

Chemistry Admissions

March 2011 NEWSLETTER

Elijahou Dangoor Sponsorships

We are proud to announce that six of our first year Chemistry undergraduates have each been awarded one of the **prestigious** Elijahou Dangoor Scholarships. The Scholarships were created by Dr Naim Dangoor to give talented students the opportunity to study science, technology, engineering and mathematics subjects at leading universities in the UK, including York. The awards were made on the basis of academic ability, potential and performance at interview. Our students will be invited to be involved in encouraging school students to continue the study of STEM subjects at university.



Dangoor winners 2010/11

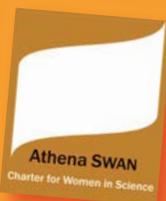
"I am so glad that I decided to come to York as I've found everyone to be extremely welcoming, friendly and helpful"
Year 1 Dangoor winner

Undergraduate Vacation Bursaries

To help our students further their practical skills, and to develop their research interests, starting 2011, the Department is introducing a new scheme that offers up to **10 bursaries** for our Chemistry undergraduates. A bursary will fund a student to spend up to 8–10 weeks over the summer vacation undertaking a research project supervised by an academic member of staff.

Exciting news

We hope that this newsletter will help you to get a sense of the excitement and enthusiasm that we all share at York for Chemistry. The University of York and the Chemistry Department have had a fantastically successful year. The University was awarded the Times Higher Education "University of the Year" for 2010 and the first phase of a £750 million campus expansion was completed on time and under budget, winning York its third consecutive Queen's Anniversary Prize.



The Chemistry Department received an Athena SWAN gold award for its leading and pioneering work in equality. The department is the **only one in the UK**

to hold such an award, which is open to all UK Science departments and is given by the Equality Challenge Unit. Chemistry at York also achieved excellent results in the latest top league tables. We ranked **4th** in both the *Guardian* 2011 league table and in the *Times Good University Guide 2011* and **5th** in the *Independent* 2011 league table.

Sponsorship Winners

The Department typically offers up to eight scholarships for UK-based students and up to five scholarships for overseas students. In 2010 we introduced an Admissions Scholarship to support our undergraduate admissions activities – the recipient will act as an ambassador for the department on open days, pre-application visit days and interview days. The scholarship provides an **exciting opportunity** to further develop transferable skills, including communication, teamwork and interpersonal skills.



"These league tables confirm the national standing of our Department in both teaching and research. York and Oxford are the only UK Chemistry departments to appear in the top 5 of all three league tables".

Professor Richard Taylor
Head of Department

These successes have been mirrored by applications; there has been a 100% growth in the number of undergraduate applicants to Chemistry in York over the past 5 years and we have expanded our undergraduate cohort. This has led to **major developments** on the buildings front. "The Hub" was opened in October 2010 and a major new research building and a new undergraduate teaching laboratory complex are currently in the final design stages, with work due to start shortly.

There has never been a more exciting time to carry out a Chemistry degree at the University of York, or to undertake research here. If you would like to find out any more information about the Department you are welcome to contact us, or best of all **come and visit us**.



Dr Andrew Parsons
Undergraduate Admissions Tutor,
Deputy Head of Department

Katrina Sayer
Undergraduate Admissions Officer



Some of our Departmental winners 2010/11 with the Head of Department

We also provide a **free** teaching package to **all** of our students, which includes a lab coat, safety spectacles, a molecular model set, laboratory equipment, Chemistry data book, detailed lab scripts, a skills record and a one-year membership for both the RSC and ChemSoc (our student run Chemistry Society).

Come and visit us

Our visit days offer an excellent opportunity to find out about the University of York. Most importantly, you'll be able to get a 'feel' for the University, which will help you decide whether or not York is somewhere you'd like to spend your university years.

2011 August Visit Days

During August we will be holding a series of Departmental Open Afternoons for prospective chemistry students. These will be held on **3, 9, 24 and 31 August**.

The visit day will involve a free lunch for all guests, a tour of the department's teaching and laboratory facilities, a campus tour, an opportunity to chat informally to members of staff, as well as opportunities to meet our current students and talk to them about what it is like to live and study at York.

Further details including how to book a place can be found on the York website: www.york.ac.uk/chemistry/undergraduate/visitdays/

2011 University Open Days

The university will be holding Open Days on **Wednesday 6 July** and **Saturday 1 October**, for further details including booking: www.york.ac.uk/admin/uao/openday/

We have organised a number of talks in the Chemistry Department during the day and you will also have the opportunity to have a tour of our teaching and research laboratories. Members of the admissions team and current undergraduate Chemistry students will also be on hand.

Our Open Days in 2010 were extremely well attended and we received some excellent feedback from visiting students and their parents, including:

"I visited the Chemistry Department at York both for an open day prior to applying and again for an interview when I was offered a place. I was impressed by the enthusiasm and friendliness of the staff, the facilities and the content of the course"

Student visitor

These open days are primarily for prospective undergraduate students, but the Chemistry Department organises a Postgraduate Open Day in the Autumn Term (for further details contact: chemgrad@york.ac.uk)

What's New on the Facilities Front ?

Sports Village

The University's plans for a £9 million new sports facility on its campus expansion at Heslington East have been given the go-ahead. The first phase of the York Sports Village will feature a competition-standard pool, 100 station gym, 3G astroturf pitch and three further five-a-side pitches. Construction work is scheduled to start in Spring 2011, with the facilities opening for business in July 2012. The master plan includes a second phase that will feature further grass pitches and indoor sporting facilities including a 150-station computerised fitness suite.



Artist's impression of the Sports Village



"York Sports Village will add significantly to the excellent sports and recreational facilities that we already provide."

Professor Brian Cantor
Vice-Chancellor

University Library

The Library is currently undergoing a £20 million refurbishment that will provide a **world-class** library for students, staff and researchers. The refurbished library will offer a range of 21st-century technology and media-rich learning, teaching and research environments in proximity to specialist support and physical collections. In Easter 2011 the Harry Fairhurst building will open, providing IT-rich study and research areas, linked directly to the JB Morrell Library. Students and researchers will have access to a large number of new spaces, including reading areas, group studies, open collaborative zones, specialist research areas, research hotels and a bookable PC classroom.



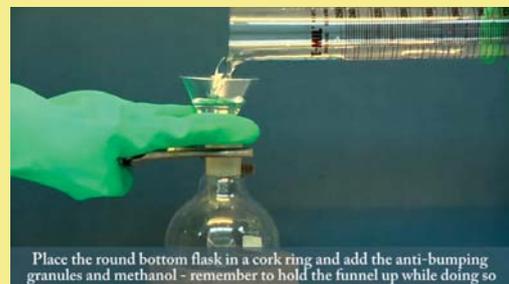
Artist's impression of one of the new group study rooms on the second floor



New fumehoods in the undergraduate teaching lab

Teaching Lab Developments

Over the last two years, in collaboration with some of our students, we have been developing a range of electronic and video resources to support our undergraduate practical course. For example, we have produced an **extensive range of video clips** explaining fundamental practical techniques (e.g. how to use a rotary evaporator) and how to operate various laboratory instrumentation, such as an infrared spectrometer. Through funding from the University of York, we have now installed 50 PCs in our teaching laboratories so that our web-based e-learning tools can be viewed by our students to enhance their experience of learning practical chemistry. We also regularly update our equipment and instrumentation in the teaching laboratories. For example, **this year we purchased an additional Fourier transform infrared spectrometer and two new UV/vis spectrometers, together with Peltier thermostatted cell holders** which will be used for kinetics experiments.



Place the round bottom flask in a cork ring and add the anti-bumping granules and methanol - remember to hold the funnel up while doing so

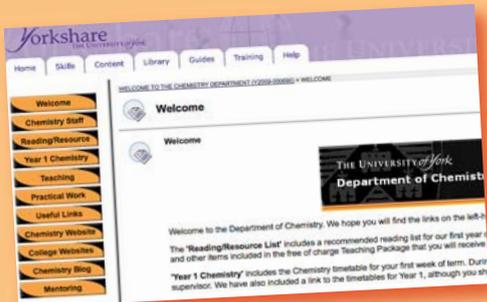
From our video archive - setting up a Soxhlet extraction

New Buildings for Chemistry

The university has initiated a multimillion pound investment in new buildings for Chemistry. New, **state-of-the-art facilities** will be provided **for both research and undergraduate laboratories**. The first stage of this exciting development involves the construction of a new £6.5 million research building, adjacent to our Dorothy Hodgkin Research Building, which will provide accommodation for around 100 researchers. In addition, a research team, led by Professors Simon Duckett (Chemistry) and Gary Green (Psychology), have secured a £4.36m grant from the Wellcome Trust and Wolfson Foundation, as well as financial support from industrial partners and the University, to build a Centre for Hyperpolarisation in Magnetic Resonance Imaging at York.

Virtual Learning Environment (VLE)

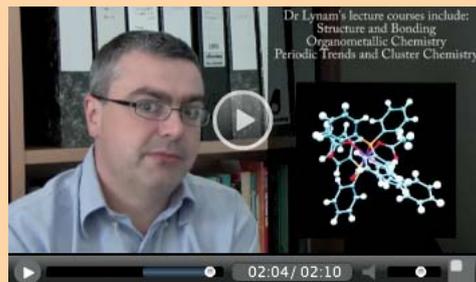
VLE and New Starters



After confirmation in August all new starters will receive details about enrolling on line. After you have enrolled you will then be able to access the Chemistry VLE (Virtual Learning Environment) site for new starters. This will contain **lots of information** about colleges, Chemistry staff, a 'blog' for new starters, a reading list, short videos related to our practical course along with other useful pieces of information to help you prepare for your studies. We will write to you in the summer giving details of how to access the VLE.

Admissions Videos

To get a feel for the real excitement and enthusiasm that we at York share for our teaching and research, we have extended the range of video clips available on our website.



Dr Jason Lynam discusses aspects of his research

In addition to our general admissions video, we have added a welcome to the department video by Dr Andrew Parsons, and a video discussing our admissions procedure by our Admissions Officer, Katrina Sayer. We also have clips on some aspects of our research - our Head of Department, Professor Richard Taylor, talks about some of his **synthetic organic chemistry** research, Professor Lucy Carpenter discusses her **environmental chemistry** research and Dr Jason Lynam outlines his interests in **inorganic chemistry**. Finally, we have added a clip, made by three of our undergraduate Chemistry students, who discuss some aspects of our teaching. To view the videos please see:

www.york.ac.uk/chemistry/undergraduate/media/geninfo/

Bid Success to Create a VLE Site for Prospective UG and PG students

The Department has been successful in receiving funds to create an exciting new VLE site for prospective undergraduate and postgraduate students. The funds awarded will be used to create a '0' entry site which will be accessed by prospective students early in the application process - at enquiry stage or point of application.

The site, which will be live in September 2011, will address the following aspects of university life which have a major influence on the experience of our students:

- The quality of teaching
- **The quality of our research**
- Level of academic support
- **Learning and library facilities**
- Global aspects of our undergraduate courses
- **A central resource for supporting international students.**
- This initiative will be showcased at the Annual York Learning and Teaching Conference (2011). The aim of the conference is to explore how we can maintain the most valued elements of the learning and teaching community at York, whilst also ensuring that the University remains at the forefront of higher education provision. For further details see: www.york.ac.uk/staff/teaching/sharing/sharing-practice/conference/2011-info/

Our website includes a Q&A section which features **answers to popular questions** relating to undergraduate admissions, for example:

Do I require an A level in Maths?

Maths is a very useful subject to help support some of the quantitative topics in a Chemistry degree course. However, we do not require students to have A level maths. In Year 1, we provide a maths skills course (taught by Chemistry staff) to support those students who have not taken Maths beyond GCSE (or equivalent).

Will I have to attend an Interview?

For applicants who are based in the UK, we make it a policy always to interview applicants before we make them an offer of a place. The interview day is not only aimed at finding out more about you, it is very much an opportunity for you to see the Department, the teaching facilities we have to offer, meet members of staff and see the campus.

Do I choose which college to be in?

The Department of Chemistry is unique at York in that Chemistry students are taught in college groups for the small-group teaching sessions (weekly tutorials and workshops). All teaching takes place

Your questions answered

Our frequently asked questions are grouped under the following headings:

- ▶ The course
- ▶ The application process
- ▶ Overseas, mature or non-standard applications
- ▶ Fees, bursaries and scholarships

The course

Show all / Hide all

Should I do an MChem or a BSc degree course?

How many hours' teaching will I have, and in what size groups?

How do you organise practical work?

within the Department of Chemistry. Many students will live in the same college as their teaching group. Prior to applying for accommodation we write to students publicising the different colleges, including their distinctive features, and information on types of rooms together with costs - for further details:

www.york.ac.uk/about/departments/support-and-admin/accommodation/new-students/undergraduates/room-types/

Professor Dave's Podcasts

Professor David Smith has produced a series of podcasts on amazing molecules, which can be viewed on Youtube.



From Professor Dave's Friday Night Curry Tutorial

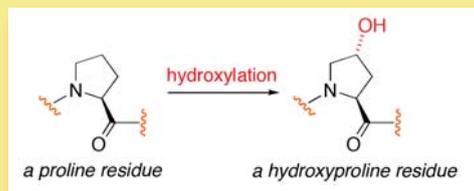
For the latest podcast by Professor Dave at York, "codeine" - available over the counter, see: www.youtube.com/watch?v=9khsi4nA4TE



Research News

University-Business Partnership Helps to Solve Silica Puzzle

Scientists at York working with an industrial partner have helped to reveal more about the biochemistry of one of nature's most distinctive marine organisms.



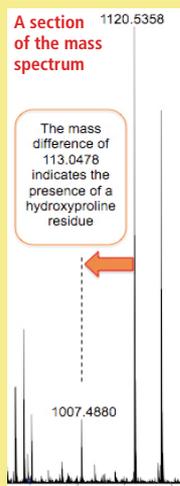
Collagen is a protein that contains hydroxyproline residues, which are formed by an enzyme-catalysed hydroxylation of proline

established the process was due to the presence of hydroxylated collagen. The research is published in the journal *Nature Chemistry*.

Professor Jane Thomas-Oates, of the University's Department of Chemistry, and bio-archaeologist Professor Matthew Collins and Dr David Ashford, of the Department of Biology, collaborated with Bruker to carry out the analyses. They used the maXis instrument to show that the primitive protein in the stalk had a distinctive extra hydroxyl group that allows the silica spicule to form. Professor Collins said: *"It has this unusual characteristic that allows silica to develop along the length of the fibre. These spines take hundreds of years to grow and they embed themselves in the sand in the deep ocean. It was such an unexpected structure. What bioengineering in evolution has done is fantastic. Just by putting in this extra hydroxyl grouping it has done something completely different."*

Since the experiments in Germany, the Centre of Excellence in Mass Spectrometry at the University of York has now taken delivery of a similar mass spectrometer from Bruker.

The Department houses a Centre of Excellence in Mass Spectrometry, the centrepiece of which is an FT-ICR mass spectrometer



"This was a great example of the way scientists can work with industrial partners to address challenging scientific problems."
Professor Jane Thomas-Oates

Web Resources for our Recommended Textbook

Our recommended textbook for the first year of our Chemistry course is **Chemistry³: introducing inorganic, organic and physical chemistry**, published by Oxford University Press. The carefully-layered approach of this textbook builds on our students' prior knowledge to bridge the gap between school and university-level Chemistry, providing them with a firm understanding of the fundamental principles which they can augment during later studies.

Chemistry³ is supported by a full teaching and learning multimedia package including interactive exercises which encourage students to actively learn. Student resources include: Interactive and animation-based activities; 3D rotatable molecular structures; drag-n-drop exercises; learning outcomes, summaries and key equations; and a student solutions manual. To access the online resources see:

www.oup.com/uk/orc/bin/9780199277896/

A drag-n-drop question, on naming an organic compound, taken from the online resources

Question 3

Burrows et al. Chemistry³

prefix parent suffix

amino bromo butyl
chloro ethyl hydroxy
iodo methyl nitro
propyl ethane benzene
butane hexane octane
pentane propane anal
aldehyde propanoic acid and
anone anoyl chloride ene
yne ylamine

Reveal answer

www.york.ac.uk/Chemistry

Royal Society Honours for two York Chemists

Two Department of Chemistry professors, Gideon Davies and Robin Perutz, have been elected as Fellows of the Royal Society. Election to the Fellowship of the Royal Society is recognised worldwide as a sign of the highest regard in science.

Gideon Davies, whose research focuses on structural enzymology and sugar chemistry, gained a PhD at the University of Bristol before moving to the European Molecular Biology Laboratory in Hamburg and then to York with subsequent research periods in Hamburg, Grenoble, Uppsala and British Columbia:

www.york.ac.uk/chemistry/staff/academic/d-g/gdavies/



Robin Perutz has research interests in organometallics and their photochemistry, reaction mechanisms and spectroscopy. He studied at Cambridge and

Newcastle, gaining his PhD in 1974, then he worked in Muelheim, Edinburgh and Oxford before joining York in 1983:

www.york.ac.uk/chemistry/staff/academic/o-s/rperutz/

Professor Dave Smith awarded the 2011 'Bob Hay Lectureship'

This prestigious Royal Society of Chemistry award is given to a younger chemist working in the field of supramolecular chemistry. As well

as the award of a trophy, the lectureship involves the recipient giving a plenary lecture at the International Symposium of Macrocyclic and Supramolecular Chemistry:

www.york.ac.uk/chemistry/staff/academic/o-s/dsmith/



Happening Event

James College chemists emerged victorious in the 2010 Year 1 'Happening' exercise pipping Goodricke College to the industrially-sponsored first prize. Each year, the Happening pitches the six Year 1 college groups into competition with each other in a **1-day business game** rooted in issues relating to demanding chemical synthesis in a commercial setting.

This year the realism of the activity was ensured through the direct involvement of two representatives from Lubrizol, an international-sized manufacturer of fuel and lubricant additives. As well as helping to devise and deliver the proceedings on the day, Lubrizol sponsor a prize fund of around **£300** allowing all members of the winning team to leave with a book prize relevant to their course. Furthermore, all participants benefit from a free lunch and the opportunity to develop team working, problem solving and presentation skills in a spirit of friendly rivalry.



A number of Year 1 and Year 2 students were also able to speak directly to the Lubrizol staff about Year 4 industrial placements and summer placements at the Derbyshire headquarters.

Meet the Uni



Last July, the Department once again contributed to the annual **Meet the Universities** event in London. The event, organised by the RSC, is designed to be informal, offering potential students (and often their parents too) the opportunity to question university representatives at length about their courses and what they offer to students. It is not designed to replace the need for a visit to a university's own open day, but it can help students to narrow down their options in advance. The next event will be held on **Saturday 2 July 2011**, at Salters' Hall in London, and if you are able to attend, we look forward to speaking with you about our Chemistry degree courses.

York, Industry or Abroad?

Year 4 of our MChem programme has a particular emphasis on research and is designed to reinforce and build-on the key chemical principles and practical skills you learn in Years 1-3. You will learn some of the **latest developments in chemical research** by completing a substantial research project and develop a range of skills, such as communication, analysis and interpretation, oral and written presentation, problem-solving and critical assessment. Year 4 of our MChem programme can be spent either:

- at the University of York
- at one of our partner universities abroad
- in paid and structured industrial training.

Our Chemistry courses at York are **distinctive** in offering this final year element of choice.

Postcard from Finland

As a fourth year student the opportunity to carry out my masters research abroad really appealed to me. It was a fantastic opportunity to experience a different culture, I had an amazing year and met so many nice people from all over the world. The ability to work at a different university as part of the same degree course within a research group was very helpful to me in understanding the research world of Chemistry around us. After 3 years lab experience in York I felt more than prepared to engage in this new environment. Studying in Finland at the University of Helsinki was very rewarding as it's a world class research institute and as all of the masters courses were taught in English, there was plenty of choice of topic area's to study. The Finnish people were very, very friendly and I got to experience life as a Finnish chemist by taking part in traditional Finnish activities from formal dinner "sitsit's" to sauna parties. **I am still in contact with many friends I made during this year** and I plan to go back to Finland and meet up with both my supervisors to keep them informed on how my current PhD research is going as well as the many Finnish friends I made.

Richard Gammons February 2011



Reflections on Seville



"I cannot overstate how amazing the year in Seville has been and I feel honoured to have had the chance to study in such a vibrant, cultural and historically rich city".

"My studies in Seville have consolidated and built upon what I learnt in York and I feel confident that I now have the foundations to contribute to the international scientific community"

Comments from **Aimee Taylor**, who spent the fourth year of her MChem course at the Universidad de Sevilla

Progress Report

In January, our fourth year MChem Industry students, and their industrial supervisors, visit the department to discuss the progress of their research projects with academic staff.



Some of our fourth year MChem students

Careers – Life after York

What do our students do?

The majority of our graduates go on either to scientific careers or to further study (this includes higher degrees and teacher training). Chemistry at York typically has an **excellent 97% 'Positive Destination' rate**, that is the proportion of students who either continue their studies or go into permanent employment. This is 4% above the national average for Chemistry graduates. For further information on careers:

www.york.ac.uk/services/careers/depts/index.cfm?pagename=chemistry

"In 2009 an impressive 80% of York Chemistry students held a graduate job – this places York equal second in the UK for Chemistry graduate prospects."

Careers for Chemists

One in every five pounds in the UK economy is dependent on developments in Chemistry research, according to a new report commissioned by the Royal Society of Chemistry (RSC) and the Engineering and Physical Sciences Research Council (EPSRC). The report noted that industries reliant on Chemistry contributed an astonishing £258 billion to the UK economy in 2007 – equivalent to 21% of UK GDP – and supported six million jobs, accounting for at least 15% of the UK's exported goods and attracting significant inward investment.

From the University of York

Data describe the position approximately six months after completion of studies and are drawn from surveys conducted with those who completed their courses successfully over the last 3 academic years.

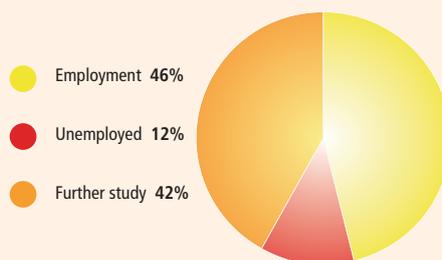


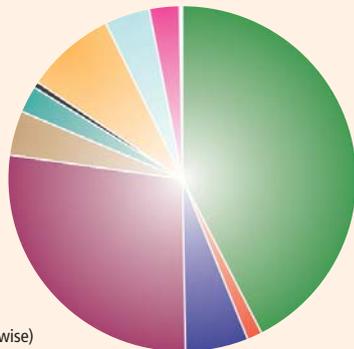
Chart represents only those respondents who, at the time of survey, were in employment, further study or unemployed.

Destinations of Chemistry Graduates

From all UK universities

This is what the graduates from 2008 were doing in early 2009, according to *Prospects* – the UK's official graduate careers website.

(Total in survey 2055; Total number graduating 2505)



(Clockwise)

- In UK employment 42.6%
- In overseas employment 1.4%
- Working and studying 6.0%
- Studying in the UK for a higher degree 27.3%
- Studying in the UK for a teaching qualification 4.2%
- Undertaking other further study or training in the UK 2.7%
- Undertaking other further study or training overseas 0.4%
- Believed to be unemployed 8.5%
- Not available for employment, study or training 4.2%
- Other 2.8%



The University has produced a series of graduate profiles, including one by Chemistry graduate Richard Chapman, which are available on YouTube: www.youtube.com/watch?v=i2uWRHtLpw

Alumni talk about their careers

Earlier this month our annual careers symposium took place in the Department – this was an opportunity for our second year students to find out about the diverse range of careers available to graduate Chemists. During the day we invited Chemistry alumni to talk about their careers and there were presentations on sales and marketing, teaching, chemical business management, research management and becoming a patent attorney.

Alumni speakers at our 2011 careers symposium



Student Finance

www.york.ac.uk/students/housing-and-money/financial-support/

www.direct.gov.uk/en/EducationAndLearning/UniversityAndHigherEducation/StudentFinance/

The University's Student Financial Support Unit provides information on student funding and bursary entitlements and they will be able to help with any student financial queries that you may have.

Student Societies

www.yusu.org

York University Students' Union (YUSU) offers an array of societies covering a huge range of activities ranging from the Juggling Society to award-winning media societies.

Student Sports Clubs

www.yusu.org/au

With almost 60 clubs, York's sports scene is very diverse, facilities are cheap to use and sport is accessible to all.

University Library

www.york.ac.uk/library/libraryrefurbishment/

The Library is currently undergoing a £20 million refurbishment that will provide 21st-century technology and media-rich learning, teaching and research environments.

Chemistry Review

www.york.ac.uk/chemistry/schools/chemrev/

Chemistry Review, a magazine for post-16 chemists is commissioned and edited at York. If you would like to contribute a Chemistry-related article please contact Dr Annie Hodgson annie.hodgson@york.ac.uk



Find out about the latest news in the department using twitter:

<http://twitter.com/chemistryatyork>

Admissions Enquiries please contact:

Telephone:

+44 (0) 1904 322545

Email:

chem-ugrad@york.ac.uk

Website:

www.york.ac.uk/chemistry

Snailmail:

Admissions Tutor
Department of Chemistry
University of York
Heslington
York YO10 5DD