

# SCISOC SPOTLIGHT

BY THE CAMBRIDGE UNIVERSITY SCIENTIFIC SOCIETY

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### RESEARCH FOCUS:

SYSTEMS BIOLOGY

I'm interested in the **effects of ageing, toxin anti-toxin (TA) systems** and persistence in bacterial systems such as ***B. subtilis***. Ageing is of interest because for a long time we thought that organisms which divide (supposedly) symmetrically, were immortal. We now know that this is not the case. There is evidence to suggest that **persistence, (also known as multi-drug tolerance)** has some role to play in the ageing process.

My research focuses specifically on TA systems and their role in these phenomena. I mainly use a **combination of modelling/numerical simulation techniques** (stochastic, deterministic, spacial and dynamical), **synthetic biology tools** (mostly cloning!), and **high-throughput time-lapse microscopy in micro-fluidic devices** (such as mother machines) to study these systems.

## WHY RESEARCH?

I liked having the freedom to learn whatever I wanted without the pressure of exams. Because my interests still span a broad range of disciplines, I decided to pursue this further in the form of a PhD. I have been really fortunate to end up in a lab which supports and encourages learning across both the applied and theoretical aspects of the research which I am interested in.

**"As long as I can remember, I have always wanted to be a scientist. I fell in love with the act of doing science when I started doing undergraduate research."**



## ONE PIECE OF ADVICE...

Do not think that you are restricted to a specific scientific domain purely because of your previous undergraduate studies. As someone who came from a chemical engineering background, but was still interested in biological sciences, I was able to find and carve out a niche where I can usefully apply what knowledge I already had while being in an environment allowing me to learn and fill in the gaps required to do the research I'm interested in. One book which I would thoroughly recommend to any aspiring researcher is *Letters to a Young Scientist* by E. O. Wilson.