

# Mathematician

## Dr Ruth Luscombe

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### What does a mathematician do?

Mathematics is like a support science for all the other sciences. Mathematicians and statisticians work on all kinds of areas like agriculture, conservation, meteorology, medicine, marketing or even sport.

### What do you work in and what is your specialty?

My specialty is Operations Research and I work in hospitals and healthcare. Operations Research is a branch of mathematics that is used to improve the efficiency and effectiveness of businesses and systems. Timetabling, scheduling and logistics are all areas where Operations Research is heavily used. My work at the hospital looks at many things, like how staff are scheduled in the hospital, how patients move through the health care system, and how to make improvements in efficiency.

### What study path have you taken to get here?

At high school I simply picked the subjects that I was good at and that would probably lead to multiple career opportunities. I took two gap years after school because I didn't know what to do. When I went to university I initially started an Engineering degree but I ended up switching to a degree that focussed on programming and maths. I graduated with honours and spent a few years working on different things. I've worked in statistics, defence, accounting, research. Eventually, I landed an amazing job with a hospital where I worked on lots of interesting projects around improving efficiency. The hospital even supported me when I went back to university to study my PhD.

### What do you like most about your job?

I get a lot of autonomy and respect in my hospital job. This can be scary at first, because you have to be very self-reliant and be confident in the results that you share with others, but it's good because I get to choose my own direction and be my own boss.

### Do you have any particular career highlights?

All of the travel! As an undergraduate in mathematics, I went on international exchange. During my PhD and other research jobs I've been able to visit lots of different countries to present my work at conferences. One trip took me from Hong Kong to Iceland and Brazil. At the end of this year, I'm going on a boat trip to Antarctica for women in science. Who knew that mathematics could be so glamorous?

### What advice would you give to someone interested in working in this area?

Science is amazing. It's not even a question of 'why do science,' it should be a question of 'which science is right for you.' You can have a favourite science in the same way you have a favourite sport or a favourite colour. Maths is my favourite science. One of my best-friends is into 'fungus'-science (mycology). Are you into bugs, or tropical reefs, or robots, or brains, or bones? Because there's a science for that. There's a science for everything.

