

Talented emerging scientist... Joe Swift



1. Describe your research & the program/lab that you are in?

I am a third year BBSRC David Phillips Fellow with a laboratory in the Wellcome Centre for Cell-Matrix Research. My lab is broadly interested in the study of 'mechanobiology' – how biological processes influence and are in turn influenced by the mechanical characteristics of their environments (such as the local tissue stiffness). We examine the pathways that enable cells to probe and react to the properties of their surroundings. Sometimes cellular environments can be physically demanding, such as in actively deforming tissues like muscle or heart. We are particularly interested in how healthy cells manage this mechanical stress, and how stress management processes can go wrong in disease and ageing.

2. How did you become interested in research relating to your area?

My formal scientific training – undergraduate degree and PhD – was in chemistry, but a post-doctoral appointment with Professor Dennis Discher at the University of Pennsylvania gave me an opportunity to learn some cell biology and biophysics. I was initially hired as a post-doc to develop mass spectrometry proteomics methods (a tenuous link to a PhD in protein engineering), but I also became interested in how mechanical signals influence the cell nucleus. My laboratory in Manchester now continues to work with proteomics, and we examine how mechanical conditions influence cells as a source of 'stress', and in particular how this could contribute to pathology.

3. What makes you unique – why, of all applicants, do you think YOU got funded?

I think my application had a strong interdisciplinary element, which the BBSRC appreciate, and I had a good record of publishing. I don't think applications for Fellowships need to be overly fixated on uniqueness: originality needs to be balanced by a strong probability of success (or a plan of contingency). The proposed work must be compatible with your strengths, be timely, be of interest and relevance to a wide audience and be matched to the current targets of the funding body.

4. How important is the presentation aspect of an application for Fellowship funding?

Following the initial application, the BBSRC invite shortlisted candidates to interview. The interview consists of a ten minute presentation, followed by twenty minutes of questioning from the Fellowship panel, typically informed by expert reviews of the proposal. The presentation is very important as it is the part of the process that you have most control over, giving opportunity to emphasise the strengths of your application. But ten minutes is a very short period and the time limit is strictly enforced! I would

therefore recommend as much practice as possible, and ideally a few mock interviews in preparation for the real one.

5. How important is the host institute to the success of a Fellowship project?

The choice of institution to host a Fellowship is very important, and I would recommend researching it carefully. It is essential to have excellent co-workers and potential collaborators, to have access to the equipment and facilities to enable the research, and to be able to attract great students and staff. It is also very important, I think, that the host institution demonstrates commitment to support the success of the Fellow.

6. Describe your proudest moment in science so far.

My proudest moments have been in watching members of my group give talks at conferences. I'm a nervous public speaker, and have found that I can get phantom nerves on behalf of my team as well... but they have always been brilliant!

7. Where is your biggest stress at this stage of your career?

I don't think being a post-doc prepares you for quite how much writing this job involves! Writing papers is only a small component of this, and probably the most satisfying part. Grant writing can be exciting, but you have to work with the understanding that the majority of your (best) ideas will not be funded. Whole weeks can be wasted answering e-mails, filling in forms, progress reports, questionnaires, summaries, reviews, feedback on things... you need to be disciplined and systematic to keep on top of your time. And don't feel bad about saying 'no' occasionally!

8. What area(s) do you wish to specialise in in the future?

I would like to build a programme of research recognised for increasing understanding of the mechanobiology of ageing processes. This is a research niche that brings together the lab's interests in cell biology and biophysics, is an excellent application of our expertise in -omics analyses, and ultimately has great potential to benefit society. I'm also excited to be starting a new programme of research examining the influence of the extracellular matrix on cancer risk and progression.

9. What would be your advice for talented emerging scientists?

Get as much help and support as possible from friends, peers and colleagues. Good science shouldn't be a competition, or performed under unmanageable pressure. A career in academia probably won't make you rich or famous, but it should be rewarding and enjoyable (I've even heard it described as 'fun'). Don't lose sight of this goal!

