

# Case Study: Microbiologist - Susan

## What do you do?

I'm a lecturer in a university microbiology department, so my job includes three main areas: teaching, research and some administrative duties.

## What is your background?

I studied biology at university. I'd always enjoyed it at school because it seemed concrete and 'real' to me, unlike more abstract sciences like physics or maths.



During my studies, I became very interested in micro-organisms. After my Master's degree, I stayed on in a research post for three years before taking my PhD. I've been a microbiologist now for over thirty years.

## What characteristics do you need to be successful in your job?

You've got to be fascinated by microbiology and have a curious, open, logical and yet creative mind, to think about how the relationship between human beings and micro-organisms will develop in the future.

In my particular job, I must be well organised - I've got to handle three areas of responsibility at once. I've got to be flexible because this is not a nine-to-five job. I spend many nights marking papers.

## What other jobs could you do using the skills from this job?

Microbiologists can move into related scientific fields such as biochemistry, plant sciences, genetics, ecology, evolution or biochemical engineering.

Those of us with enough training can also move between government, industry and academia.

## What changes will there be in the future?

The demand for microbiologists will definitely increase because of the central role that microbes play in genetic engineering and biotechnology. These are growing fields.

We must continue to find out about microbes if we are to fully understand diseases and biological processes.

Science is always changing, with advances in technology, and microbiology is no exception. Computers have already revolutionised diagnostic methods and data analysis.

## What are the biggest challenges in your job?

The most challenging part of my job as an academic microbiologist is getting funding. In times of cutbacks and downsizing, applying for grants is a very competitive process.

## Are there many opportunities to enter this career?

There are opportunities in academic research, hospitals, medical research centres, and pharmaceutical and biotechnology companies.

## What do you like about your job?

I really like the research and experiments, especially the microscopy. It's just great to be able to get in there and actually see what micro-organisms look like and how their cells function.

I also enjoy the teaching. University students are relatively mature and they really want to learn. It's interesting to get

to know them and hear what they want to do with their lives.

And finally, as an academic microbiologist, I have a lot of flexibility. I can do research on the issues that I think are important and I can set my own schedule.

## What do you dislike about your job?

It's really difficult to find the time to run a research lab while teaching at the same time. Marking papers can also be tedious.

## What advice would you give to someone interested in your career?

Develop a broad range of skills, including computer skills and, just as importantly, communication skills. Things change quickly in science and technology and you have to be able to adapt.

## A day in the life

8:00 am - 9:00 am

Checking my email from other scientists and university administrators, emailing back.

9:00 am - 10:00 am

Photocopying and organising handouts for my students, preparing lecture notes.

10:00 am - 11:00 am

Delivering a lecture to undergraduate microbiology students.

11:00 am - 12:00 pm

Meeting with a postgraduate student to discuss research procedures and experiments he is doing, looking at his data and results, answering his questions, suggesting how he should proceed.

12:00 pm - 1:00 pm

Eating lunch at my desk, planning some experiments that I would like to get done today and tomorrow.

1:00 pm - 2:00 pm

Attending an undergraduate lab session, overseeing the groups, walking around, answering questions, demonstrating lab techniques.

2:00 pm - 4:00 pm

Working on my own experiments: using an electron microscope to observe microbes under a slide, writing down my observations, taking magnified photographs for later reference.

4:00 pm - 5:00 pm

Writing letters to colleagues and letters of reference for my students.