

"What's exciting for me is that I get to 'road test' new machines and new pieces of kit!"

Gemma has had an interest in microbiology since a teenager and is now active in promoting healthcare science careers in schools.

Gemma Clark

Clinical scientist

Employer or university

Queens Medical Centre, Nottingham

Salary range

£30k-£40k

Gemma Clark

Visit laboratories and get a feel for the atmosphere in a working lab.

How I got into the role

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My interest in microbiology was captivated in my teens by the film *Outbreak*, a fictional scenario of an outbreak of infectious disease threatening to spread globally – not too dissimilar to Ebola!

Up until then I'd considered studying law but my aptitude for science and love of science fiction drew me towards taking a BSc in microbiology. After that I worked in industry in a food microbiology testing laboratory and later studied for a PhD in molecular microbiology with a clinical aspect and an MSc in clinical infection science. I also completed the national Scientist Training Programme to become a registered clinical

scientist.

What I do

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My day-to-day work is variable; I am involved in developing diagnostic services in molecular microbiology, which means I look for the new technologies that are becoming available to help diagnose infection. I also have to review recently published literature on the topic.

Diagnostic microbiology laboratories play an important public health role because they have a legal responsibility to provide epidemiological data (that is, data about the incidence, distribution and control of diseases) to strategic decision makers in public health. I use my technical skills in the identification of infections in the community, their frequency in occurrence and trends.

Most people don't recognise the contribution healthcare scientists make to decisions about the best tests and procedures to use when diagnosing illness, but the healthcare science profession is involved in 80% of all clinical decisions in the NHS. An example of this is the part I play in developing new tests to be able to inform Public Health England (PHE ^[1]) of the current epidemiology ^[2] of infectious diseases so that decisions can be made, for example about which vaccines are offered to whom and the best vaccination schedule to protect the public.

I'm keen to teach others so I supervise both students on the Healthcare Scientist Training Programme and MSc students who are undertaking research projects. I am also involved in the Science, Technology, Engineering or Maths (STEM) outreach projects in schools as well as participating in the national Big Bang Science Fair to encourage the next generation of scientists. It's good to work as part of a team. My colleagues at the Queen's Medical Centre include other clinical scientists, biomedical scientists, medical colleagues and academics as well as PHE ^[1] staff.

Although I'm mainly based in the laboratory and office, I have opportunities to travel to conferences and to visit other laboratories. As part of the public health module of my scientist training I spent three months on rotation at PHE's Centre for Infectious Disease Surveillance and Control (CIDSC) in Colindale, at PHE ^[1] Porton Down (a specialist testing laboratory which has experts who work on rare infectious diseases including anthrax and Ebola) and at the local public health protection unit and regional epidemiology ^[2] centre.

The best bits and challenges

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The constant evolution of science and technology is what makes my work so interesting, so I have to be adaptable to change and maintain my knowledge and understanding of developing technologies in microbiology. What's exciting for me is that I get to 'road test' new machines and new pieces of kit!

The ultimate reward for a healthcare scientist is seeing first-hand the positive impact that your contribution has on advancing infectious disease diagnosis.

Life outside work

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I still have a fascination for science fiction as well as scientific literature such as *Spillover: Animal Infections and the Next Human Pandemic* by David Quammen, which charts the emergence of zoonotic infectious diseases within their scientific, historical, and geographical contexts.

Career plans and top tips for others

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I am now undertaking the Higher Specialist Scientific training to become a consultant clinical scientist (including FRCPath part II in clinical virology). I spend two days a week on clinical virology duty, attending ward rounds, authorising test results and advising medical colleagues, for example on what sorts of swabs to take.

I enjoy teaching so I may consider an educational role later in my career.

My advice to anyone considering a career in healthcare science would be to talk to people who have been through the training, visit laboratories and get a feel for the atmosphere in a working laboratory, apply for work experience in a laboratory and focus on developing transferable skills to boost your application.

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Links

[1] <https://www.healthcareers.nhs.uk/glossary#PHE> [2]
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