

PROFILES IN SCIENCE

Christ's College Alumnae: 1978 to 2018

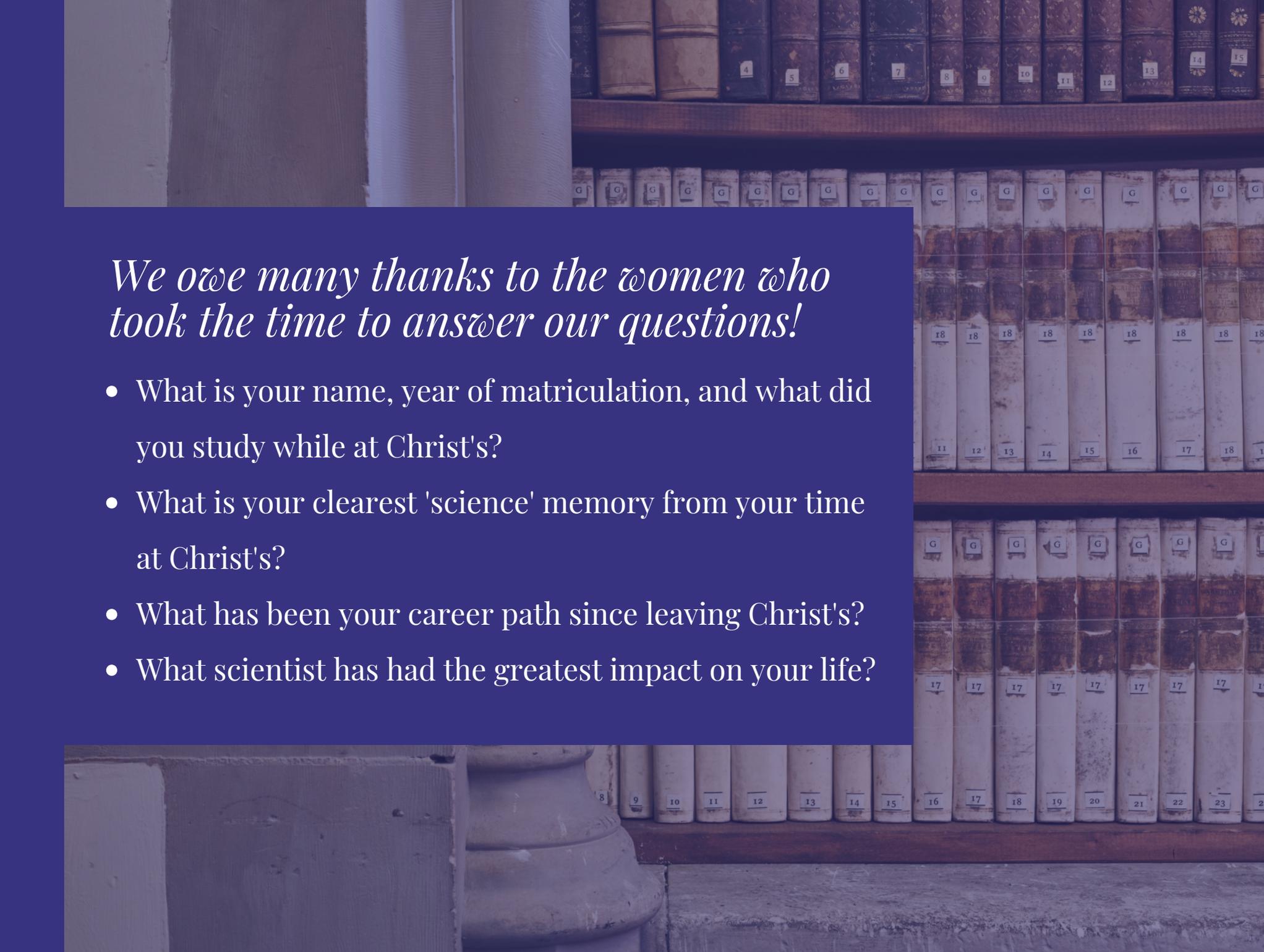
40 YEARS OF FEMALE SCIENTISTS

In October 1978, the first female students were admitted at Christ's.

This year we celebrate forty years of female students and we wanted to take the opportunity with this exhibition, centred as it is around science, to find out what our female science students have done.

Of the 1,857 women who have matriculated at Christ's in the past forty years, 679 have studied some form of maths or science.

Seventeen would like to share their stories with you...

The background of the slide is a photograph of a library. It shows several rows of bookshelves filled with books. The books have white spines with small labels. A white pillar is visible on the left side of the image. The overall lighting is somewhat dim, and the colors are muted.

We owe many thanks to the women who took the time to answer our questions!

- What is your name, year of matriculation, and what did you study while at Christ's?
- What is your clearest 'science' memory from your time at Christ's?
- What has been your career path since leaving Christ's?
- What scientist has had the greatest impact on your life?

SUSAN CANNEY

'Science' Memory:

Working in the attics of the Geology Department during the summer vac (for Professor Barry Rickards) to reunite the shells in Sir Vivian Fuchs shell collection with their labels, surrounded by piles of wonderful leather-bound shell-identification volumes with hand-coloured plates.

Career:

On leaving Christ's I worked for two years in the Serengeti National Park, Tanzania, for a study on hyraxes based in the Sub-department of Animal Behaviour at Madingley. I then returned to the UK for an MA in Landscape Architecture at Sheffield University and worked as a Landscape Architect for a year before being drawn back to Africa and conservation to work for three years in Niger as a Programme Officer for IUCN, the World Conservation Union. A sense that science was not enough for effective conservation took me back to the UK and an MSc in Environmental Policy from Lancaster University. This was followed by working as a Policy Researcher for Sir Crispin Tickell, the UK government's independent advisor on Sustainable Development, Warden of Green College, Oxford and the Director of the Green College Centre for Environmental Policy and Understanding, which was an education in itself. Three years later it felt time to get back to the field and I enrolled for a doctorate at Oxford University's Zoology Department using remote sensing to understand human impact in and around a protected area in Tanzania. The following years consisted of working on a variety of conservation projects across Africa, Asia and Europe, performing assessments and developing conservation strategies, particularly for human – wildlife co-existence, and frequently involving elephants. One of these was the Mali Elephant Project, which became my full time occupation in 2010. This works to find ways for people and elephants to live together for mutual benefit in an area of poverty, compounded since 2012 by insurgency, war and a poaching holocaust. In the process I aim to gain insight into what it takes to turn a complex situation with human and natural components from a bad outcome to one which protects nature and allows humans to thrive.



Impactful Scientist:

James Lovelock, for his originality of thought

JACOBY PATTERSON (NÉE GREGORY)

'Science' Memory:

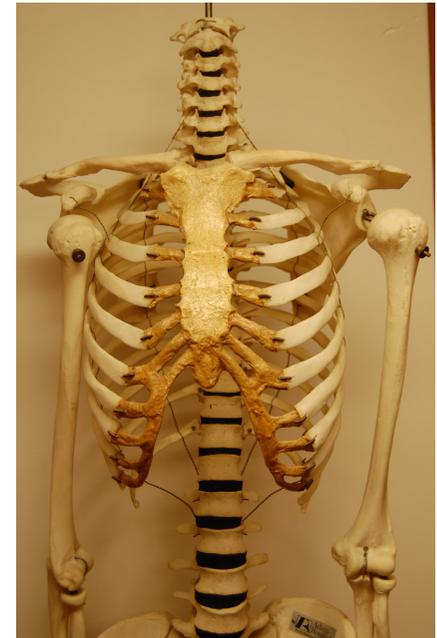
LEARNING ANATOMY IN THE LIBRARY WITH THE SKELETON

Career:

Clinical work including medicine, surgery/orthopaedics, paediatrics, elderly care and radiotherapy/oncology; specialising in public health including teaching public health to medical students and GP trainees at Oxford University; MD; freelance Research Consultant with a special interest in systematic reviewing

Impactful Scientist:

Charles Darwin and Marie Curie



ISABEL TAYLOR

'Science' Memory:

My clearest memory, as a student of Computer Science, is the old computer room above the library. It might be hard for current students to imagine, but of course in the mid-1980s we didn't have our own computers. Instead, we had to plan ahead and book time in a room up amongst the eaves to be able to use a computer for work such as coding and testing. I spent long hours up there doing my dissertation.

Career:

Although I didn't directly use my computing as a coder, it permeated most things I did afterwards. First I worked as a management consultant at Bain & Company, and then joined Reuters where I spent the rest of my career. I was a strategist and business manager there, but understanding technology was essential to everything Reuters does.

Impactful Scientist:

Her work is unrelated to my subject, but the scientist who most impacted my life is Rosalind Franklin. She is someone who made enormous scientific advances, but was not given her due credit. The fact that she was a woman was a huge part of the reason for this. So I have always remembered her as I work, and try to ensure that the women around me get the credit and rewards they deserve. An important goal as we mark 40 years of women at Christ's!





LUCY BAILEY (NÉE FOUNTAIN)

'Science' Memory:

My Part II project, with Dr Rees, which involved burying a brick out at the Astronomy site and building a detector to explore any change in surface temperature patterns - to test remote sensing as a means of discovering archaeological sites. Cycling along the Madingley Road with said brick in my panier was hard work!

Career:

I worked first as an environmental consultant and am now in charge of environmental safety cases for disposing of radioactive waste, working for Radioactive Waste Management Limited (a wholly owned subsidiary of the NDA, a public body) at Harwell in Oxfordshire. I am also the current Chair (and first ever female and youngest Chair) of the OECD-NEA international body, the Integration Group for the Safety Case, that is the technical advisory body inputting to strategic and policy aspects of global radioactive waste management. I recently spent some time at Chernobyl, as the safety case expert on an IAEA mission to advise the Ukrainian government on the safe disposal of radioactive waste in the Chernobyl Exclusion Zone.

Impactful Scientist:

Marie Curie - not only did her work provide the foundations for our current understanding of radioactivity, but she was an inspirational and dedicated female physicist.



KATIE AIKIN (NÉE RICHARDSON)

'Science' Memory:

My clearest 'science' memory from my time at Christ's was preparing a presentation on a scientific topic of my choice to the then master, Sir Hans Kornberg. I chose the human immunodeficiency virus (HIV), very topical at the time, and I remember how nervous I felt to present to such an eminent and distinguished biochemist.

Career:

As soon as I left Christ's after graduating, I joined a firm of patent attorneys. There I qualified as a Chartered Patent Agent and European Patent Attorney, later becoming a partner in the firm. I specialised in biopharmaceuticals and organic and synthetic chemistry, and worked on some fascinating products including erythropoietin and tadalafil. After 15 years, I took a career break to become a full time mother and I am currently at home with my two children.

Impactful Scientist:

The scientist who had the greatest impact on my life is Edward Jenner, whose work led to the world's first smallpox vaccine. That his work could have such a far reaching influence on world health without doubt inspired me to pursue a career in science. Similarly inspiring was the work of John Snow who painstakingly mapped an outbreak of cholera in London, leading to far reaching consequences for human health and sanitation. Scientists who have had the greatest impact on my working life are the worldwide team of collaborative scientists who sequenced the human genome, which totally challenged patent law as we knew it. With regard to the impact on my personal life, I am eternally thankful to the scientist Sir David Jack and his team every time I reach for my salbutamol inhaler.

(ANN) SARAH WALKER

'Science' Memory:

Being ritually humiliated in one particular set of supervisions because I wasn't a "beautiful" mathematician who got the 3 line proof – I always slogged my way through 4 pages of algebra and got the right answer in the end! It was a very important learning point for me to appreciate diversity in approaches – and outside of university I have found just continuously moving forwards towards a right enough answer is a far superior approach to sitting around waiting for beautiful inspiration.

Career:

Immediately after leaving, I did a Masters in Statistics with Applications in Medicine at Southampton University, then a PhD in Medical Statistics at University College London at the MRC HIV Clinical Trials Centre (now the MRC Clinical Trials Unit at UCL). Since then I have worked as a medical statistician designing, managing and conducting statistical analysis of observational studies and randomised controlled trials in diverse infectious diseases ranging from HIV to Hepatitis C to bacterial infections, in adults and children in high-, middle- and low-income countries, including a large portfolio of trials in Africa. I am now Professor of Medical Statistics and Epidemiology at both University College London (40%) and the University of Oxford (60%) where I lead a large programme of research translating advances in genetic sequencing into microbiology services, and linking this sequence data to electronic health records for large-scale epidemiology to improve the management of infectious diseases.

Impactful Scientist:

Janet Darbyshire was the Director of the MRC HIV Clinical Trials Centre where I did my Phd and worked initially, then of the MRC Clinical Trials Unit – she was an amazing role model as well as an outstanding scientist, as demonstrated by her being the first woman to win the MRC's Millenium Medal.



REBECCA (BECKY) MORRIS

'Science' Memory:

My first year tutorials with Dr Douglas Barker, particularly those that involved kneeling on the floor leaning over a huge map of cell reactions, whilst Dr Barker enthused (as he always did) over what was going on.

Career:

I did my PhD in community ecology, followed by a postdoctoral research position at Imperial College London (Silwood Park). I then spent a short time as a postdoctoral research associate at the University of Bristol, before moving to the University of Oxford. In Oxford I worked at the Department of Zoology, first as a Royal Society Dorothy Hodgkin Fellow, and then a Royal Society University Research Fellow. I moved recently to the University of Southampton, School of Biological Sciences, where I am currently Associate Professor in Ecology. I am a community ecologist and tropical ecologist, and lead a research group quantifying the structure, dynamics and functioning of ecological communities, and investigating how they respond to environmental change. The field trips to tropical rainforests - including Belize, Borneo and Papua New Guinea - are definitely one of the highlights of my job.



Impactful Scientist:

At Cambridge, it was Sally Corbet, who shared her enthusiasm for insect ecology. Beyond that, Charles Godfray, my PhD supervisor, is the scientist who has had the greatest impact on my life. Among the many things he taught me, were the necessity to question whether my ideas were interesting, and to work out how to test them experimentally.

MARY HOWMAN

'Science' Memory:

Studying at the Centre for Brain Repair at Addenbrookes - investigating changes in reward systems in models of Huntington's disease.

Career:

I was enthused, partly by this experience, to study Medicine and am now a GP and teach medical students at the UEA.

Impactful Scientist:

Rosalind Franklin both in terms of her contribution to discovering DNA and her personal story dying aged 37 of cancer. She inspires me as a GP to remember the importance of science in medicine but also the uniqueness of everyone's personal narrative.

JOANNE RIMMER

'Science' Memory:

Spending 4 hours a week of my first year dissecting a cadaver and then attending a memorial service in the dissection room for all the cadavers at the end of the year.

Career:

I undertook clinical studies at Guy's & St Thomas's in London, graduating in 1999. After house jobs and a brief stint in Sydney, Australia I completed basic surgical training in London, gaining MRCS in 2003. After 18 months as an ENT SHO I started higher surgical training in Otolaryngology Head & Neck Surgery in North Thames, passing my FRCS(ORL-HNS) in 2010. I finished training in 2011 and spent a year in Brisbane, Australia undertaking a fellowship in rhinology and anterior skull base surgery. I spent another two years in subspecialty training in rhinology, anterior skull base and facial plastic surgery in London before moving to Melbourne, Australia to take up the position of rhinologist/skull base surgeon at Monash Health, where I still work today. I am also an Honorary Senior Lecturer at Monash University.

Impactful Scientist:

Harold Hopkins, the British physicist who invented the Hopkins rod endoscope that allows me to undertake endoscopic sinus and anterior skull base surgery (it is used for all keyhole surgery).



SALLY CURRAN (NÉE THOMPSON)

'Science' Memory:

Attending a supervision in second year only minutes after my supervisor had dropped a vial containing the fruits of many weeks' labour in the lab. It helped me conclude that the life of a research scientist was not for me and it spurred me to find an alternative career path that made the most of my degree but wasn't lab-based. Thanks to the University Careers Service I found out about patent law and it perfectly matched my interests and skillset.

Career:

After graduation I joined Mathys & Squire, a patent attorney firm in London, and qualified as a UK and European Patent Attorney in 2003. I worked in other private practice firms until 2010 when I moved to AstraZeneca's Intellectual Property department at Alderley Park, Cheshire, then in Cambridge from 2015. My role is to manage the patent portfolio for AstraZeneca's Respiratory, Inflammation & Autoimmune products and pipeline projects, helping ensure we capture and protect the value of our innovative research and development. Success of our products allows us to continue to invest in R&D, and keep bringing life-changing medicines to patients. I love the breadth of my role and the fantastic colleagues I work with across all sections of the company, and it has also been great to come full-circle and return to Cambridge with AstraZeneca. The successes and achievements of Cambridge scientists makes it a continually inspiring place to work.



Impactful Scientist:

Undoubtedly my Chemistry teacher, Ron Wiggins, at the Duchess's High School in Alnwick. Though a non-selective state school in the north of England, Chemistry grades were consistently exceptional during my time there: huge credit to the school as a whole, but particularly to Mr Wiggins' sound, inspiring and fun teaching.

MORAG LEWIS (NÉE GRAY)

'Science' Memory:

Professor Ron Laskey singing "If you're feeling like a cabbage after too long in the Babbage" during his lectures in the first year.

Career:

I spent a year doing the Diploma in Computer Science, then did a PhD in Zoology (all at Christ's). After my viva, I started working for Professor Karen Steel at the Wellcome Trust Sanger Institute, studying the genetics of hereditary hearing loss. Professor Steel moved her lab to King's College London in 2012, and I am still working for her there at the moment.

Impactful Scientist:

Professor Steel, who has supported me in learning as a scientist for the last 12 years, and who has given me the chance to work on so many fascinating projects.





HELEN SNEDDON

'Science' Memory:

I vividly remember being inspired by Dr Barker's interview question.

Interviewees were asked to pick an item from a hypothetical "rubbish dump" on an alien planet, and thence deduce something about life on that planet. I thought it was an inspired question, as it allowed the interviewee to play to their strengths and choose something leaning towards Chemistry, Physics, Biology as they saw fit. And it offered just a hint of what was to come in the Natural Sciences Tripos with individual topics going on to have wider implications, once you dug beneath the surface.

Career:

Postdoctoral Research Fellow at University of California, Irvine, looking at the catalytic asymmetric chemistry of Palladium II. In retrospect, whilst I learned a lot of synthetic organic chemistry, the aspect of these 2 years which had the greatest impact on my future career was the making of large scale batches of catalyst, which made me aware of the market price of Palladium. I then joined the pharmaceutical company GlaxoSmithKline, and spent 5 years in drug discovery. During this time I started a palladium recycling initiative which returned money to the company for reinvestment in sustainability issues, and I became increasingly involved in the assessment of the environmental impact of drug discovery, development and manufacture. For the last 7 years I have led a team looking to minimise the environmental impact of GSK Chemistry. I am on the editorial board of the journal Green Chemistry, I am an honorary professor at the University of Nottingham, and I am involved in a number of academic collaborations with institutions in the UK, US, Singapore and Brazil looking at Green and Sustainable Chemistry.

Impactful Scientist:

Rachel Carson

SARAH GARDNER



'Science' Memory:

Meeting David Attenborough and hearing him talk about the Galapagos before a charity dinner. He was as wonderful in person as on TV, and seemed genuinely interested in what we were studying.

Career:

A PhD, then life science-specific management consulting for a few years before moving in-house to do strategy work in a pharma company. I wanted to stay in science in some way, preferably related to healthcare, but didn't enjoy being in the lab. This route has allowed me to do that, and to keep learning and being challenged every day.

Impactful Scientist:

Charles Darwin is the predictable answer, having been at Christ's, but Louis Pasteur was critical for the advance of healthcare.

KATY HORDER

'Science' Memory:

I have so many important science memories. My interview at Christ's is still very vivid. I remember having to answer questions about a dog's skull and also to justify (ironically now) why I had chosen natural sciences rather than medicine. I have strong memories of our very first lecture, where we were introduced to the big picture and inspired by all those that had been before us. I remember the lecturer who sang us a song at the end of term - 'like a cabbage in the babbage!'. I remember being challenged and stimulated in college supervisions. I remember the thrill of explaining science to children at Stimulus events.

Career:

I took a gap year, during which I worked in a hospital laboratory and then went travelling to Borneo. I then took the graduate medicine course at Hughes Hall, Cambridge. I graduated from this in 2015 and have worked as a doctor in London and Cambridge. I am currently training to be a GP. I do have ambitions to pursue research in the future if the opportunity arises.

Impactful Scientist:

I have great admiration for the work of the late Stephen Hawking, and his determination to contribute to the world of physics and the public face of science with intelligence and humour despite great personal difficulties.



ALIA ARDRON



'Science' Memory:

My lab partner and I saw the other chem eng pair from Christ's assembling equipment for an experiment backwards and decided the best time to tell them was as they tightened the final screw.

Career:

I've worked for SPX Flow, a process equipment manufacturing company, since graduating. Started as a project engineer, designing and selling industrial mixers around the world, and now I work on the design of food & beverage factories.

Impactful Scientist:

My Grandad, who was a plant manager for DuPont in the U.S.A., because I would look through his chemical engineering books when I was little and I decided to follow in his footsteps and become a chemical engineer. The scientific advances that inspire me most are the ones being made by Elon Musk with SpaceX.

GRACE MCGREGOR

'Science' Memory:

Christ's was the place that I became inspired to be a scientist. You're surrounded by incredible researchers and taught by inspirational leaders of the field so it's hard not to feed off their enthusiasm and love for their subject. You really feel the passion and urgency to progress our knowledge as lecturers and tutors detail not only past research but the front line of the field too. My clearest memory was of an infamous physiology professor asking me with a very straight face why a male rat might have the ability to withdraw its testicles... apparently they don't like the cold so can retract them. He then proceeded to demonstrate this phenomenon on the cadaver in front of me. At least the rat smelled better than the fish option for dissection!

Career:

I've just finished my PhD with Cancer Research UK. I will be taking up a post-doc in cancer research at the University of California, San Diego. Eventually, I hope to become one of the few female group leaders!

Impactful Scientist:

Prof Karen Vousden is now chief scientist of Cancer Research UK. I naively emailed her as a first year undergrad to ask for a lab placement the following summer. Her PA responded, and it was only then I realised she was the Director of the Institute where I now do my PhD! She introduced me to cancer and metabolism (my favourite undergrad subject), the field I chose to do my PhD in. Her best friend, Prof Gerard Evan (a current fellow of Christ's) gave me my next big break to do my third year project in his lab, all because Karen had recommended me. She has been instrumental at guiding my early career path and her research has significantly increased our understanding of how to treat cancer.





SOFIA PEDERSEN

'Science' Memory:

I really enjoyed the science talks organised by the Darwin society, both at the lectures and at the annual dinner. It was a great opportunity to meet scientists from all fields, backgrounds, and stages of their careers. The biomedical lectures were particularly helpful in confirming the field of research I wished to pursue!

Career:

- 2017–2018: Master's in Biomedical Research at Imperial College London (London, UK)
- 2018–current: Graduate Scientist in Innovative Medicines and Early Development at AstraZeneca (Cambridge, UK)

Impactful Scientist:

As a woman in science, I have always looked up to scientists such as Marie Curie, Rosalind Franklin and Jane Goodall amongst others, leading lights both in their scientific field and in changing the societal perceptions of their time. In a more personal sense, my supervisors during my time in college were invaluable, both by making me a better scientist and helping guide my next steps after university.

HOLLY GILES

'Science' Memory:

Leaving Christ's front gate at 5am to make the 5:30 train for an interview. I had applied for the Ford UK National Prize for Women in STEM Study and was visiting their engineering headquarters to interview for the prize. I got back later that day and they called to say I had won. We went to formal to celebrate, and then to see the Footlights after. It's one of my favourite memories of being at Cambridge.

Career:

After graduating in 2017, I moved to Heidelberg in Germany to begin my PhD at the European Molecular Biology Laboratory on understanding variability in drug responses in leukemia patients, and how cancer genetics, and the lymph nodes and bone marrow in which the cancer resides, affect drug responses and prognosis in leukemia patients. I have also recently taken part in the 2018 Merck Innovation Cup in which I worked as part of a team of six to develop a proposal for a new pharmaceutical. We proposed a new tool to produce an anti-viral against any RNA virus that we could deploy in a pandemic situation. We came first in our category, and I have since been hired as a consultant by Merck, to advise on the implementation of our idea.

Impactful Scientist:

Dr Helena Browne has been a great mentor to me, ever since she first supervised me in my second year. Helena also offered a great deal support in building my career by helping me in finding an internship at the Francis Crick Institute, where I had the opportunity to work for the WHO on the seasonal influenza vaccine, and providing advice, references and confidence when I applied for PhDs. Helena was patron of the Lady Margaret Society, while I was Co-President, and we worked together to rebuild the society, providing talks and dinners to highlight and support female talent within college. I am very grateful for all her support.

