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How to transition from 'early career' to 'established'

PhDs, postdocs, fellows and newly appointed lecturers all fall into the category of early-career researchers (ECRs). The life of researchers in early stages of their career is far from straightforward. Funding is a huge barrier for many ECRs looking to make the next step in their career, but it's not the only challenge. It is important that we recognize, support and reward their development. This feature sees ECRs at different stages discuss their experiences and tips for success.

Meet the researchers

Liam Heaney, Lecturer in Exercise Metabolomics at Loughborough University (UK). Liam's research focusses on the measurement of small-molecule metabolites using mass spectrometry across multiple disciplines including clinical biomarkers, nutritional and physiological interventions, and sports anti-doping monitoring.

Adam Chun Nin Wong, Assistant Professor in the Entomology and Nematology Department at the University of Florida (FL, USA). Adam's research focusses on host-microbe interactions.

Catherine Martel, Assistant Professor in the Department of Medicine at Université de Montréal (QC, Canada). Catherine is also Director of the Laboratory of Lymphatics and Cardiovascular Medicine at the Montreal Heart Institute.

Catherine M Rawlins, PhD in Chemistry and Chemical Biology from Northeastern University (MA, USA). Catherine will soon start a postdoc position at the Université de Bordeaux (France) focusing on the proteomic analysis of cultural heritage samples. Currently, she serves as the Chair of the Conference Presence Committee for the International Younger Chemists Network (IYCN).

What are the biggest barriers preventing early-career researchers making the next step in their career?

LH: Perhaps the biggest barrier is finding the right job for you. It's all very well being skilled

or interested in a topic, but if the job opportunities don't arise then there isn't much you can do to get your 'dream' job at that time.

My only advice on this is to be patient and wait for the right position to be advertised. The important thing is to maintain a continual progression by increasing your skill set, publications and funding wherever possible. Most employers will be looking to hire enthusiastic and committed early-career researchers (ECRs) and not necessarily those who have got by through the success of a senior – a good mix of both of these is the perfect approach.

AW: For postdocs, securing a faculty position is challenging because academia is highly selective and there is an oversupply of talented graduates. Much of postdoc training is fixated on academia with limited exposure to diverse career options. I think there are now incentives to better align postdoc training with skills that are highly needed in today's job market (e.g. data science, teaching and other soft skills), but more work (and funding) is needed to promote broader postdoc training.

CM: Unfortunately, with the ever-increasing competitiveness for funding worldwide, ECRs are often discouraged, and think they cannot make it 'against' the big players in their fields. They even often see their own former research directors struggling to get research money, and are afraid that all the effort they put in upfront won't pay off in the end.

Job instability is also a big issue in several countries. Thus, the first position an ►

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► ECR can get after their training is often nontenured, which means they can lose their job if they do not get research funds. Because of all these reasons, many postdoctoral fellows often feel hopeless.

CR: Not getting out of the lab enough and learning to network. I see it a lot among my peers in graduate school; they spend so much time working that they do not have any job skills for when they are ready to defend their PhD. It is a common symptom of graduate school and many are afraid to stand up to their advisors when they need a break to attend professional development activities or just recover from illness. Networking and socializing professionally gets easier the more you do it. Don't underestimate those skills.

In graduate school, I volunteered a lot for my local section of the American Chemical Society and it was the best decision I ever made. I was able to network with professionals in my field on a regular basis and build upon my skills (public speaking, grant writing, organizing conferences/symposia, etc.), which prepared me for the next step in my career.

Describe the most difficult challenge you have faced as an ECR and how you overcame it

LH: The most difficult challenge I have faced was the hostile treatment I received from seniors following my decision to gain an academic promotion and transition to a new institution. This created a lot of stress and caused relationships to deteriorate. I overcame this by reaffirming to myself that I had the ability to push myself further and climb the academic ladder.

I now find myself in an exciting position with the ability to build my own research portfolio with new collaborations. You need to have faith in your own ability, but be careful not to overrate it to make sure you make the right decisions at the right time!

AW: Throughout my training I have worked with many great mentors and collaborators, who are now my close friends and allies. I consider myself very fortunate, except for one time when I had a difficult mentor relationship. As an ECR, I realized it is critically important to work with colleagues who invest in building confidence and passion within you to build self-accountability, rather than holding you accountable constantly. My strategy was to reach out to other faculty for advice, identify sources of problems and have open discussions. By building a supportive network of researchers, I was empowered by their encouragements and even technical help to complete the projects and move on.

CM: One of the most difficult challenges an ECR can face is the pressure that they have to

"do not think that you have to tolerate inappropriate and toxic behavior in your lab in order to be successful."

be successful on different fronts. Many research centers are affiliated to universities, and they will thus require that the ECR gives a minimum amount of time for teaching. In order to be eligible for a tenured track or a promotion, the ECR will need to demonstrate that they are, or can become, a leader in their field (as reflected by the number/quality of publications early in their career as an independent scientist and their involvement in international consortiums/duties). They should also be involved in the administration of their university or research establishment, and devoted to teaching. Albeit trained in science, we need to develop several other aptitudes and tricks to be able to manage all this.

CR: At the beginning of my PhD I was being harassed by an older postdoc but I was too scared to report it to anyone because I didn't want to lose my position in the lab. I put up with the harassment for more than a year before I decided to do something about it. It was one of the hardest and most stressful periods of my life.

Looking back, I am glad that I had the courage to report him and my only regret

is not doing it sooner. I sought guidance in trusted female colleagues and the university was able to handle the case well so that I was able to continue my studies. If you find yourself in this situation, do not think that you have to tolerate inappropriate and toxic behavior in your lab in order to be successful. Take care of yourself and your safety!

What tips do you have for ECRs transitioning from early career to established?

LH: It is really important to learn from others and make sure that you have connections with senior/successful researchers who have a clear interest in providing advice to ECRs. There is a naivety in getting a new position as an academic researcher that brings about more disappointments than you would realize, and so to have a friendly face to tell you that it happens to everybody and to see that they have become established despite the 'bad times' is really helpful in maintaining confidence.

AW: There was a saying that "great minds beat good real estate"; I want to add that great colleagues and collaborators are just as important in research. For PhD students and postdocs, choose your mentors carefully, do thorough research on the Principal Investigator and lab before you decide. Also, be proactive in connecting with people in your field. You may be surprised but some of the most successful scientists I have met are also the most generous scientists. Finally, grab every opportunity to give talks.

CM: One needs to be aware that being a research scientist is not a 9 to 5 job. We need to be devoted to our work, to do it with passion. No passion, no efficient science.

CR: I am still transitioning from graduate school into a postdoc position so my perspective is limited here. I highly recommend reading *"The Professor is In"* by Karen Kelsky; whether you are planning to be an academic or not, this book was extremely helpful in my search for a job. It is an honest and straight-forward guide that helps you look within and figure out what your strengths and weaknesses are and what is potentially holding you back.

What can ECRs do to maximize their chances of a long and successful research career?

LH: I believe that this cannot be done in isolation, but through the combined strength of others. Find collaborators who you get on well with and plan projects that provide clear outcomes for all parties. This will provide you with increased research outputs along with opportunities for funding applications, without the need for you to deviate from your own specialist knowledge in a manner that is going to dilute your skills.

Of course, it is extremely important to generate first/senior author research articles, but to have these as well as being included on collaborators' work for small commitments will not only bolster your own research but also improve that of your collaborators. It also opens others up to offering their skills to add additional rigor to research that you are leading.

CM: It is a tough career, but satisfying when you do feel that your research can make a difference. If you ever feel stressed or overwhelmed, tell yourself that most scientists, if not all, go through that. Do not hesitate to share your fears with your colleagues, and ask for help, either from a professional or a personal point of view. Most importantly, keep it balanced. Don't get drowned by your work. Your work is important, but your family, your kids, should be your priority. Time flies so quickly; enjoy the here-and-now of life.

CR: Don't be afraid to seek a mental health professional if your career is weighing you down; as scientists (especially if you're in academia) we can become so focused on our work that we lose ourselves. You are still a human outside of your job so take care of your health, your family and your happiness

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