

Outreach newsletter: December 2022

Welcome to the December 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), Matt Fifield (CTL Administrator) and Natalie Armstrong (Outreach Programmes Manager)

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Upcoming events:

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.



- Dr Ryan Clark's talk, *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
- Dr Matthew Beech (Schofield Group) *Fighting Antibiotic Resistance: Natural and Man-Made Solutions*, Talk released 16th February 2023, Q&A 23rd February 2023

[SIGN UP TO THE SERIES](#)RSC Kilcoyne Christmas Lectures **[REPEAT]**

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

Saskia O'Sullivan (Educational Outreach Officer) and Louise Hutchinson (Senior Technician at the Chemistry Teaching Laboratory) will present two live lecture-demonstrations.

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.

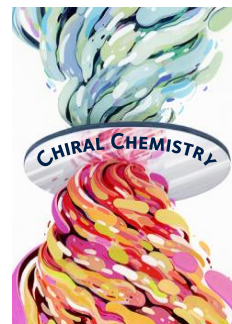
[BOOK HERE!](#)

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!](#)

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.



The workshop will be delivered on the following dates/times:

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

REQUEST A SPACE



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>

Past Events:

Ask a Chemist – Brian Balmer [REPEAT]

We concluded our Ask a Chemist series with a session featuring **Brian Balmer**. 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.



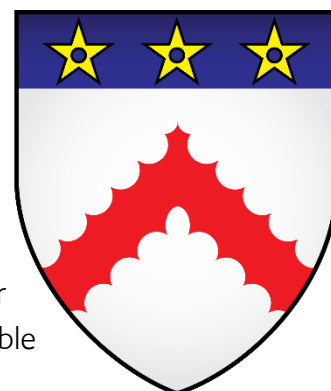
Our session with Brian was our last Ask a Chemist session. You can watch all of the sessions on our YouTube channel [here](#). We'd also encourage you to check the [RSC Future in Chemistry website](#) for further information on careers, and the [I'm a Scientist website](#) for Q&As.

Future Events:

Keble Year 12 Chemistry Taster Day **[NEW]**

Keble are hosting an in-person Year 12 Chemistry Taster Day in Oxford as part of 4 Subject Taster days (including Maths, History and Modern Languages) in February 2023. These immersive, academically-focused events are designed to support state school students in Year 12 in making informed decisions about their studies. These days will offer information about the courses; insight into research, teaching, and career progression; hands-on application advice; and the opportunity to meet Keble tutors and students who share your interests.

The Chemistry Taster Day will take place on **Wednesday 22nd February** between **10.00-15.00**. Applicants should be studying Chemistry and Maths at A-Level. Deadline for applications is 12 noon on **Monday 6th February**.



APPLY HERE!

KS4 Spring Chemistry Conference 2023 **[UPDATE]**

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**. Open to all 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 speakers :

DPhil 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.

Dr Nicola Kelly is a postdoctoral researcher in inorganic/materials chemistry, who first studied chemistry at Oxford, spending her final year working on layered solids with Prof. Simon Clarke. After a PhD in Cambridge supervised by Dr Sian Dutton, working on magnetic solids containing lanthanide ions, Nicola came back to Oxford and the Clarke Group in April 2022 and is now investigating another new set of layered ionic solids. A typical day in the lab involves high temperature synthesis (a bit like baking) and looking at the structures of the materials using X-rays. Outside the lab Nicola is usually found in the playground or reading stories with her 1-year-old son.

UNIQ 2023 [REPEAT]

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 will open in December. 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 [REPEAT]

Online Primary Workshop: Plastic Fantastic?

This 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.

Upcoming workshops:

- Tuesday 10th January 2023, 13:30-14:30
- Wednesday 8th February 2023, 13:30-14:30
- Monday 13th March 2023, 13:30-14:30 (Fully booked)

BOOK HERE!

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 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:



Chemistry for Science teachers part 1 and part 2 **[NEW]**

This live online four-part professional development fully funded course provides an opportunity for science teachers to explore effective strategies for teaching chemistry across the 11–16 age range. We will explore how to teach key topics in chemistry and a number of ways to support your confidence in delivering practical work. Built in to each session, there will be time to discuss up and coming teaching topics, practicals tried out as well, as an opportunity to ask general questions. Please click below for more details.

Part 1: February, March and May 2023, 3.45–5.30pm, online

Part 2: Wednesday January, February, March and May 2023, 6.45–8.30pm, online



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

Oxford's Astrophoria Foundation Year is a one-year fully-funded 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. It will enable motivated students to reach their academic potential through a supportive and challenging academic course aimed at developing their skills, self-belief and academic confidence. Students from the UK interested in studying Chemistry, Engineering Science or Materials Science but have personal or educational circumstances have meant you they are unlikely to achieve the grades typically required for Oxford courses may be interested in choosing to apply for their course with a Foundation Year. There are up to 12 places available on this course. Typical A-level entry requirements are AAB. We do accept other types of qualifications and further information about academic entry requirements is available on the University of Oxford [website](#).

All applicants for 2023 entry to our Astrophoria Foundation Year courses must apply via UCAS by **Wednesday 25 January 2023 6pm UK time**.

FURTHER INFO HERE!



[NEW]

Weds 22 February 2023, 09:30 – 17:00
Trinity College, University of Oxford

Join the Oxford ACS for a Shadowing Day in collaboration with Trinity and Brasenose Colleges, University of Oxford. This day is aimed at Year 12 state school students from African and Caribbean backgrounds interested in applying to Oxford for undergraduate study. Students will have the opportunity to visit Oxford and shadow a current undergraduate who studies a subject they are interested in applying for and immersing themselves in Oxford student life. As we expect to receive many applications for a place on this day, please apply asap. If oversubscribed, we'll prioritise places for those who are eligible for free school meals, care experienced, and/or first in the family to go to university.

Students will be provided with lunch in Trinity College dining hall. Some help with travel reimbursements may be provided on a discretionary basis.

Deadline 10th January 2023. We will then be in touch to let you know if we can offer you a place by the 17th of January 2023.

APPLY HERE!

Exeter Plus 2023 **[NEW]**

Exeter Plus is an Access and Outreach programme at Exeter College, Oxford for Year 12 pupils (or equivalent) who are interested in applying to selective universities including the University of Oxford. We particularly encourage applications from students who have apprehensions about applying to Oxford and would like to find out more. Past students interested in studying chemistry have taken part in academic tutorials, interview workshops, subject-based discussion groups and much more, meeting like-minded peers keen to find out about studying at world-class institutions, such as Oxford. Pupils in Year 12 (or equivalent) at non-selective UK State Schools are eligible to apply. We will select students who are interested in subjects that are offered at Exeter College. You can [view our subjects here](#).

The programme will consist of both in-person visits to Exeter College and online academic activities. Travel costs will be covered by the College, and in-person sessions will take place on Saturdays or during school holidays, to avoid the need for missing classes.

If you have any questions, please contact outreach@exeter.ox.ac.uk.

The deadline for applications is Monday 9th January 2023 at 10am.

APPLY HERE!

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](#).



Did you know...

The 2019 Nobel Prize for Chemistry was awarded for work on the development of the lithium-ion rechargeable battery

These batteries are the ones powering your phone

 bit.ly/PowerUPWiC 

Competitions:

RSC WIC: Star Chemist Baking Competition [REPEAT]

Introducing the Star Chemist Baking Competition!

We've launched 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.

The competition is open to 10–16-year-olds based in the UK, no matter their gender identity or expression, race, religion, political beliefs or activities, sexual orientation, disability, or social background.

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.

ENTER HERE!



chemistryrace [NEW]

The Chemistry Race originated as a Czech competition, founded by Jan Hruběš and friend Martin Balouch and Adam Tywoniak at University of Pardubice in 2015. It was extremely popular among students and grew rapidly. In 2020 it expanded to the University of Cambridge and this year it is coming to the University of Oxford too! Running simultaneously, 3–5 sixth form students from each school can participate, answering questions correctly and as fast as they can. Come and join us for the fun!

Registration will open at noon (12:00) on Monday 5th December. Please note, places are snapped up very quickly.

FIND OUT MORE!

National Scientific Thinking Challenge [NEW]

In 2021, a group of friends from 6 different university Chemistry Departments created a test for Year 10 students to try. It was the middle of the pandemic and learning had been horribly disrupted. We work at Warwick, Southampton, Bristol, Newcastle, Manchester and Oxford Universities. We wanted to encourage students and give them something positive and enjoyable to try at a difficult time.



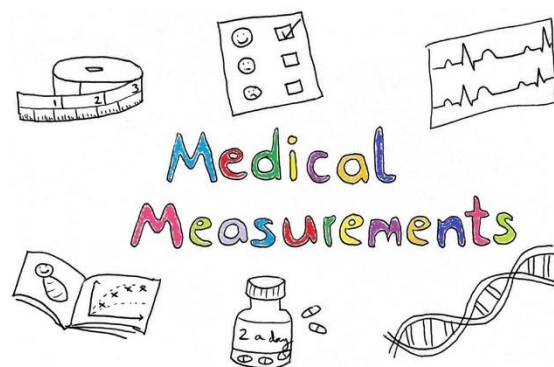
In 2021, we worked with 29 teachers and 1,629 students tried the online test. We were told that it was a positive and enjoyable experience and so we tried it again.

In 2022, we had 95 teachers from 69 schools and 4,397 pupils taking part! For 2023, the free challenge will take place in the last week of April. Any school from anywhere in the UK is welcome to enter and you can enter as many students as you wish from Year 10. For further details please visit [National Scientific Thinking Challenge \(warwick.ac.uk\)](https://warwick.ac.uk/nstc).

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>

Learning Resource

This [YouTube link](#) is useful for those teaching the development of the periodic table. A 5-minute animation provides a detailed visual explanation and simulation of Moseley's ground-breaking scientific experiment. This animation by Martin Wolff is a collaboration between the Museum of the History of Science (MHS) and the Hochschule für Technik und Wirtschaft (HTW) Dresden. You can see the apparatus in the lower gallery at the History of Science Museum, Oxford.

