Summer Research Internships 2026

RSC Missing Elements Grant

Supported by the RSC Missing Element's grant, the School of Chemistry at the University of Edinburgh is addressing the key themes of the RSC Missing Element's report.

Summer 2026 will be the third round of an undergraduate summer research internship programme for Black and minoritised ethnic students.

We are committed to promoting racial equality and diversity within the chemical sciences, and applications are now open for undergraduate students to join our world-leading researchers this summer.

What is the opportunity?

An 8-week paid summer internship, working on a project based in a research group in the School of Chemistry, University of Edinburgh. You will be guided by a supervisor, working at the cutting edge of research, expanding your practical abilities, and improving your problem-solving and science communication skills.

Why apply?

Completing a summer internship means you will engage in real academic research during a key stage of your undergraduate degree. This opportunity will prepare you for undertaking future research projects and allow you to grow in confidence, helping you to navigate the research environment. This additional experience can set you apart from other applicants during your post-graduation job search as you will be able to add this experience to your CV and discuss it at future interviews.

Projects, dates and funding.

You will select your project preferences from the available projects listed at the end of this document. The 8-week project could run between end of May-beginning Sept, with preference for earlier dates in summer, suitable dates to be agreed between successful student and supervisor.

The current pay rate is **£13.55/hour (35-hour weeks, Mon-Fri),** you will either be given an uplift of this rate in lieu of holidays or you will receive annual leave during the internship. This will be confirmed prior to the internship start date.

There is an additional £2,000 available towards accommodation to support the internship. Travel costs to and from Edinburgh would be covered for the successful applicant.

Application Deadline Monday 2nd March 2026 by 12 noon.

Who is eligible?

- ✓ Full time undergraduate students currently in the latter years of a chemistry degree, e.g. second year of a 3 year degree, third year of a 4 or 5 year degree, fourth year of a 5 year degree.
- ✓ Students studying at a university in the UK or Republic of Ireland.
- ✓ Students who self-identify as Black or minority ethnic, based on EUSA campaign definition. Summarised as, *students including those of African, Asian, Arab and Afro-Caribbean descent, those from other minority ethnic groups including Jewish and Gypsy, Roma and Traveller (GRT) students, and those who identify as being mixed race or having multiple ethnicities.*
- ✓ Students must have the right to work in the UK.

We strongly encourage applications from students who are typically underrepresented in higher education, for example those from disadvantaged backgrounds (e.g. low income backgrounds, attended a school with low progression to higher education, free schools meals recipients), first in their family to go to university, care-experienced and young adult carer students, estranged students, student with asylum seeker or refugee status, students who have come to study Chemistry *via* a college route or access course, and students with disabilities.

How to Apply

Project Selection

- Read the project summaries and around the subject area. Feel free to contact the supervisors listed if you wish to know more.
- You must select **at least two projects** you would like to work on, and note these in the application form.

Application

- Application form - **https://forms.office.com/e/hafFFWujgZ**
- Deadline Monday 2nd March 2026, 12 noon.

Interview

- After the closing date, applications will be shortlisted and successful students will be invited for online interviews planned for Monday 6th April.

Internship Awarded

- The successful applicants will be informed *via* email.

Any personal information shared during the application process will be treated confidentially by the interview panel.

Application Deadline Monday 2nd March 2026 by 12 noon.

Through the application or interview, applicants should be able to demonstrate the following essential skills and attributes:

- Great communication skills.
- Self-motivation; and ability to work well with minimal supervision.
- A commitment to professional standards of conduct and safe working practices.
- Resourcefulness and the ability to think on one's feet.
- Ability to work independently and as part of team.
- Proficiency in planning, organisation, problem solving and multi-tasking skills to complete the project in a timely and efficient manner.

In the event of two applicants having the same experience and performance at the interview we will give priority to people who have no previous experience in working in laboratory settings other than teaching labs.

As part of the internship, you will be requested to:

- Present a short talk at a student seminar held over summer. All summer students in the school will be invited with the audience including academic staff, post-doctoral researchers and PhD students. This familiar audience is a great place to practice your science communication skills and gain presentation experience.

- Submit a short summary of your research (max 3 page), e.g. aims, key findings, problems encountered, data figures or future work. A copy of this may also be useful for your supervisor for future students to work from.

- A short reflective summary of how you found the internship (max 1 page). This can comment on transferable or technical skills gained, experiences you had or include any personal reflections.

You will not be assessed on these activities as your internship is about gaining experience of the academic research environment. The reports will be shared with the RSC to demonstrate the value of their financial support to the student experience.

Any questions about the internship application contact Dr Jenny Gracie - jenny.gracie@ed.ac.uk.

Apply Here - https://forms.office.com/e/hafFFWujgZ

Applications by Monday 2nd March 2026, 12 noon.

Application Deadline Monday 2nd March 2026 by 12 noon.

THE UNIVERSITY of EDINBURGH
School of Chemistry

ROYAL SOCIETY OF CHEMISTRY

Summer Student Internships 2026

Available research projects supported in the school of chemistry, if you have any questions about the available projects, email the academic contact listed under the project title.

1. Visible light-mediated reactions
2. Dual-Pocket Ligands for s-Block Metals
3. Selective recovery of bismuth from e-waste streams as supramolecular capsules
4. Time-resolved Imaging of Photochemical Reactions in the Atmosphere
5. Mechanistic Investigation on Transition-Metal-Free Formylation of Aryl Halides
6. Disulfide Directed Self-Configuration in Conjugated Oligomers
7. Examining non-covalent interactions
8. Deep breaths and chill out!
9. Squeezing heat out of molecules
10. Digital automation in chemistry
11. Coding an equation balancer

1. Visible light-mediated reactions

Prof. Ai-Lan Lee - AiLan.Lee@ed.ac.uk

This will be a synthetic organic chemistry project, where we will harness energy from visible light to develop more sustainable organic reactions. In this project, we aim to investigate and compare visible light-mediated reactions that have been developed within our research group in continuous flow vs. traditional batch reaction conditions. You will therefore learn modern synthetic organic chemistry skills (use of photoreactors and continuous flow reactors), as well as modern analytical techniques (e.g. NMR spectroscopy) required to interpret your results.

Research Group: https://ailanleegroup.wordpress.com/

2. Dual-Pocket Ligands for s-Block Metals

Dr Stephanie Urwin - Stephanie.Urwin@ed.ac.uk

Choosing the right ligand is fundamental to catalysis, as selecting the optimal structure to facilitate the desired transformation can be a challenging task. Your role in this project to explore the potential of our dual-pocket chelating ligands, focusing on their application in bimetallic main group chemistry. You will synthesise lithium, sodium and magnesium complexes, gaining hands-on experience in the preparation and handling of air-sensitive compounds. Throughout this project you will use techniques such as NMR, MS and single crystal X-ray diffraction.

Application Deadline Monday 2nd March 2026 by 12 noon.

3. Selective recovery of bismuth from e-waste streams as supramolecular capsules

Prof. Jason Love & Dr Charlie Simms - csimms@ed.ac.uk

Bismuth is a critical raw material often used in electronics as a solder or in thermoelectric devices and is poorly recycled. Pyrometallurgical routes for its recycling are energy intensive, inefficient, and produce harmful pollutants whereas chemical methods are more efficient but require strong acids and elevated temperatures. As such, this project will appraise a sustainable chemical method for the selective recovery of bismuth from e-waste streams, based on supramolecular capsule chemistry. In this project, you will evaluate mild methods of leaching bismuth from e-waste, assess the use of supramolecular capsules for the selective separation of bismuth, and develop a whole, atom-efficient process for the recycling of bismuth from e-waste. You will gain experience in designing new experiments for chemical separations, chemical synthesis, coordination chemistry, and supramolecular chemistry, as well as using a range of analytical techniques such as NMR, ICP, and X-ray crystallography.

Research Group: https://jasonlovegroup.wordpress.com/
Relevant Papers: https://doi.org/10.1021/acsomega.3c04611, https://doi.org/10.1039/D5NJ03094C, https://doi.org/10.1038/s41467-022-32178-3, https://doi.org/10.1021/acssuschemeng.4c03063

4. Time-resolved Imaging of Photochemical Reactions in the Atmosphere

Dr Alice Green - alice.green@ed.ac.uk

Modern laser technology allows us to directly measure molecular dynamics with femtosecond (10^{-15}s) timing resolution, the timescales over which the fastest nuclear motions at the heart of photochemical reactions occur. Recent work in my group has used this laser technology (specifically at international X-ray free-electron laser facilities) to experimentally study the ultrafast photochemistry of small organic carbonyl molecules with spectroscopy and structural imaging techniques. These species are of particular interest due to their presence in the earth's atmosphere. Consequently, we need to be able to fundamentally understand and model their light-driven chemistry. Within this project, you will help to analyse a rich dataset that has emerged from these recent state-of-the-art experiments. As well as learning about the specifics of how these complex experiments are performed and what they can teach us about molecular photochemistry, you will develop a range of data analysis and programming skills.

Research Group: https://chem.ed.ac.uk/green-group
Supervisor Profile: https://edwebprofiles.ed.ac.uk/profile/alice-green

5. Mechanistic Investigation on Transition-Metal-Free Formylation of Aryl Halides

Dr Andrés García-Domínguez - v1agarc9@exseed.ed.ac.uk

The project will use physical organic chemistry tools (e.g., Hammett analysis) to provide insights into the mechanism of formylation of aryliodides in DMF with disilanes as sacrificial reductants.

Application Deadline Monday 2nd March 2026 by 12 noon.

6. Disulfide Directed Self-Configuration in Conjugated Oligomers

Dr Iain Wright - iain.wright@ed.ac.uk

Disulfide bonds can form between any two spatially adjacent atoms of sulfur. They are exemplar dynamic covalent bonds and therefore fluxional in character. Just as nature harnesses disulfide bonds in cysteine residues to control the three-dimensional (3D) shape of proteins, they can also be used by materials chemists to perform a range of self-assembly functions including self-healing and self-organisation in polymers, and self-reconfiguration or cyclisation in small molecules. The goal of this project is to harness self-reconfiguration and induce macrocycle formation in oligophenylenes featuring an odd-number of thiol moieties. The use of an odd-number of thiols will facilitate both inter- and intra-molecular disulfide formation which will be exploited to form macrocycles. The project will encompass molecular synthesis, analysis by NMR and UV/vis spectroscopy and scoping for potential applications in organic electronics or surface chemistry.

Relevant Paper: https://doi.org/10.1002/chem.202000728

7. Examining non-covalent interactions

Prof. Scott Cockroft - scott.cockroft@ed.ac.uk

Projects are available that employ synthetic and/or computational chemistry to examine the nature and energetics of molecular interactions. In short, we synthesise molecules that fold in response to molecular interactions and use NMR spectroscopy to quantify the energetics. Computational chemistry is used to design molecules and to dissect the energetic contributions (solvent effects, electrostatics, London dispersion, polarisation). Please feel free to contact scott.cockroft@ed.ac.uk to discuss ideas.

Research Group Publications: https://chem.ed.ac.uk/cockroft-group/publications

8. Deep breaths and chill out!

Dr Claire Hobday - Claire.Hobday@ed.ac.uk and Cecilia Hong cc.hong@ed.ac.uk

Having been the focus of the 2025 Nobel Prize in Chemistry, metal organic frameworks (MOFs) have been well studied, in particular, for their ability to trap and release molecules within the crystalline framework. Some frameworks are more flexible than others and upon the intake/release of guest molecules, can expand or contract, very similar to how the human lungs operate. This project aims to further understand the atomistic mechanism of the framework *breathing*. Using computational techniques, such as molecular dynamics, make the atoms dance and uncover how this breathing can be applied to the field of refrigeration! This project is well suited to a student with an interest in learning and using high-performance computing (HPC) resources, programming, and molecular simulations.

Relevant Papers: https://doi.org/10.1002/anie.201509352, https://doi.org/10.1039/D5TA04373E, https://doi.org/10.1021/acs.chemmater.2c00137

Application Deadline Monday 2nd March 2026 by 12 noon.

9. Squeezing heat out of molecules

Dr Claire Hobday - Claire.Hobday@ed.ac.uk

This project looks to measure the solid-state cooling properties of ionic plastic crystals. These crystals can be chemically tuned to alter their cooling temperatures and the pressures required to drive solid-state cooling. This project will use high-pressure differential scanning calorimetry to measure the heat flow of OIPCs, to be able to determine the reversibility of the process and the pressures needed. This will drive our understanding of how chemical modification affects these heating and cooling properties.

Relevant Paper: https://doi.org/10.1039/D5TA05423K

10. Digital automation in chemistry

Dr James Cumby - james.cumby@ed.ac.uk

Our research is producing increasing amounts of experimental data, and linking it back to the original chemical sample becomes challenging to achieve manually. In this project, you will develop code and digital tools to automate this process by linking our electronic lab notebook (ELN) with external instruments. An extension will be to create visualisation tools for these data within the ELN, contributing to open-source software used world-wide. This project is ideally suited to a student interested in developing their coding/computational skills (training will be provided), and keen to gain more experience with cutting-edge research infrastructure. The outcomes of the project will directly enable faster scientific research, and could be rolled out to the wider international community.

Research Group: https://chem.ed.ac.uk/cumby-group

11. Coding an equation balancer

Dr James Cumby - james.cumby@ed.ac.uk

Have you ever arrived at the lab, only to discover you haven't balanced an equation to know how much to weigh out? Now imagine the same problem, but you are working in a glovebox or cleanroom, with no access to paper - oops! This is where 'ChemBalancer' (a Python-based equation balancer) might be useful... More seriously, synthesis planning for inorganic materials often has multiple possible equations, and the one you pick often depends on the chemicals available 'in the cupboard'. The goal of this project is to take our existing Python code for balancing equations, and develop an improved graphical interface to enable it to work better 'in the lab'. A project extension will be to integrate it with our existing electronic lab book, enabling high-throughput experiments with robotics. This project is ideally suited to someone with an interest in developing code to enable science, and gaining experience of using digital tools in the lab. Training will be given in the skills required, including how to develop code using large-language models.

Research Group: https://chem.ed.ac.uk/cumby-group

Application Deadline Monday 2nd March 2026 by 12 noon.