

# Life, Health and Chemical Sciences (LHCS)

## Welcome and introduction from [Dr Eleanor Crabb](#)

I am delighted as the new Head of School to welcome you to this, the third edition of our School newsletter. The School of Life, Health and Chemical Sciences is the academic home for students (undergraduate and postgraduate) and staff in biology, chemistry and health sciences and this newsletter has been put together to bring you a flavour of what is going on in the School. I recently took over from Robert Saunders as the Head of School, having previously been the Director of Teaching, responsible for oversight of our curriculum. I have taught on many chemistry modules and, as well as interests in educational research, my research is related to the preparation of new catalysts and nanoparticles for a range of different applications. I have been at the OU now for over 25 years and am committed to the ethos of the OU and its' staff and students. Hearing your voice is important to us and we would love to have your feedback on this newsletter so please click [here](#) to access the (anonymous) feedback form.



## Introducing our Undergraduate (UG) Qualifications

A warm welcome to students beginning (or indeed, continuing) their studies this October. This is a brief introduction to UG qualifications within our school. We are also delighted to have many students on Combined Stem (R28) and Open Degree (QD) qualifications studying modules within our school. Find out more under the Plan and Discover tabs on the [UG Science website](#) - and chat with your qualification team and other students on the [Science Forums](#). [Next edition will focus on our [PG Qualifications](#)!]



**Biology (R58, Q64 Biology)** Qualification Director is [Hannah Gauci](#) and Qualification Manager is [Nick Adams](#). Our Royal Society of Biology accredited degrees prepare students for careers ranging from biological research to zoo conservation work and policy development. We cover the biology of life, from molecular and cell biology through to the evolution of complex organisms and interactions between species. Students develop investigative skills through home experiments, the Open Science Laboratory, and optional face-to-face field and lab schools. The final project module for the degree provides the opportunity to research a biology topic of your choice in-depth.

**Chemistry (R59, Q64 Chemistry)** Qualification Director is **Rob Janes** and Qualification Manager is **Jo Smythe**. A chemistry qualification can take you in many directions - our modules will set you up both with a solid foundation in the subject and give you the opportunity to study the subject at the "cutting edge". It's an exciting time for us with the introduction of the new modules S248 and S285, together with the recent introduction of new remote chemistry experiments, many of which allow you to control sophisticated laboratory instruments and collect real data from wherever you may be.



**Health Sciences (Q71)** Qualification Director is [Katherine Leys](#) and Qualification Manager is [Nick Adams](#). Our students have a whole range of future aspirations, from research and biomedicine, to public health and counselling. You'll start your qualification by exploring some of the biggest global health challenges, then learn about the human body, mental health and infectious disease. In the new S290 module you'll use some virtual technologies yourself to investigate disease, and you can choose from a range of health topics for your final degree project.

**Natural Sciences (Q64)** Qualification Director is [Eleanor Crabb](#) and Qualification Manager is **Jo Smythe**. The solution to many of the challenges facing society today will involve an interdisciplinary approach. The Natural Sciences qualification is designed to enable you to keep your study of science broad, or to specialise in one of the six discipline pathways. Our students also develop practical and scientific skills delivered via the award winning OpenSTEM labs.



## Meet one of our students



I joined the OU in 2019 as a Health Sciences student, as I was keen to expand on my love and knowledge for human biology. I had recently finished my A-Levels, and although my initial plan was to go to a brick university, and everything was prepared for me to take that path, I ended up registering to study with the OU

just days before the registration deadline, and I haven't looked back since! I quickly became very interested in giving back to my faculty, and to the OU community.

Since then, I have been thoroughly enjoying my studies and have completed the modules DE100 (Investigating Psychology 1), and my favourite module so far - SDK100 (Science and Health). I have also become a student rep on the School of Life, Health and Chemical Sciences (LHCS) Board of Studies to try and use my student voice to help bring positive changes to the school, while also learning about how everything works within our school. I have also become quite involved in the OU community outside the school, and just love being able to give back to this wonderful community.

Overall, I'm so excited for the rest of my journey with the OU and can't wait to see both what I can learn from and what I can contribute to our OU family.

-Tala Al-Shafee

## Meet one of our tutors



My first experience with the OU was as a student on the MBA course while working as a Senior R&D Scientist for a chemicals manufacturer. I greatly appreciated the opportunity to study for a high quality postgraduate qualification around my full-time job.

The course also gave me first-hand experience of juggling a demanding job and intense study programme, an experience which has certainly increased my empathy as an Associate Lecturer/tutor for the challenges faced by students.

For the past 10 years, I have balanced working full-time as a Scientific & Regulatory Consultant with the role of AL on a Level 3 chemistry module. As a consultant, I prepare scientific safety assessments for new food ingredients, which provides plenty of opportunity to introduce my students to real-world case studies via tutorials and TMA questions.

Likewise, the role gives me a great insight into the skills graduates require for the workplace, such as strong fundamental subject knowledge and effective written communication skills. I am able to feed these views back to the OU as a member of the Life, Health and Chemical Sciences External Advisory Panel. At the same time, the Panel provides me with a fascinating preview of the courses under development by the OU. I wish I could take them too but there aren't quite enough hours in the day...

-Elizabeth Lewis

(Tutor on S315 Chemistry: further concepts and applications)

## Research collaboration reaps rewards: [Dr Yao Xu](#)

This year marks the 20th Anniversary of Dr Yao Xu's work at the Open University. During the past two decades, Yao has persisted with his research, while doing his teaching in chemistry. His research is focused on synthesis and exploration of DNA bases, specifically thiolated guanine and thymine (two of the four genetic codes). His work on the first base (thio-guanine) contributed to the discovery that patients taking azathioprine (an anti-inflammatory drug) will increase their risk of skin cancer when exposed to sunlight. It led to many publications, including two articles in Science.

With the second base, Yao and his co-researchers have been developing a novel approach to targeting cancerous DNA by combining thio-thymine derivatives with ultraviolet A (UVA) light. This has led to a string of publications covering chemical synthesis, photo-chemical/physical investigation and clinical trial. The work featured on the cover page of the Journal of Physical Chemistry (<https://pubs.acs.org/doi/10.1021/acs.jpcc.1c01252>) has resulted from collaborative work with Japanese researchers.



## Spotlight on [Professor Hilary MacQueen](#)



I first came to the OU in (whisper it) 1983, as a temporary lecturer in Biotechnology. When the contract ended, I left, but kept in touch in a number of roles: consultant, Tutor-Counsellor, AL and student. Eventually I returned to full-time OU work as a lecturer, senior lecturer and finally professor in Health Sciences. I was the first Health Sciences programme director, and led the team to establish Health Sciences at the OU. I'm delighted at the way this subject area has grown in popularity. Before starting a 'proper' academic career, I did postdoctoral work at the Imperial Cancer Research Fund and the University of Cambridge, so research and a scientific approach to life have always been important to me.

At the OU I have worked on adipose tissue. We developed and patented the first 3D culture system for adipocytes, and this allowed us to study interactions between adipocytes and other cell types in an environment resembling the in vivo situation. We're currently interested in interactions between heart muscle cells and surrounding epicardial adipocytes. For six years I was head of department, and during this period there wasn't much time for lab research. Instead I became interested in ways of supporting students better, particularly those undertaking work-based learning. Most recently I have been part of the team producing [modules on Antimicrobial Resistance for the Fleming Fund](#). These modules are delivered free and aimed primarily at Low and Middle Income countries. They are proving popular, with registrations from 36 countries so far, and we're hoping that they will have a positive impact on the global problem of antimicrobial resistance. Externally I try to promote science wherever I can, and I am a Trustee on the Council of the Royal Society of Biology.

## Impact of the [Understanding Autism](#) BOC - [Dr Ilona Roth](#)



Poor public understanding, lack of services and stereotypical assumptions about autistic people continue to adversely affect many lives.

Towards changing this picture, with Dangoor Foundation funding and a small production team, I developed the free Open Learn Badged Open Course (BOC) [Understanding Autism](#). This accessible introductory course juxtaposes science and practice with the diverse perspectives of autistic

people and family members, and considers cultural differences in attitudes and provision. Our learners include many who work, or plan to work, with autistic people, as well as parents and autistic people themselves. Since launch in September 2018 more than 74,000 people have enrolled and more than 24,000 learners have claimed completion badges, a relatively high number for a BOC.

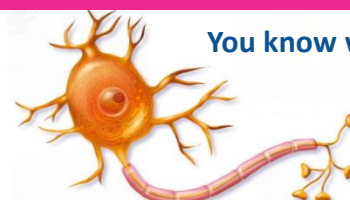
Our feedback indicates that the course has enhanced understanding of, and attitudes towards autism, impacted on professional practices, empowered families and contributed to self-insight for some autistic learners. Our non-UK learners are truly worldwide, based, for instance, in Alaska, and in a Ugandan refugee camp. In 2019 I commissioned a Romanian translation, working with the Director of a Bucharest autism centre. Eight face-to-face workshop sessions involved parents, centre staff and other autism professionals, and I engaged periodically via Skype.

Currently I am finalising a course translation/adaptation for online presentation in France, where there still lingers the stigmatising notion that maternal bonding failures can cause autism, an idea long since abandoned wherever the genetic and neurodevelopmental roots of autism are recognised. With luck the forthcoming OpenLearn Create course version, endorsed by a leading French autism agency, will contribute to enhancing awareness and understanding in France.

Don't forget – we'd value your feedback ([link](#))

The LHCS Newsletter, brought to you by Fi Moorman, Karen New, Eleanor Crabb, Sushila Rigas, and Simone Pitman.

With grateful thanks to Becky Kinge for design.



You know what gets on my nerves?

.....Myelin

Image: BSIP \ Universal Images Group. Pun: original source unknown!