

Life, Health and Chemical Sciences (LHCS)

Welcome and Notices

Welcome to our packed 5th edition!

We would like to mention a few opportunities and things for LHCS students to do over the next couple of months:

- **Paid LHCS intern opportunities being advertised now.** See [Opportunity Hub](#)
- **The Online Summer School will be running again late July/August.** Click [here](#) for more details. Participate and collect a digital badge!
- **Lab schools - click [here](#) for more details.**
- **Over the summer we will be running lots of study sessions across our curriculum on the [Science subject website](#).** Do join in!
- **Check out the module pages on the [Science website](#) 'Discover tab' for any preparatory advice for your planned 22J module.**

Did you see our new TV advert? Click [here](#).

Congratulations [OUSA celebrating 50 years!](#)

Level 2 Chemistry Lab Schools

Over two weeks in April, we welcomed 40 BSc Chemistry students to our teaching laboratories to complete the Level 2 Lab School. We were delighted to have LHCS PhD students Salah Hayek and Katy Woodason join the team of tutors. Salah commented, "I'm honoured to have this opportunity to develop skills in teaching alongside my academic research skills. It is exciting and rewarding to see our undergraduate chemistry students develop their skills. This made my role in supporting them with the practical hints and tips I've gained from my research work, to be a truly delightful experience". And some comments from Katy: "This was my second year helping out with the chemistry lab school, and I continue to be impressed by the students. It was great to hear about everyone's backgrounds and future ambitions made possible by the OU courses they are doing. It was a great confidence boost to have students ask about my PhD.



The lab schools are also a great opportunity for me to try my hand at teaching and gain some confidence in that area. I hope to be involved in the next one!"

-Salah Hayek & Katy Woodason
(LHCS PhD students)

Introducing [Nicola McIntyre](#) Lead Staff Tutor

I joined the OU in 2006, as a tutor on SD329 (Signals and perceptions; the science of the senses) and I have been a Staff Tutor in LHCS since 2013 and Lead Staff Tutor within the school since 2020. I feel extremely privileged to work in this role as I get to work with so many different, amazing colleagues; from module production teams, to curriculum support staff to Associate Lecturers (ALs).

The most frustrating thing about the role is that the job title doesn't give any clue about the work, so I always have to explain it. The role includes supporting tutors to support students, working on module teams to help produce and deliver modules, working with the student support team and working on educational research projects.

I also have had lots of opportunities to get involved with outreach work, in Northern Ireland, where I am based, including events at the Northern Ireland science festival and work at the BBC Stargazing events. In my 9 years of being a staff tutor, I have been involved in the production of SK298 (Brain, mind and mental health) where I helped in the creation of the interactive 3D brain resource which is freely available in the OpenSTEM lab and definitely worth a look if you haven't seen it before. I have also been chair of SD329 since 2016. I really love this part of my job because it allows me to get direct contact with students, and it is a fascinating module, but I may be biased!



SNS 5th Annual National Student Conference report

It was a pleasure and a privilege to attend the conference at the University of Nottingham in April as OU student representatives. It was an invaluable opportunity to network with students from universities across the country and meet other OU students (they are as nice as you would expect!), especially after the past couple of years. As OU students who generally study alone, being part of the natural sciences community was uplifting and invigorating and the conference provided fresh motivation and energy ahead of June exams. The programme included student presentations on many interdisciplinary natural sciences research projects from harvest mice to spin glass, with question and answer sessions. Lucy Wright (Q64) presented a poster about her final research project on identifying novel therapeutic targets for the treatment of atrial fibrillation. We heard from natural sciences graduates now working in fields as varied as climate change and MRI research, presenting a future of possibilities and flexibility not previously considered. The conference dinner was a great chance to discuss further our experiences of an interdisciplinary degree and chat to university lecturers from all over the UK.

We would like to thank the OU for funding our attendance and to send a particular thanks to its qualification staff Jo and Louise: they were welcoming, kind, positive and just as enthusiastic about natural sciences as us! If you have the opportunity to attend this conference in London next year, do apply. It will be a fantastic experience.



Sanushi Dambure, Hazel Fell, Nicola Hunter, Catherine Moody and Lucy Wright with Louise MacBrayne (Q64 Qual Director) & Jo Smythe (Q64 Qual Manager)

Long service awards

Congratulations to the following ALs who have recently clocked 25 years of supporting OU students:

Neville Reed: taught Level 2 chemistry, starting with S246, followed by S205 and currently S215, as well as numerous chemistry residential schools.

Mary Gruner: started with SK220 and has taught on a large number of health science and Access modules, most recently teaching on SXL390.

Alison Lee: started with SD206 and has taught on a number of biological psychology, mental health and psychology modules both at undergraduate and postgraduate level.

Do let us know if you have achieved a Long Service award so that it can be celebrated in the next newsletter!

Meet one of our tutors

I'm an OU first timer having recently been appointed on SXL390. I found the whole experience a bit daunting to start with; there's lots of new IT infrastructure, module requirements and paperwork. However, the entire team (and the IT helpdesk!) have been fantastic!

I've a slightly convoluted journey to my tutor role. I did a biochemistry and pharmacology degree at college, followed by a PhD and post-doc in neuropharmacology. I then studied for a MBChB and worked as a medical doctor in a variety of settings, including intensive care and anaesthetics.

Recently I've returned to academia working in an Addictions Research Group at the University of South Wales. I'm interested in applied sciences and translational research, using skills from both medical practice and academic research. I encourage my students to contextualise their project work for a wide audience and ensure they are underpinned by robust scientific evidence and foundations.

Now that I've got to grips with the eTMA system (!) I'm looking forward to my students submitting their EMAs. It's very refreshing to cover such diverse topics – I'm learning things about mosquitoes for example, that I didn't even know existed!

Outside of the OU, I live in south Wales with my fiancé Alex and our rescue dog Mylo. I love gardening and recently dug a pond and stream, so spend lots of time chasing Mylo out of the water!



-Darren Quelch
Associate Lecturer (tutor)

Virtual Student Internships – please apply, being advertised now!

Over the summer, a small group of **paid** student interns will work closely with experienced LHCS teaching staff across a number of priority areas:

- community building activities, inc. planning a LHCS student conference;
- improving support for students who are joining at Stage 2 or 3;
- supporting students in consolidating their maths skills;
- developing resources to support employability skills and awareness.

The work will focus on supporting Health Sciences, Biology, Chemistry and Natural Sciences qualifications. This will be a great opportunity for developing lots of transferable skills so please consider applying via the [Opportunity Hub](#)



Conference Report – Elizabeth Beston (R58 student)

I consider myself to be very lucky in that I already know what I want to do with my Biology degree once I graduate from the OU, marine sciences. My interests have led me to join a number of related organisations. One of these (Seasearch) alerted me to a local Estuarine and Coastal Sciences Association (ECSA) conference at UEA in Norwich, an opportunity I couldn't miss! The focus of the meeting was the 'Coast and Estuaries of Essex, East Anglia and the Wash'. I have been conducting surveys and studying the only intertidal rocky shore in Norfolk for the last 18 months, gathering organism information and expanding the biodiversity record by over 100 species. I had read somewhere on the OU website 'knowledge is useless unless it is shared' and that has stuck with me, and inspired me to share the data set. The organisers were looking for presenters and poster contributions, and I thought putting the data together for a poster would be a great introduction to a conference and a brilliant experience.

I had never made a scientific poster before, so I reached out to my OU tutor

Thomas Wigley, who kindly offered to review my poster and suggest improvements (thank you Thomas!) As this wasn't a big conference, the informal atmosphere meant I could approach and chat to other attendees with similar interests. I've made so many new contacts which has been a real benefit of attending. I understood most of what was shared (and realised how much I've learnt from my OU course!) and valued learning from more experienced students, professionals and academics. The meeting really broadened my horizons, provided additional context for my area of study and ideas for really good poster presentations!

Measuring the biodiversity of West Runton intertidal rocky shore: a unique habitat on the Norfolk coast
Elizabeth Beston

Introduction

- A species survey of a unique ecosystem on the Norfolk coast
- Historically under-recorded?
- More recent surveys (2016 onwards) suggest great biodiversity which may be important for the subtidal Cromer Shoal MZC (chalk reef)
- Species records have increased by over 5000% since 2009, including some invasive species
- Mixed substrate of chalk bedrock, attached boulders, mobile cobbles and pebbles, coarse to fine sand

Method

- Regular surveying from March 2021 to March 2022
- Historical data from NBN Atlas excluding terrestrial species and ambiguous, duplicate records
- Most historic and recent data collected using citizen science (Seasearch protocols)

Results

Conclusion

- West Runton is more biodiverse than previously recorded
- Regular surveying can help to monitor possible impacts of invasive species, climate change, and physical damage
- The rockpools provide a nursery for many species (including commercially important *Cancer pagurus*)

Next steps

- Quantitative species data to be collected regularly for comparison over time
- Monitoring of temperature, salinity and pH of the intertidal area for climate change impacts

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Do you have something to share or would like to get involved in the Newsletter? We are looking for students/ALs to join the editorial team! We'd love to hear from you at STEM-LHCS-Teaching@open.ac.uk Please include 'newsletter' in the e-mail subject header.

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

With grateful thanks to Becky Kinge for design.

DANDELIONS: DIURETICS AND CAR TYRES

DANDELIONS' MEDICINAL USES

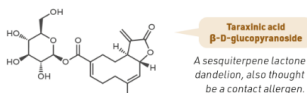
The French name for dandelion is pissenlit ('wet the bed') from their supposed ability to act as a diuretic, increasing production of urine. Research attributes this to several diuretic compounds, but evidence for the effect is mixed. Dandelions' high potassium content helps replace potassium lost through urine.

Potassium content of dandelion leaves versus bananas



Source: US Department of Agriculture - FoodData Central

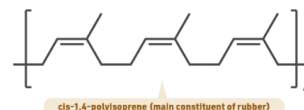
Studies show dandelion extracts or compounds have anti-inflammatory, anti-carcinogenic and anti-oxidative actions. These effects are mostly due to polyphenols and sesquiterpenes, also responsible for the bitter flavour of the leaves.



RUBBER FROM DANDELIONS

The sticky white liquid that seeps out from dandelion stems when they're picked contains natural latex, which can be turned into rubber. The roots of Russian dandelions (*Taraxacum kok-saghyz*) contain a particularly high percentage of latex, making them ideal for rubber production.

1941 30%
Percentage of the USSR's rubber provided by the Russian dandelion during rubber shortages in World War II.



In the past decade, tyre manufacturers have been developing dandelion rubber tyres. Currently bike tyres made from dandelion rubber are commercially available and tyres for cars and trucks will be available within ten years.

