DEPARTMENT OF CHEMISTRY

UNIVERSITY OF OXFORD

Outreach newsletter: November 2022

Welcome to the November edition of our Outreach newsletter!

Please do pass this on to anyone who may be interested in receiving this bulletin. They are very welcome to subscribe using this link. If you wish to be removed, please email outreach@chem.ox.ac.uk.

With best wishes,

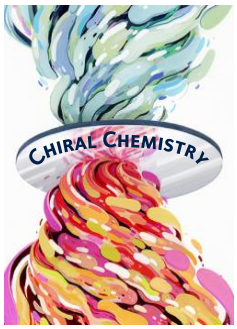
Dr Malcolm Stewart (Director of the Chemistry Teaching Laboratories), Saskia O'Sullivan (Educational Outreach Officer) and Matt Fifield (CTL Administrator)

Contents

Click to view

Upcoming Events:

KS5 Chiral Chemistry Workshops [REPEAT]



Our Chiral Chemistry workshops will continue in the 2022-2023 academic year. This is our online workshop for UK state school KS5 Chemistry students and teachers, which is delivered by our Department Ambassadors. Dates and times have been designed to avoid interruption of lessons. The session focuses on 3D shapes, chirality, the role of chirality in biological systems and the resources available to research chemists looking at proteins, such as the main protease in SARS-CoV-2, the latter being an active area of research in our Department. There is also an opportunity to ask our Ambassadors questions about their research and their academic careers to date.

Students may attend without a teacher, provided we have a teacher contact.

We have now announced dates for the next academic year. The workshop will be delivered on the following dates/times:

REQUEST A SPACE

Wednesday, 9 November 2022	16.00-17.00
Thursday, 01 December 2022	16.00-17.00
Tuesday, 10 January 2023	16.00-17.00
Wednesday, 08 February 2023	16.00-17.00
Monday, 13 March 2023	16.00-17.00
Thursday, 20 April 2023	16.00-17.00

Explore Chemistry - A super-curricular series [UPDATE]

KS5 UK state school students and their teachers are invited to sign up for this series of talks and Q&As. There will be a week to watch a pre-recorded talk (posted online), reflect and note any questions before joining a 45-minute online live Q&A session with the researcher presenting the talk.

Our next talk and Q&A will feature **Priyansh Gujarati** (Ed Anderson Group). The talk – titled *Nature's Chemistry Cupboard: why natural product synthesis?* - will be released on the 17th November 2022, with the Q&A following on the 24th November, 16.15-17.00.

SIGN UP TO THE SERIES

Following Priyansh's talk, we have the following talks confirmed for the next few months:

- Dr Ryan Clark, *Tackling the Climate Emergency: carbon capture and utilization*, Talk released 1st December 2022, Q&A 8th December 2022
- DPhil Matt Haynes (O'Hare Group) *Closing the Loop: Towards Sustainable Chemistry*, Talk released 19th January 2023, Q&A 26th January 2023
- DPhil Matthew Beech (Schofield Group) *Fighting Antibiotic Resistance: Natural and Man-Made Solutions,* Talk released 16th February 2023, Q&A 23rd February 2023

Please note that for Chiral Chemistry and Explore Chemistry places are limited to students from state schools in the UK, Isle of Man and Channel Islands, and where we are oversubscribed, we will prioritise places for students who meet our widening participation and access criteria. Further information about this can be found at https://www.ox.ac.uk/about/increasing-access

Ask a Chemist – Brian Balmer [UPDATE]

We will be concluding our Ask a Chemist series with a session featuring **Brian Balmer** (**Tuesday 15th November, 13.00-14.00 BST**).

JOIN HERE!

Brian studied Chemistry at Oriel College, starting in 1992. He completed his DPhil in Oxford, making ceramic superconductors, after which he accepted a job with consultancy firm Frost & Sullivan in June 2000, where he has remained since. Frost & Sullivan's remit is to help clients identify opportunities for sustainable future growth for their business, and is structured around industry groups. Brian joined as an analyst in the Chemicals team and he now manages that team at a global level, advising some of the world's largest chemical companies, such as Dow, Clariant, Evonik and Arkema, helping them to understand growth trends in their markets.

Our previous Ask a Chemist session was with trainee patent attorney **Lina Cox.** You can watch the session here.

Our session with Brian will be our last Ask a Chemist session. You can watch all of the sessions on our YouTube channel here. We'd also encourage you to check the RSC Future in Chemistry website for further information on careers, and the I'm a Scientist website for Q&As.

RSC Kilcoyne Christmas Lectures [NEW]

The RSC Newcastle upon Tyne & North East Coast Local Section and Newcastle University STEM Outreach presents: The 10th Annual Kilcoyne Christmas Lecture for Schools

Presenting two live lecture-demonstrations by Saskia O'Sullivan (Educational Outreach Officer) and Louise Hutchinson (Senior Technician at the Chemistry Teaching Laboratory) from the Department of Chemistry at the University of Oxford.

Kinetic Considerations focuses on the topic of rates of reaction / kinetics. Students have the opportunity to reflect on key concepts, illustrated with suitable practical demonstrations, as well as find out about relevant research in the Department of Chemistry at the University of Oxford. Intended for a block-booked schools audience (Key Stages 4 and 5). Please note that bookings are capped at max 30 tickets per school to allow a range of schools to attend.

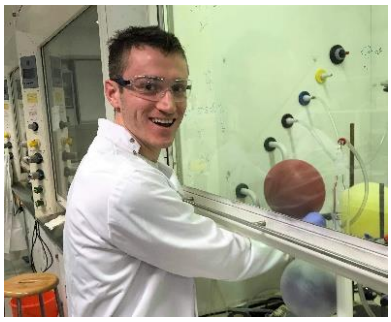
BOOK HERE!

The Chemistry of Celebrations focuses on the chemistry underlying some of our key celebratory events. There will also be some Newcastle University Street Scientists in attendance in and around the venue for the hour (1700-1800) before this evening Public Lecture to entertain and amaze the audience with their science busking activities. This lecture is suitable for audiences of any age. Please be aware there may be bright flashes and/or loud bangs during any of the demonstrations.

BOOK HERE!

Past Events:

Autumn Chemistry Conference 2022 [REPEAT]



We held our third Virtual Autumn Chemistry Conference in September – thank you to all who attended! Two Oxford Chemistry researchers shared their innovative work and journey to Oxford Chemistry, and responded to questions from attendees. You can catch up on each talk and Q&A from both of our speakers:

Ben Shennan is a 3rd year DPhil student in the group of Prof. Darren Dixon discussed his forays into natural product synthesis, targeting molecules isolated from a sea sponge from Papua New Guinea and a Chinese mountain shrub.

Hannah Asiki is a DPhil student on the Wellcome Trust Chemistry in Cells programme. She is undertaking a collaborative project with Prof. Ed Anderson (Department of Chemistry) and Dr Richard Wheeler, synthesising anti-parasitic compounds and investigating their mechanism of action.

WATCH HERE!

Future Events:

KS4 Spring Chemistry Conference 2023 [NEW]

We are holding our second Virtual Spring Chemistry Conference for KS4 (14-16 yrs) students and their teachers on **23rd March 2023 16.00-18.00 GMT**. Two Oxford Chemistry researchers will share about their innovative work, and there will be plenty of opportunity for questions.

Open to Year 10 and 11 students (or equiv., 14-16 yrs) and their teachers interested in finding out more about the cutting edge research happening in the field of chemistry, and hosted by the Department of Chemistry, University of Oxford. Students are welcome to attend unaccompanied by a teacher.

REGISTER HERE!

Confirmed speaker (more TBC):
Denis Hartmann (Booth Group) graduated with a First Class Honours MChem degree from the University of Oxford, St. Anne's College and now works on ways to chemically control DNA expression.

UNIQ 2023 [NEW]

UNIQ is the University of Oxford's access programme for state school students. We prioritise places for students with good grades from backgrounds that are under-represented at Oxford and other universities. Every year more students from diverse backgrounds get offered places at Oxford with help from UNIQ.

Applications for UNIQ typically occur online during December or January. Sign up to the UNIQ mailing list to receive updates and important dates for the summer 2023 course application process.

SIGN UP FOR UPDATES

School / Community Workshops [UPDATE]

Online Primary Workshop: Plastic Fantastic?

This new workshop is for a class of students in Years 5/6 (England and Wales), P5/6 (Scotland) and P6/7 (NI) in a UK primary school. Co-led with the class teacher, the students will interact with Oxford Chemistry ambassadors via MS Teams, whilst undertaking small-scale investigations using materials which have been sent to the school in advance.

BOOK HERE!

Workshops available:

- Wednesday 9th November 2022, 13:30-14:30
- Thursday 1st December 2022, 13:30-14:30
- Tuesday 10th January 2023, 13:30-14:30
- Wednesday 8th February 2023, 13:30-14:30
- Monday 13th March 2023, 13:30-14:30

Image credit: Laughing Kids Learn

Chemistry Teaching Laboratory (CTL) Workshops [UPDATE]

Due to the scheduled construction work associated with the Life and Mind Building, unfortunately we will not be running any CTL workshops in the 2022-23 academic year.

Oxford College Workshops [REPEAT]

You are warmly invited to request a **College Workshop** when arranging a group visit with a College. Find out about your link Colleges here. *If you do not hear back from your link college within 14 days, do get in touch directly with us.*

Small, yet Mighty!

A brand-new workshop focused on fuel cells and linked to the GCSE curriculum. Students explore catalysis, hydrogen fuel cells, and create their own enzyme-fuel cell before tackling a puzzle which includes information about current research in the Department of Chemistry. Minimum of 12/ maximum of 32 students.

'I learnt a lot about hydrogen fuel cells which I didn't know before completing this workshop. Thank you so much!' Student

'I learnt new things that I can adapt into my school science lessons.' Student

'It was brilliant – a really high-quality session.' Teacher

Thinking 3D

A workshop is for KS4 (14-16 yrs) and is designed to showcase the importance of maths and geometry in chemistry through a circus of activities. Most suitable for students who are interested in maths. Minimum of 16 / maximum of 40 students.

"It helped me understand the topic and I learned new things about chemistry' - Student

Unlock the OxBox - Poison Puzzle

This is for KS4 (14-16 yrs) and is a series of practical and theoretical chemistry problems. Minimum of 12 students.

"It is fantastic for the students to have this opportunity to apply their knowledge to a problem-solving activity and so enjoyable for them." – Teacher

Unlock the OxBox - The Lab Lurker

A series of practical and theoretical chemistry problems for KS5 (16-19 yrs) students. Would suit a class where at least half of the students are studying A level (or equivalent) in Chemistry. Minimum 12 students (at least 6 studying Chemistry A level, or equivalent).

You can mix and match Poison Puzzle and Lab Lurker puzzle boxes for groups including KS4 and KS5 students, as long as there is a minimum of 12 students in total (a minimum of 3 from a Key Stage is required).

Other Opportunities:

Astrophoria Foundation Year Chemistry, Engineering and Materials Science course [NEW]

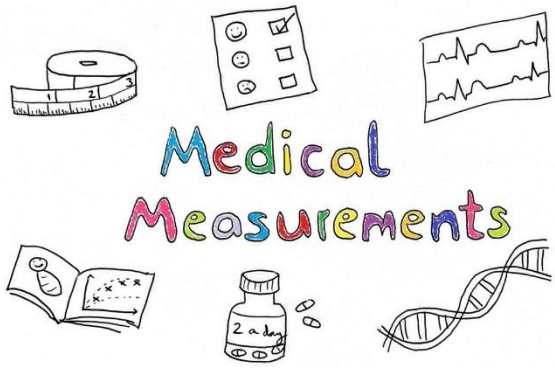
Oxford's Astrophoria Foundation Year is a one-year foundation programme for UK state school students with significant academic potential, who have experienced severe personal disadvantage and/or disrupted education which has resulted in them being unable to apply directly for an Oxford undergraduate degree programme.

The **Foundation Year Chemistry, Engineering and Materials Science (CEMS)** course is designed to give you a solid grounding in key areas, with particular focus on the assimilation of the underlying concepts in these topics so that they can be effectively applied to solve real-world problems. You will follow a subject specific pathway taking modules relevant to the subject you aim to study at undergraduate level, alongside essential maths modules. You will develop subject specific problem-solving skills and undertake an independent mini project.

All applicants for 2023 entry to our Astrophoria Foundation Year courses must apply via UCAS by **Wednesday 25 January 2023 6pm UK time.** You can find further information on the CEMS course here and further information and on the Astrophoria programme here.

FURTHER INFO HERE!

Centre for Personalised Medicine Art Competition [REPEAT]



What can we measure about our health? Is it possible to measure too many things? Should researchers be allowed to use any measurements collected by the NHS? We want to see what you think!

The Oxford Centre for Personalised Medicine is asking pupils in Years 7-9 to create art about measuring things to do with health and disease. There are loads of different things your art could look at: what might be helpful to measure if someone is ill? Are measurements always right? Who should be able to look at a person's healthcare measurements? We can't wait to see your ideas!

You can make a drawing, a painting, a collage, a sculpture – anything goes as long as it's something you can take a photo of. First prize is £100, and the best entries will form part of a display at a Centre for Personalised Medicine art exhibition in Oxford next year.

The deadline for entries is 20th January 2023. More details can be found here: https://cpm.well.ox.ac.uk/art-competition

RSC Women in Chemistry: Star Chemist Baking Competition [NEW]

Introducing the Star Chemist Baking Competition!

We're launching our first ever Chemistry Baking competition, because after all, Baking is Chemistry... but it tastes better! This competition will give you the chance to delve deeper into the Chemistry behind your favourite tasty treats, probing and uncovering the Chemistry behind a perfect bake.

You don't need access to a kitchen to take part- so you could enter at home, school, or your local community group. Enter for a chance to win our fantastic prizes: a £25 book token and a Co-op food hamper! We're accepting entries to our competition in two age categories: 10-13 and 14-16.

Take a look at the Competition! Tab on our website for more details.

RSC Women in Chemistry: Survey [REPEAT]

We'd like your opinion! Please take part in our survey to help us plan future events which would be most beneficial to you.

In the meantime, you can catch up on our live panel events from spring 2022 here. Connect with us on Twitter and Instagram **@women_in_chem**. If you haven't already, take a look at our PowerUP! Challenge which ties in nicely with the RSC's recently launched Global Battery Experiment.

Work experience update [REPEAT]

It is with regret that we are unable to offer work experience placements in the 2022-23 academic year. We do understand that many students are keen to undertake work experience having had these opportunities severely curtailed in the pandemic. We are hopeful to be able to offer placements in the future, which will be have advertised via our website. Please do not send us unsolicited requests for work experience opportunities in the meantime, thank you.

Learning Resources

Featured resource: The Chemistry of All Hallows' Eve and Bonfire Night [REPEAT]

Join Saskia O'Sullivan (Oxford Chemistry) and Tim Harrison (Bristol ChemLabS) as they explore the underlying chemistry of two of our most popular celebrations. This lecture-demonstration was recorded at Bristol ChemLabS in October 2021 by Dr Jonny Furze (Bristol ChemLabS). Watch the video here: https://www.youtube.com/watch?v=KmPvbBtNh44