

Name:

Sarah

Job title:

Research scientist, The Francis Crick Institute Mill Hill: Gene Manipulation Service

Career:

I studied double science at GCSE, then A levels in Biology, English and Psychology. I was advised to study chemistry but ignored this. There was a timetable clash between English and chemistry. Biology seemed more alive as a subject. At school I was more inspired by women teachers; you could see yourself more in that field. I had an older male teacher for chemistry who made learning more about memorising. I went on to university to study biological sciences and specialised in insect physiology. On leaving university I started looking for general science related jobs in areas I had studied. There seemed to be few opportunities for an insect physiologist. I started here as an animal technician breeding mice for the research scientists. This was useful in moving into the genetic manipulation service (GEMS) as it enabled me to see the end results of the work of the GEMS research scientists.

Responsibilities:

We work in sterile conditions and the facilities have filtered air to minimise germs in the environment. I have to shower at work and wear protective clothing such as gloves, hair net and lab coat. I work with surgically clean animals and am involved in freezing mice embryos which have been washed in bleach-like solution. Genetic material is inserted into embryos under a microscope. The genetic material is derived from a human host with cancer. We multiply the genes before pronuclear injecting into the mice embryos. Embryos are allowed to develop out of the incubator initially for a few days but are then surgically implanted into the correct part of the womb to develop further. This process is supported by two vets. They teach how to do the surgery and then make checks during the process which takes place in an area like a veterinary surgery. The injecting of genes is usually carried out daily and I usually work in isolation, although other members of my team are simultaneously carrying out the same procedures. Implanting of embryos usually takes place a couple hours later every day.

We have a range of meetings. Some are held weekly to check the plans for the week's work and there are monthly meetings to discuss changes in the research processes being used. I sometimes go into schools to support teachers and work with pupils on practical activities such as extracting DNA.

I go to conferences yearly, as we need to keep up to date.

Essential skills in my job:

- Teamwork
- Communication
- Organisation
- IT (Use of EXCEL and scanning databases)
- Perseverance and motivation
- Initiative and problem solving

What I need to know in my job:

- Animal welfare regulations from Home Office (restrictions on how long embryos can develop outside of womb)
- Ability to read and understand scientific papers



This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 665100.



- Ability to produce scientific papers
- ASPA act 1986 (Care of animals) Animals in Scientific Procedures Act
- We receive 3 days initial training on regulations and ASPA and then attend refresher courses annually at the Royal Veterinary College



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