

Hear it through the grape

Dominic M Bowman and the ECN Committee share their perspective of the RAS Early Career Network's first career event: postdoctoral career advice from the community.



"Don't put too much pressure on yourself. Make the right decisions for you and your circumstances, and don't feel guilty about turning down something not right for you"

Panellist **Jasmine Kaur Sandhu** is a researcher at Northumbria University, where she studies radiation belt dynamics of the Earth. Jasmine completed her PhD in space plasma physics at the University of Leicester in 2016, and was previously a postdoc at the Mullard Space Science Laboratory, University College London.



"Don't shy away from applying for RAS and other travel grants to fund short trips. They are great CV material and have a high success rate for ECR applicants!"

Panellist **Claire Nichols** is an associate professor in planetary geology at Oxford. Before starting her current role in 2020, Claire completed her PhD at Cambridge in Earth sciences in 2017, specializing in meteorite magnetism, then moved across the Atlantic to become a Simons Collaboration on the Origins of Life (SCOL) postdoctoral fellow at MIT, investigating the earliest evidence for Earth's magnetic field and its role in habitability.

It can be a daunting task to navigate on to the next stage of your career after your PhD. That's why the Early Career Network (ECN) of the RAS organized an online event titled "Finding your first postdoctoral role". The discussion revealed several myths that circulate among early-career researchers (ECRs), but a panel of experts was able to dispel doubt and offer practical advice on how to negotiate the postdoc job market.

Held on 30 April 2021 and chaired by the ECN's Fred Richards, the panel included four ECRs who offered an honest perspective for those who may be following in their footsteps. There were more than 90 participants from across the world, asking dozens of questions on a variety of topics. The event was so successful that the audience did not want to leave when the hour was up, so it was extended by 30 minutes.

Four main themes emerged from the discussion: the advantages of mobility and networking; the importance of building your CV; your own personal circumstances; and the job application itself. The ECN committee presents a synopsis here, but it does not reflect the views or opinions of any one person or the RAS.

Mobility and networking

When applying for jobs in another country, it is important to weigh up the advantages and disadvantages. This can be tough because it depends on the country, but also on your personal circumstances. Moving to a different country for a postdoc is often viewed positively, because it shows independence from your PhD supervisor and allows you to expand your research network. It also gives you access to additional funding opportunities and makes you more competitive in an increasingly global world. Another advantage is that mobility allows you to seize opportunities that may not come along so often. For example, faculty jobs are rare in academia and you have a greater chance of obtaining one if you have a track record of international mobility.

On the other hand, international mobility often increases social isolation in your personal life, at least in the short term, because you lose access to nearby friends

and family. Time zone differences can make it more difficult to stay in contact with others, and potential language and cultural barriers can make social integration difficult. Universities typically have programmes to integrate new PhD students, professionally and socially, but similar programmes are usually lacking for incoming international postdocs. Some countries have different work cultures from what you experienced as a PhD student.

The most important advice when moving abroad is to make yourself aware of the work culture of a particular research group. Perhaps some institutions are considered to be highly prestigious, but this may be at the expense of postdocs having a poor work-life balance. As a new postdoc, do not be afraid to be honest with yourself on what you expect from a job. Remember that your personal life and mental health are more important than your career.

Networking is a key aspect of success as a researcher. It is impossible to be an expert in everything, so you need to develop a network of collaborators to share ideas and build your reputation. Joining relevant consortia is also desirable. In recent months, the Covid-19 pandemic has severely impacted opportunities for ECRs to develop their research networks and this, unfortunately, will continue as we slowly return to some sort of normal. Attempts to mitigate the impact of Covid-19 have yielded a mixed response because of the overwhelming scale of the pandemic. If you feel like you are stuck at home then do not underestimate the importance of reaching out to collaborators. There is often a perceived barrier among ECRs to emailing more senior researchers to discuss research. "What if I say something stupid?" is a common worry. In most cases, researchers are more than happy to discuss science with you.

There are mixed feelings on using social media to promote your research. Obvious advantages include a larger impact and global outreach compared to word of mouth. Not everyone checks arXiv every day, but most people check Facebook or Twitter. However, greater exposure inevitably involves more work in keeping your followers updated. Practical advice includes making a work-only



“Don’t choose something because it seems more prestigious. There is no such thing as a perfect candidate, so do not think you are unqualified. If it sounds exciting then go for it”

Panelist **Sebastian Kamann** finished his PhD in 2013 at the Leibniz Institute for Astrophysics in Potsdam, Germany. After a postdoc at the University of Göttingen, he moved to the UK in 2017 and joined the Astrophysics Research Institute of Liverpool John Moores University. In 2020, he was awarded a UKRI Future Leaders Fellowship. His research interests are massive star clusters, stellar kinematics and the search for black holes.



“Be prepared to go with the flow as applying for postdocs is a numbers game. Always consider the place, the people and environment, not just the job, to be successful”

Panelist **Sarah White** first started research in radio astronomy at the University of Cambridge, then used it to study quasars for her PhD at the University of Oxford. Her first postdoc was in Australia, where she conducted science at low radio frequencies, and in 2018 she started a SARAO postdoctoral fellowship in South Africa, using MeerKAT to research active galaxies.

Twitter account to maintain a clear separation between your work and social life. Social media can be addictive and it is important to be wary of it becoming a distraction.

Building your CV

Continuous professional development is an ongoing consideration for all academics. A common myth is that you only need to update your CV when you are applying for your next job. In reality, however, you should be constantly thinking how to improve your CV and make it stand out from the crowd. One consideration is to diversify the projects that you work on. International mobility and developing new skills are also valuable additions to your CV.

Some wonder if staying at the same institution for a postdoc as your PhD is seen as a negative, but what is more important is that you show independence from your PhD supervisor. For example, recipients of prestigious grants – such as ERC Starting Grants (worth more than €1.5million!) – have a track record of publications without their PhD supervisor. It can be easy to fall into old habits and keep working with your supervisor if you stay at the same institution. So if you do stay, expand your research network and start new projects with external collaborators. Discuss how best to accomplish this with peers in your field. What projects are available and how can you contribute? Your supervisor should also want you to become independent and can offer useful guidance.

Learning new skills and starting new projects provide great material for your CV, but they come with increased risks and challenges. A possible issue for a new postdoc is to do a “second PhD” as their first postdoc, such that they are forced to learn a completely new set of skills for the new project, which takes a toll on their publication track record. Sometimes this is an advantage and sometimes it’s not. The best advice is to discuss this with your supervisor and agree on a clear timeline with milestones that benefit your career. You always need to balance your priorities between working on your current projects and starting new ones. Be aware of the potential traps; making a strategic plan to prioritize tasks should be the goal.

Having tangible evidence of obtaining competitive

research funding is often overlooked among ECRs. If you have written a successful application for funding (no matter how large or small), it is important to highlight it on your CV. Unfortunately, there is no comprehensive list of possible funding sources, so there is some effort required for applicants to find the guidelines. Not everyone makes this effort, which is why successful funding applications are valuable CV material. An excellent opportunity available to RAS Fellows are the RAS travel grants. The success rate for ECRs who obtain matched funding is high and the application does not take too much effort.

Additional CV material includes the “extracurricular activities” that come hand-in-hand with research, such as outreach, committee service and teaching. These activities demonstrate your independence and a more well-rounded set of skills. Do not underestimate how often ECRs underplay their own achievements. If you have evidence of these activities then say so explicitly: they are assets! But as with job applications, these activities can become time-management issues. Some postdocs have to comply with time sheets restricting the maximum amount of time on them. The trick is to train yourself to become time-efficient in these tasks.

Personal considerations

One of the greatest challenges for postdocs is balancing their professional and personal lives. Everyone has felt unnecessary pressure at some point to work during the weekend, stay late during the week, or take on extra duties, for all sorts of reasons. It is important to recognize that pressure not only comes from above, but also from competition among your peers. Many postdocs are concerned about job insecurity, short contracts and time pressure when applying for jobs, which leads to both internal and external competition.

No career decisions are independent of your personal circumstances. Physical and mental health, childcare and living expenses are all factors that influence how you shape your academic career. Some of the biggest factors that define the infamous “leaky pipe” of academia include the two-body problem and childcare, with women

“You should be constantly thinking how to improve your CV and make it stand out from the crowd”

compromising or even sacrificing their career more frequently than men ([nature.com/articles/s41559-018-0747-4](https://www.nature.com/articles/s41559-018-0747-4)). Whatever your circumstances, it is important that your concerns and requirements are met in a professional and kind way. Speak to Human Resources at your institution about the services available to you; it is also always a good idea to approach others in the research group who may have similar circumstances.

The consensus among more senior postdocs advising junior postdocs and PhD students is to not let yourself be taken for granted. It can happen quite easily, regardless of whether you view yourself as a “good” or “bad” student, when tasks tend to be dumped on you because “you can handle it” or “you need the practice”, respectively. Sage advice is to avoid doing work for others based only on a promise of a possible co-authorship at some point in the distant future. Be honest with yourself, and decide whether tasks are beneficial for you at that given moment. If not, then be confident and politely turn them down.

Peer pressure and job stress in general are also important concerns. The poor work-life balance of postdocs are worn as “badges of honour” at some universities, which can create significant peer pressure to sacrifice personal life in favour of career. Comments such as “if you are not aiming for publishing in *Science* or *Nature*, then what’s the point?” are frequently traded by postdocs around the water cooler. Personality plays a big role in this.

What about the things the event’s panelists wished they had done differently? You may spend a lot of time writing an impressive piece of code or conducting a ground-breaking experiment, but if you do not engage with the wider community by attending conferences, doing outreach and writing papers, no-one will find out about it. Maybe someone out there has a simple fix to the bug in your code, or maybe someone has a time-saving piece of equipment you can borrow. Most senior postdocs wish they had done more networking earlier in their career. Because of imposter syndrome, it is common for ECRs to convince themselves that networking is a waste of time and be too narrow-minded in their scope.

One of the factors that postdocs often have zero control over is their salary. Because of the culture of ECRs feeling guilty if they turn down a job offer, and because there is a huge range of salaries around the world, postdocs tend to be quite cagey about discussing salaries with one another. In some places, salaries are set by the government, in others they are negotiable. Do not shy away from asking questions about money. If you are moving to a new institution, the employer should be able to provide you with an indicative salary and how taxes are calculated. This is essential information for when you search for housing, childcare or transportation. If you do not ask, you will be blind to living costs that may only appear after you’ve made the move.

Applying for jobs

Academia is a very competitive environment and only a minority of PhD graduates eventually obtain a tenured faculty position ([nature.com/articles/528022a](https://www.nature.com/articles/528022a)). At face value, this might seem extremely demotivating, but not everyone wants to continue as a postdoc. If academia is the career for you, then it takes preparation and perseverance to succeed. Such an uphill climb begs the question: how often does a postdoc think about quitting and getting a “real” job? An honest answer would be: every single day. Be true to yourself, and invest time in deciding if this is what you want for your career. Most postdocs constantly weigh up leaving academia throughout their career. If you do decide that academia is not for you, then this is not a failure. Many PhD graduates go on

to successful and well-paid careers outside academia. There is no need to be a martyr and continue doing a job that does not make you happy. Good supervisors may be sad to see you go because you are part of their legacy; they are only human after all. It’s only a job, so do not feel guilty about wanting to do something else.

Today there is a greater appreciation that the boundary between industry and academia is artificial, with these sectors moving ever closer together. Leaving academia is perhaps an archaic description for a natural career path that lies within both sectors. Research outside of academia is feasible. For example, in the case of astronomy, professional telescopes and observatories require support astronomers to collect scientific data. These paid positions typically allow you to continue research in parallel with your responsibilities. If this is appealing, then check out the IAC student exchange programme, which comes highly recommended (ing.iac.es/astronomy/science/studentship.html).

Timing

If you do pursue academia as a career, you must realize that not all postdoc jobs will be equally interesting to you, not all of them are advertised at the same time and they don’t have the same starting dates. You can afford to be selective if you plan ahead. The last six months of your PhD is a good time to start applying, as it will give you the chance to fail and improve. If you think that you are underqualified for a postdoc position, then discuss it with your supervisor. You can also contact the supervisor of the postdoc position and ask for honest feedback on your eligibility. They should not take such an inquisitive email badly, but if they do then you learn something about what working with them might be like when you ask for help. Contacting a prospective supervisor may even give you an advantage should you later choose to apply.

Most postdocs start to apply for faculty positions during their second or third postdoc, but that does not mean that it is impossible to secure one earlier. It is a numbers game, with some postdocs submitting 10 applications and others submitting 100. The advantage of applying early for positions that you seem underqualified for is that it is practice for the future. Once you have your application material together, you can reuse it in multiple applications, developing, updating and improving it as you progress.

When filtering your options, it helps to check if the supervisor is active in research. Do they have a track record of publishing first-author peer-reviewed papers? Do they include their PhD students and postdocs? Are PhD students and postdocs also publishing first-author peer-reviewed publications? A quick search provides insight of productivity and collaboration within the research group and how you might fit into it. Furthermore, you can check a potential supervisor’s CV and see how often their current PhD students and postdocs stay in academia, what jobs they move on to and their roles within larger consortia. If you are motivated to succeed then the environment should match your expectations.

Most importantly, do not be afraid of rejection. The postdoc job market is incredibly competitive, with only a minority of PhD students securing a permanent position after a postdoc. So preparation and practice are key. Do not take feedback on unsuccessful applications personally, but use it to improve for next time. If you do not get feedback then ask for it, because it helps to identify weaknesses and make you a stronger candidate next time.

The ECN committee is planning future careers events, including an industry-focused careers event during NAM2021, and is committed to helping provide a sustainable support network for ECRs for years to come. ●

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