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SCISOC SPOTLIGHT

BY THE CAMBRIDGE UNIVERSITY SCIENTIFIC SOCIETY

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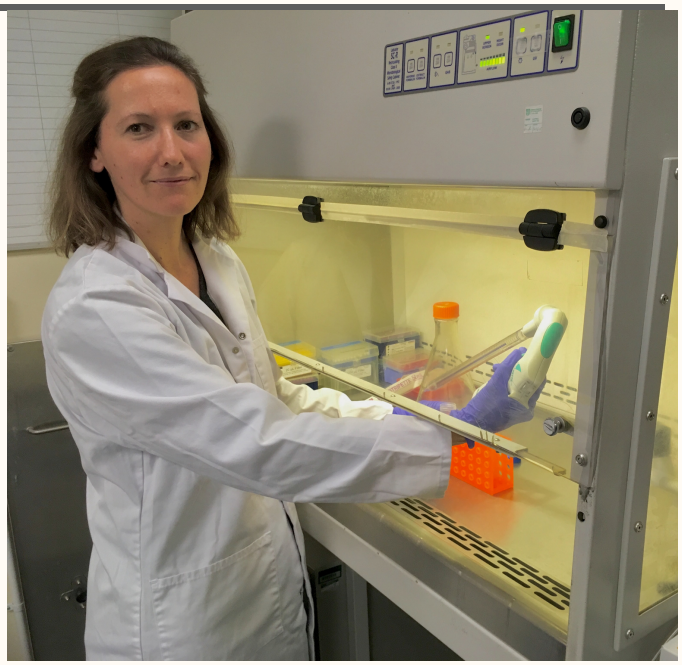


RESEARCH FOCUS:

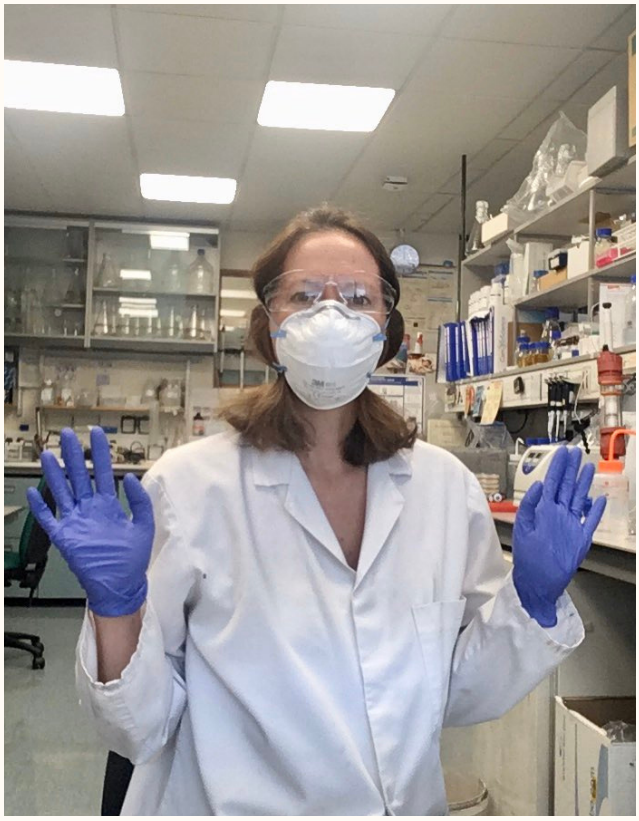
STRUCTURAL BIOLOGY OF HUMAN DNA REPLICATION

My particular area of interest is geared towards understanding, at the molecular level, **how DNA replication works in human cells**. It's important, at a fundamental level, to understand how the cells in our body replicate DNA (the information storage molecule) prior to cell division. This is key to **ensuring that each daughter cell has a complete and accurate copy of the genetic material.** There are also more translational aspects to our research, relevant to human health. Cancer is a disease of uncontrolled cell growth and division, requiring high levels of some DNA replication proteins. We are currently **investigating whether some of these DNA replication proteins would make effective targets for anti-cancer therapy.** We have also recently discovered that **some of our DNA replication proteins interact with SARS-CoV-2 viral proteins**, which may help us to deepen our understanding of COVID disease progression and severity

WHY RESEARCH?

I didn't really have a "eureka" moment – I enjoyed my undergraduate degree to the extent that I knew I wanted to give a PhD a go. My PhD was a stimulating, collaborative experience, so I thought well, I'd quite like to continue to a post-doc. I've moved research fields (and locations) a fair bit: from inorganic chemistry (undergrad/Masters, Cape Town), to bacterial biosynthetic pathways (PhD, Cambridge), to human DNA repair (post-doc, Institute of Cancer Research, London), to human DNA replication (senior research associate, back in Cambridge!). I really enjoy taking on a new research project, working in a collaborative team to put the pieces of the puzzle together to arrive (eventually!) at the big biological picture. And I still enjoy my research work, but I'm now balancing that with other roles: Assistant Director of Teaching in the Department of Biochemistry, and Tutor, DoS and Supervisor at St Catharine's College. I enjoy the variety that these different roles bring, and it's really fun teaching and supporting a wide range of students.

"People always say it, but it is important to follow your interests – one of the most satisfying moments is finding that area/topic that really interests you. And that enthusiasm, interest, and motivation will keep you going through the days when those experiments *just. aren't. working...*"



ONE PIECE OF ADVICE...

PeIf you think a career in research could be for you, be persistent about seeking out extra-curricular research experience - use your network (DoS, supervisors), apply for funded internships in academia/industry, email individual group leaders and simply ask if they have any summer internship opportunities available – email again if you don't hear back (academics are often drowning in emails, so don't be scared to drop a reminder email). Don't be afraid to change field – the diverse experience can make you a better scientist. There is some fascinating work going at the interface between fields – chemistry, biochemistry, physics, mathematics and computer science. Join societies (like SciSoc!) – build a network. Don't worry if you're not sure WHAT you want to do – the Careers Service is a great place to start looking for all sorts of different/varied opportunities.