A day in the life of a Senior Research Scientist

Jennina Taylor-Wells received a BSc in Biotechnology at Oxford Brookes University in 2008, followed by a PhD in Physiology. Her first job in 2013 was a postdoctoral position also at Oxford Brookes University, where she identified mutations in insect receptors, that were linked to insecticide resistance. Her interest in mosquitoes led her to the University of Florida in 2016. In Florida she investigated how insecticides elicit their action on mosquitoes, which provided her with a wider interest in vector control and public health. Jennina has since returned to the UK and now works in industry, continuing to research novel methods to control mosquitoes.

How did you get into science?
I have always been curious about how things work and the science behind it. As a child I was fascinated by the stories my dad told me about different types of bacteria, their funny names and shapes. I liked the idea and the challenge of studying a science degree and so I found myself on a Biotechnology BSc. This was a placement degree so included a year in industry, which provided valuable laboratory experience to subsequently apply for a PhD in Physiology.

Can you describe a typical day?
The beauty of a career in research is that every day is different. I may be planning a project, preparing for experiments or analysing results in the office, or in the laboratory rearing mosquitoes and conducting experiments. Working with insects is very different to my previous work in molecular biology or biochemistry. For a start they can bite! But luckily not often. Insect rearing requires constant observation and a good understanding of their biology and perfect rearing conditions. There are constant challenges associated with rearing insects that always keep you on your toes.

What’s the most interesting project you’ve worked on?
When I worked at the University of Florida, I investigated how insecticides elicited their action on mosquitoes and tested new chemistries. I used a technique called electrophysiology to investigate the mode of action – as the insecticide target site is often a receptor in the insect’s nervous system. Placing electrodes in the muscles of larvae that were no more than a centimeter was painstaking work and required a lot of practice, but I received immense satisfaction from making it work and watching the recordings of the electrical signals in real time.

What inspires you about your job?
I feel like I am making a difference with my research, it is what gets me out of bed each day. I also feel...
an immense sense of satisfaction from publishing my research and contributing my findings to the scientific community. I also love going to conferences, meeting other scientists and finding out about their research. Their enthusiasm and the fact that the field is constantly moving and evolving is inspiring.

What’s been the greatest challenge in your career so far?
Moving to the USA on my own to pursue a postdoctoral position was a big step and was really nerve-wracking. However, my professor and his wife made me feel really welcome in the lab and gave me lots of support to make the move. It turned out to be a fantastic experience and I encourage anyone who is interested in doing a PhD or postdoctoral position abroad to take the plunge. The move gave me an opportunity to conduct specialist research in a world-leading laboratory, make more connections in my field and experience the different cultures associated with working in another country. It is an opportunity not to be missed.

What is your advice for someone who would like to pursue a career as a Research Scientist?
Take every opportunity to obtain as much experience as possible early in your career, whether that is an internship, placement or short term contract. It helps you to decide about what field and aspects of research you like, and provides valuable experience that will make you stand out on a CV. Networking is also key! Talk to lots of people when you go to conferences, join relevant societies and take part in early career researcher events. You never know when those skills and contacts will come in handy.

Job Profile – Senior Research Scientist
A Senior Research Scientist works in a research laboratory on a specific project that typically lasts from 1 to 5 years. The job can be based in a university, hospital, specialist research institute or in industry.

Responsibilities
A Senior Research Scientist will often manage a research project, providing the opportunity to develop project management skills. They will plan the project and experiments, conduct the experiments, analyse results and write reports. They will also supervise junior members of the team and often ensure the smooth running of the lab. The role also requires the individual to keep abreast of the current research in their field and to present their research at relevant conferences or meetings, as well as write journal articles.

Qualifications and key skills
A PhD in a related discipline or BSc plus research experience is usually required for the role. Specific to the role will also be the required technical skills and/or research experience in the relevant field. Senior positions may require project management and/or leadership skills. General key skills include an ability to work independently and a self-driven approach to working, a flexible and adaptable attitude and good problem-solving skills. Good oral and written scientific communication skills are required for writing scientific documents and presenting at conferences.

Salary and career development
Salaries for Senior Research Scientists can depend heavily on your qualifications, experience and location, ranging from £25,000 to above £35,000. Career progression can be towards the managerial side or towards a Principal Scientist role.