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# Kick-start your career: internships and placements

Leaving university and applying for jobs can be a difficult time for all graduates. Where do I start looking? How do I know whether it's the right job for me? How can I stand out from the crowd? Relevant work experience can help you make these important decisions after your degree, and an internship is the great way to do this. It not only allows you to gain valuable skills, but also takes you a step closer to understanding what sort of job is right for you. Internships are normally long enough for you to work on specific projects, compared with shorter work experience periods.

## Gain the edge in the job market

Employers are concerned not only with your qualifications, but also with any relevant experience you have gained. Internships and placements provide employers with evidence that you have the right skills for the job, such as initiative, enthusiasm, strong organization skills, a good work ethic and experience working in a professional environment. It also shows that you will make a good transition from student to employee. Therefore any work experience, in particular internships, makes a potentially vital addition to your CV. In many of the more competitive job markets, this is essential to set you apart from the others.

Internships also are a great way to meet people in your field. Making connections with the right people can lead to future collaborations and perhaps help you to land a job later.

## Where to start?

First, you need to decide in which area you would like to gain some experience and explore the options available. Remember, you don't have to just stick to one – the more work experience you have on your CV, the better. Placements can last anything from 2 weeks to 6 months or more, so you can fit them around your university holidays and studies.

A good place to start is to talk to your university careers service. They may have links to local companies that provide work experience placements or summer internships. Another option is to send speculative emails directly to the human resources departments of companies and institutions to see if they can place you somewhere.

Next, if it is laboratory experience you are looking for, do some research into the placements

that pharmaceutical companies can offer. Places such as AstraZeneca offer placements for students for anything from a summer placement to up to a year long internship. [www.naturejobs.com](http://www.naturejobs.com) also has an extensive online jobs section which advertises science internships.

While contacting potential institutions and companies, it is important that your CV is up to date and effectively selling your skills. For tips on creating a good CV, see [www.biochemistry.org/Education/Careers/Highereducationandbeyond](http://www.biochemistry.org/Education/Careers/Highereducationandbeyond).

You can also sign up to receive email alerts when internships are available here at the Biochemical Society by visiting [www.biochemistry.org/Vacancies](http://www.biochemistry.org/Vacancies), and look out for job alerts in your student news membership emails.

## Volunteering

Depending on the area in which you would like to gain experience, there may be opportunities to volunteer. The benefits of volunteering can include flexible hours, shorter-term commitments and more variety. It may be that you are interested in science communication and outreach, in which case volunteering opportunities are often available at UK museums and science festivals. If you are interested in volunteering, see our activities library at [www.biochemistry.org/Grants/EducationalGrants/ScientificOutreachGrants](http://www.biochemistry.org/Grants/EducationalGrants/ScientificOutreachGrants) for helpful links.

## Biochemical Society Summer Vacation Studentships

Funding for summer placements is also available from some learned societies who provide grants for students to work in a lab, usually working on a



Jonathan Walklate at the University of Kent

specific project. The Biochemical Society runs such a scheme, where you can apply for stipends of £200 per week for 6–8 weeks, and up to £1600 in total.

In order to apply, you need to pair up with a potential supervisor and devise a project. The supervisor then applies for the grant on your behalf, with your input. More information about them can be found at [www.biochemistry.org/SummerVacationStudentships](http://www.biochemistry.org/SummerVacationStudentships).

The deadline for 2012 applications is 13 February 2012. For more information, please contact [education@biochemistry.org](mailto:education@biochemistry.org).

### Our 2011 Students

Read how some of the students from the 2011 Summer Vacation Studentship scheme found their experiences in the lab, with accounts from Jonathan Walklate who worked with Professor Mike Geeves at the University of Kent, Natalie Day who worked with Dr Alison Sinclair at the University of Sussex, Alice Johnson who worked with Dr Stefan Bagby at the University of Bath, and

Petros Stathakos who worked with Dr Nimesh Mody at the University of Aberdeen.

### “It’s been the best job I’ve had” – Jonathan Walklate

“To say that it was daunting entering the lab the first time is an understatement, considering that there were six other scientists in the lab at different points of their careers and a second group across the hall in close collaboration. However, within the first few hours, I was already feeling at home, everybody was incredibly kind and willing to help if I needed it. I was investigating modifications made to the stopped-flow machine to make it a more dynamic and efficient piece of equipment for studying fast reactions and, in my case, myosin binding to actin.

My first week probably ended a lot more successfully than most summer students’, having obtained results close to perfect and envied by a few in the lab. However, by the second week, I had learned the most important trait a research scientist must have: patience. Sometimes I would get results that would stump me and the postdocs, thinking them to be wrong, only to have my supervisor tell us they were fine. I feel that I have learned some valuable techniques as I did get a chance to make polyacrylamide gels, purify proteins, use the fast-phase liquid chromatography (FPLC) machine and, on one afternoon, freeze proteins with liquid nitrogen, but the hardest thing to overcome was the smell of the sample buffer used for gel electrophoresis, which, if I had to describe it, smelt like something has died in a lake of sulfur, and due to the amount of gels being run, the lab always smelled of it.

It’s not just the techniques that I’ve learned that I will take away from this experience. I have learned that you have to be passionate about science and willing to put up with a lot of inconclusive results, and persevere to obtain that elusive right answer. It has also taught me the importance of writing everything down, my lab book is just a mess of scribbles and glued-in graphs and the one gel that survived the drying process, the other looking like it was hit with a hammer.

I can only say that sometimes it was tough, and sometimes I didn’t feel it worth me trying only to fail, but, when it went right, all of that went away and made me realize why I want to be a research scientist, and I fully recommend that anyone thinking of research as a career should do a summer project. It’s been the best job I’ve had and I’ve worked with the best people I’ve ever worked with and I thank the Biochemical Society for making it happen.”

### “I can’t think of a single better way to have spent my summer” – Natalie Day

“When I started my studentship, I really had little clue of what life in a lab was actually like, what you did, how you went about doing it, or how you even knew where to start. Yes, I’d done practical work before as part of my degree, but it doesn’t prepare you at all. With the lab, you don’t turn up and find all the chemicals in front of you already, a lab script outlining exactly what you do and a partner by your side. Instead, I turned up to an empty bench with an empty lab book surrounded by people much more qualified and proficient than I am.

It was all rather daunting.

However now, I can’t think of a single better way to have spent my summer – and I wouldn’t want to trade this experience for *anything*.

My project was focused on identification of the replisome of Epstein–Barr virus (EBV). My task was to determine a specific method for binding the biotinylated DNA OriLyt fragments to paramagnetic streptavidin beads; adding nuclear extract from EBV-infected cells to these beads and then analysing which proteins bound. At the same time, the other lab members were kind enough to let me assist on their projects – so I had the chance to get involved with cell culture, site-directed mutagenesis and transformation of *E. coli*.

This means that, all in all, I gained a lot of experience with a vast array of practical procedures. And, although I’m yet to master PCR, I think everything I learnt has given me fundamental skills that will underpin all the work I will be doing in my final year and, looking beyond that, my career.

The experience has also helped to reinforce that research is where my heart lies; I can’t really imagine myself wanting to do anything else now. Although the project hasn’t been plain sailing and I’ve had days where I’ve walked away without any conclusive results – the days when something has worked make it all worth it.

I really can’t emphasize how useful this opportunity has been. Not only did I gather a lot of indispensable skills, but also I worked and become friends with people that I would never have had the chance to meet if it weren’t for the placement. I’ve grown both as a scientist and a person and for that, I can’t say thank you enough.”



Natalie Day at the University of Sussex

### “My confidence increased as the weeks fled by” – Alice Johnson

“Low expectations. That’s how I felt about my placement a few months ago. I’m almost ashamed to admit that now, because at present, my feelings are rather different.

At the age of 8, I believed that science consisted of bubbling tubes and colourful liquids that fizzed and popped. When I was 15, science became text books and plastic stools in cold boring classrooms. At the age of 18, my passion was reignited when my eyes were opened to exciting new research and my curiosity to discover the undiscovered was born. And so we come to the present, 20 years of age and studying microbiology and immunology at Newcastle University. However, I still had reservations regarding lab work, probably because I have done enough practical write-ups at university to drive me crazy! Consequently, I was uncertain about my approaching summer placement.

Fortunately, my concerns were unfounded. My experience at Bath University was very enjoyable and most definitely beneficial. I immediately felt right at home among the organized clutter (which reminded me of my room, although I’m sure ‘organized clutter’ would not be the words my mum would use to describe it...). It felt very different from the neat emptiness of a teaching lab. This cosy research lab was where I would spend the next 7 weeks.

My confidence increased as the weeks fled by. I acquired new skills and honed techniques I already knew. However, these experiments had the potential to become slightly repetitive. Luckily for me, the exciting prospect of what the research could lead to outweighed that danger and some promising results intensified my curiosity. Furthermore, I knew that what we were researching was incredibly important, with good results leading to possible cures for diseases such as cancer and Alzheimer’s disease.

Overall, the best part of my summer placement was the people I met. Mental images of socially shy geeks with shocking white static hair were soon dispelled. My supervisor and my colleagues were all extremely friendly and, above all else, they were inspirational and reminded me of exactly why I love this subject. Their lives have purpose and boy do they show it – not only were they very focused on their work, but they had fun doing it too! Therefore they somehow managed to dispel two of my previous beliefs: that lab work was boring, and that scientists themselves were dull. Sounds dramatic I know, but my lab placement has changed my life.”



Petros Stathakos at the University of Aberdeen

### “I felt for the first time like a real scientist” – Petros Stathakos

“After finishing my second year in a Neuroscience with Psychology degree at the University of Aberdeen, I was lucky enough to experience an 8-week laboratory placement under the supervision of Dr Mody, funded by the Biochemical Society. When Dr Mody told me that my application was successful, I was really pleased but not fully able to realize how extremely beneficial this experience could be. I am grateful to Biochemical Society for giving me the opportunity to work in an active laboratory, and gain knowledge and experience that could only be gained by practice.

During my degree, I have built up a scientific interest in obesity, Type 2 diabetes and their effects on the body’s biochemistry and nervous system functions. The project I was involved was the delineation of the role of protein tyrosine phosphatase 1B (PTP1B) in endoplasmic reticulum (ER) stress in liver and adipose tissue, part of a bigger project where liver- and adipose-PTP1B-deleted mice are used to investigate the role of PTP1B in ER stress and insulin resistance. In other words, we examined the role of PTP1B in the ER stress response, by silencing PTP1B, using small interfering RNA (siRNA), in human hepatic cells.

Unfortunately, 8 weeks were not enough time to present adequate results, but in terms of personal experience gained, these few weeks were tremendous! First of all, I feel much more confident in the laboratory. I had the opportunity to practise my techniques and to apply my knowledge acquired from the taught

lectures, as well as to learn new methods and to get involved with the latest technology. Additionally, I realize the importance of being a member of a laboratory team. All the time, someone was next to me to answer a question, to explain a procedure, to motivate me when I was mistaken and advising me with a new idea. Moreover, step by step, I earned the trust of my supervisor and the team, and they treated me as an equal member by discussing my ideas and my opinions. Finally, when I had my own results and had been asked to present them in the weekly lab meeting, the excitement was something indescribable! I felt for the first time like a real scientist, very proud and my efforts were vindicated, an unprecedented feeling that is definitely the highlight of this experience. Until then, research was only one of my many career aspirations. Now, after finishing this studentship, I feel that my future belongs to research.”

Nimesh Mody said about having Petros in the lab for the summer “Petros did really well in the lab, building on the short volunteer experience he gained last year. Unfortunately, experiments did not go to plan, so there was much disappointment and not enough time to troubleshoot the problems thoroughly. However, Petros gained a real insight into the ups and downs of daily laboratory research and how to communicate this to his colleagues using PowerPoint presentations” ■

If you think a Biochemical Society-funded summer placement is right for you, find out more information on criteria, how to apply, and more at [www.biochemistry.org/Grants/EducationalGrants](http://www.biochemistry.org/Grants/EducationalGrants)