Microbiologist

Microbiologists use various types of microscope and other equipment to study the biology and chemistry of organisms (or microbes) too small to be seen with the naked eye, such as bacteria, viruses and parasites. Some microbes can cause infections but many are of benefit to humans. They may also be called clinical or medical microbiologists or clinical scientists.

The Work

You could be:

- developing and improving antibiotics and vaccines to treat infections and combat resistant microbes affecting plants, animals or humans
- using gene technology to modify microbes, to make medicines such as insulin
- using microbes to produce biochemical enzymes for use in analysing DNA or use in the food industry
- identifying and controlling diseases, such as swine flu, to help prevent an epidemic
- analysing samples of food or water to check for microbes which might cause food poisoning
- monitoring the effect of microbes in breaking down waste and working on the production of biofuels
- studying how microbes affect climate and different habitats
- planning and carrying out experiments and investigations, collecting and analysing data
- writing reports and making recommendations based on your results.

Pay

The figures below are only a guide. Actual pay rates may vary, depending on:

- where you work
- the size of company or organisation you work for
- the demand for the job.

The starting salary for new graduates is around £20,000 to £23,000. An experienced microbiologist, including those in research posts, may earn up to around £39,000 a year. Some microbiologists with high levels of responsibility earn more than £45,000 a year.

Registered clinical scientists (microbiology) in the NHS are generally on Agenda for Change Band 7, £37,570 to £44,688 a year. Principal clinical microbiologists are on Band 8a, £45,446 to £51,883 a year and Band 8b, £53,291 to £62,259 a year. Pre-registration trainees are on Band 6, £30,401 to £38,046 a year.

You could also work as a specialist biomedical scientist within the NHS on Band 6, £30,401 to £38,046 a year.

The current pay scales are from April 2019.

Conditions

- Depending on your job, you might work in a hospital, industrial or academic laboratory, a factory, an

office or a classroom.
- You would normally work regular hours but you might have to work some shifts or evenings and weekends.
- You might have to travel to collect samples for analysis.
- You may have to travel to conferences.
- You need to wear protective clothing such as a lab coat, a mask or gloves.

Getting In

- You usually need a degree in microbiology, but other related bioscience degrees may be accepted. For entry to a degree you usually need 4-5 Highers, normally including at least 2 from Maths, Biology, Chemistry and Physics. Biology and Chemistry are often preferred. You usually also need Maths, English and a science subject at National 5.
- It is important to check the course content to make sure the degree you choose and your final degree path is suitable for the work you want to do.
- To train as a clinical scientist you would need a 2:1 Honours degree or above in a pure or applied science subject specialising in microbiology to be eligible for the NHS Scientist Training Programme (STP).
- A small number of Higher National Certificate (HNC) or Higher National Diploma (HND) courses ask for 1-3 Highers and these may offer a progression route to a degree course.
- In NHS Scotland the job title is clinical scientist and in order to practise in the UK as a clinical scientist you need to be registered with the Health and Care Professions Council (HCPC).
- Getting relevant work experience as part of your course or through an internship or work placement may greatly increase your chances of getting your first job.

Typical employers of new microbiology graduates are varied and can include the National Health Service (NHS), pharmaceutical and biochemical companies, brewing and food manufacturing, government agencies, universities and research institutions and private laboratories.

You can also work in a range of positions outside of the laboratory. You might work in technical writing or editing, finance, retail, management and teaching.

What Does It Take

You need to be:

- practical, logical and methodical
- observant
- patient and willing to persevere
- accurate and careful when carrying out experiments and recording results
- able to write clear and precise scientific reports
- able to work on your own and as part of a team
- responsible about health and safety.

You need to have:

- a strong interest in science

- excellent written and verbal communication skills
- an enquiring mind and problem solving skills
- a good eye for detail
- good IT skills.

Training

- In industrial jobs training is normally on the job. It includes new laboratory methods, updating specialist areas of work and health and safety regulations.
- Training with some employers may include postgraduate study for an MSc or PhD.
- To become fully qualified and able to register with the Health and Care Professions Council (HCPC), you complete three years of training.
- This is either the three-year Scientist Training Programme (STP), overseen by the National School of Healthcare Science (NSHCS), or an STP equivalent.
- All training methods combine various clinical placements with academic study in a specialist area and usually leads to an MSc or specialist postgraduate diploma and registration with the HCPC.
- Vacancies are usually advertised on the NHS Scotland Recruitment and NHS Education for Scotland websites.
- The majority of training opportunities for health care science disciplines (including microbiology) with NHS Scotland are advertised in the early new year.

Getting On

- If you study for postgraduate and professional qualifications this could help you progress.
- With work experience and further skills you may be able to become a lab supervisor or manager.
- It also helps to be involved in research projects, publish your own work and keep up to date with new research.
- Joining a professional body and networking with others in your field can also be helpful.

More Information

The Future Morph website www.futuremorph.org shows you some of the amazing and unexpected places that studying science, technology, engineering and maths can take you.

If you are interested in microbiology you might be interested in Microbiology Online.

Contacts

Association of Clinical Scientists
Tel: 020 7940 8960
Email: info@assclinsci.org
Website: www.assclinsci.org

Association of the British Pharmaceutical Industry (ABPI)
Tel: 0207 9303477
Website: www.abpi.org.uk
Twitter: @ABPI_UK

Institute of Food Science and Technology (IFST)
Tel: 020 7603 6316
Email: info@ifst.org
Website: www.ifst.org
Website (2): www.ifst.org/lovefoodlovescience
Twitter: @ifstnews
Facebook: www.facebook.com/InstituteofFoodScienceandTechnology

Microbiology Society
Tel: 020 7685 2400
Email: info@microbiologysociety.org
Website: microbiologysociety.org
Twitter: @MicrobioSoc
Facebook: www.facebook.com/MicrobiologySociety

Royal Society of Biology
Tel: 020 3925 3440
Email: education@rsb.org.uk
Website: www.rsb.org.uk
Twitter: @RoyalSocBio
Facebook: www.facebook.com/RoyalSocBio

Society for Applied Microbiology (SfAM)
Tel: 0207 685 2596
Website: www.sfam.org.uk
Twitter: @SfAMtweets
Facebook: www.facebook.com/microbiologySfAM

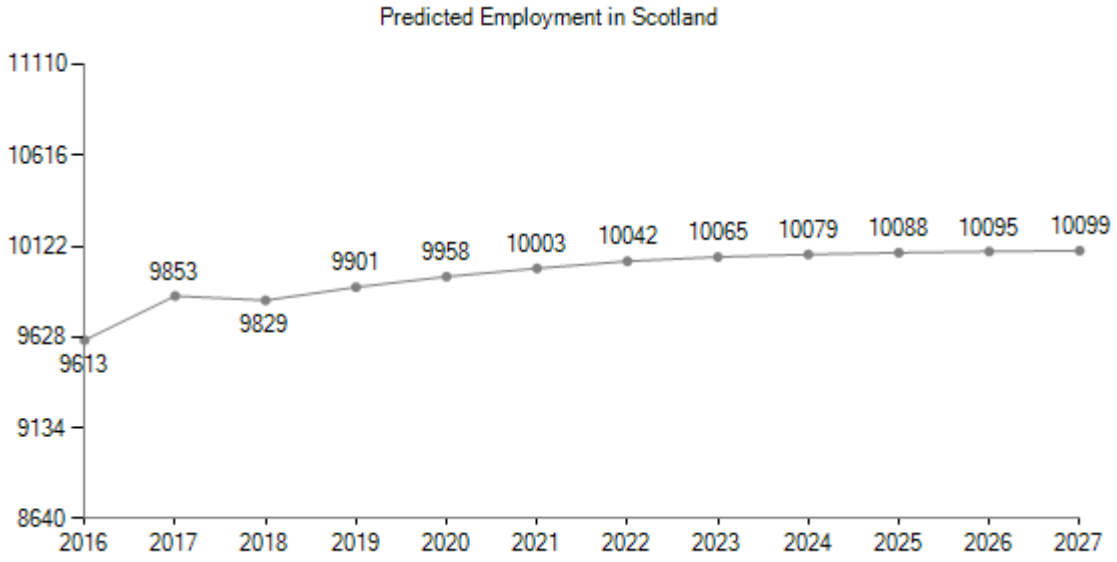
Statistics

LMI data powered by LMI for All

Past Unemployment - Scotland

Date	Unemployed
Dec 2018	0.04%

LMI data powered by EMSI UK



LMI data powered by EMSI UK