistry	University of Nottingham
Sohail Siadatnejad	Neuroscience	University of Manchester
Qian Wang	Engineering	University of Nottingham
Xiaou Xu	Genetics	University of Nottingham
Shaoqiong Yang	Fluid Mechanics	University of Nottingham

Chairs

Prof Steve Furber FRS	Computer Engineering	University of Manchester
Dr Niall MacKay	Mathematics	University of York

Staff

Caroline Dynes	Policy Adviser	Royal Society
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