

issue 2 | winter 2017



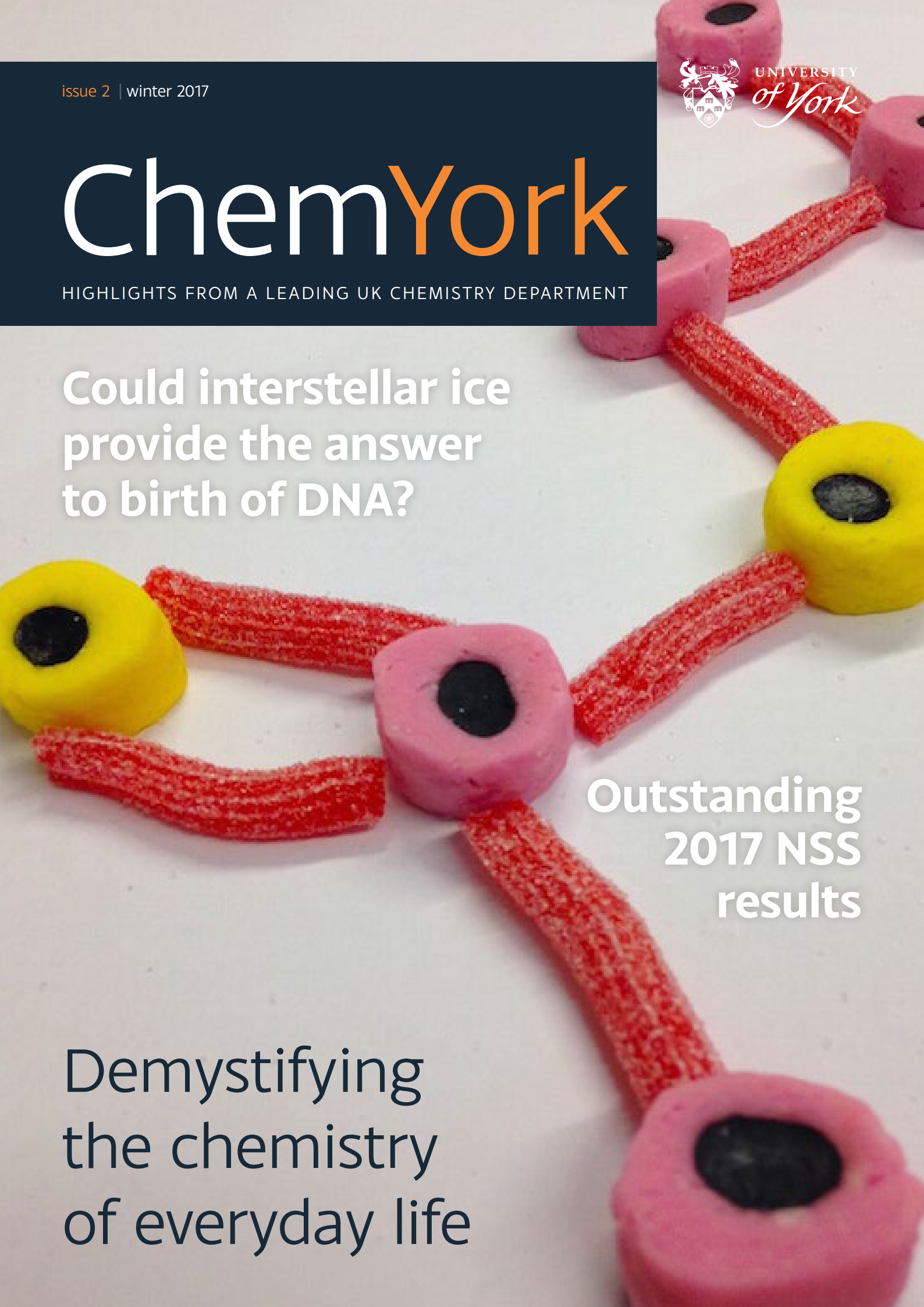
ChemYork

HIGHLIGHTS FROM A LEADING UK CHEMISTRY DEPARTMENT

Could interstellar ice provide the answer to birth of DNA?

Outstanding
2017 NSS
results

Demystifying
the chemistry
of everyday life



Welcome



THE END OF SEPTEMBER MARKS A NUMBER OF STAGES IN THE PROGRESS OF A YEAR. THE WARM DAYS OF SUMMER (IF WE HAVE BEEN LUCKY) ARE FADING INTO MEMORY AS THE EARLY NIGHTS CREEP IN, THE FIRST AUTUMNAL TINTS ARE SEEN ON THE TREES AND A NEW UNIVERSITY YEAR IS ABOUT TO BEGIN.

And what a year it promises to be because, as I write, the Department is preparing to welcome the best qualified cohort of students that has ever crossed its threshold, joined by equally good new starters in our degrees in Biochemistry (taught with colleagues in Biology) and Natural Sciences. This group of students saw the introduction of the revised two-year A-level programmes with revamped syllabus and approaches, and we are delighted that those joining us have been successful in this new regime, turning in an average A-level score of A*AA – what an achievement! Welcome and congratulations to all of those students. We are looking forward to working with them over the coming years.

That so many well-qualified students chose to study Chemistry at York reflects the high standards that pervade the Department in everything it seeks to do – and it is not just us who believe this. Over the summer, the annual [National Student Survey](#) (NSS) gave the Department an outstanding 95% for overall student satisfaction as well as placing it top of the Russell Group chemistry departments in seven out of nine sections of the survey. We rose to second place in the Guardian University League Table whilst retaining our fourth place in the Times and the Complete University Guides. And then, in mid-August, the journal *Nature* published its [2017 Innovation Table](#) within which is the 'Lens' ranking, reflecting how much of the University's research since 1980 has been cited in patents. The University found itself in the top 100 institutions worldwide and analysis of the results by discipline showed

York top in the UK for chemistry and materials.

While the Department rightly prides itself on its research and teaching, it also places great store in its commitment to equality and diversity, and we are delighted that September marked the tenth anniversary of us receiving the very first Athena SWAN Gold Award of any department in the country. The Equality Challenge Unit's Athena SWAN Charter was established in 2005 to encourage and recognise commitment to advancing the careers of women in STEM subjects, and we are proud of the hard work by so many people to develop a working environment in which diversity is celebrated and in which we work hard to ensure equality of opportunity in everything we do. There will be a series of events throughout the year to mark this auspicious anniversary, culminating in a scientific symposium on 16th May at which the headline speaker will be [Professor Carolyn Bertozzi](#) from Stanford University in the USA.

I hope you enjoy reading about some of the exciting things we've been up to since the first edition.

Professor Duncan Bruce
Head of Department

Front cover image: *Allsorts of atoms*
Photo credit: *Professor Andy Parsons*

Compiled by Cat Dunn and David Smith
Designed by Cookie Graphic Design

Awards

THE DEPARTMENT HAS BEEN DELIGHTED BY THE RECENT SUCCESSES OF ITS STAFF MEMBERS, WHO HAVE BEEN RECOGNISED FOR THE HIGH QUALITY AND INTERNATIONAL REPUTATION OF THEIR RESEARCH.



Royal Society of Chemistry Tilden Prize

Professor Lucy Carpenter was awarded the Royal Society of Chemistry Tilden Prize for advances in chemistry – one of the most prestigious awards in UK chemistry. Her work focuses on the emissions, chemistry and impact of processes occurring in the atmosphere above the world's oceans. She was evaluated on the originality and impact of her research, the quality of results and the importance of teamwork across the chemical sciences. In addition to influencing global atmospheric science, Lucy's research has impacts on government policy and legislation.

Fredericksz Medal

Professor John Goodby was recently awarded the Fredericksz Medal of the Russian Liquid Crystal Society for his outstanding work in the field of Liquid Crystal Chemistry.



Process Chemistry Research Prize

Professor Peter O'Brien was awarded the 2017 AstraZeneca, GlaxoSmithKline, Pfizer and Syngenta prize for Process Chemistry Research. He was recognised for his creativity and published achievement in the area of lithiation-trapping of saturated nitrogen heterocycles, including his more recent work on the use of in situ React IR spectroscopy for monitoring the lithiation step. Peter's research has captured the attention of researchers both in academia and, as the award indicates, in the agrochemical and pharmaceutical industry.

Royal Society University Research Fellowship

Dr Jon Agirre, Postdoctoral Research Associate in the York Structural Biology Laboratory (YSBL) was awarded a Royal Society University Research Fellowship. He won the fellowship for his proposal 'Methods for building meaningful atomic models of carbohydrates'. Royal Society Fellowships are often seen as a prestigious stepping stone towards an independent academic career.



Bio-based Innovation of the Year Award

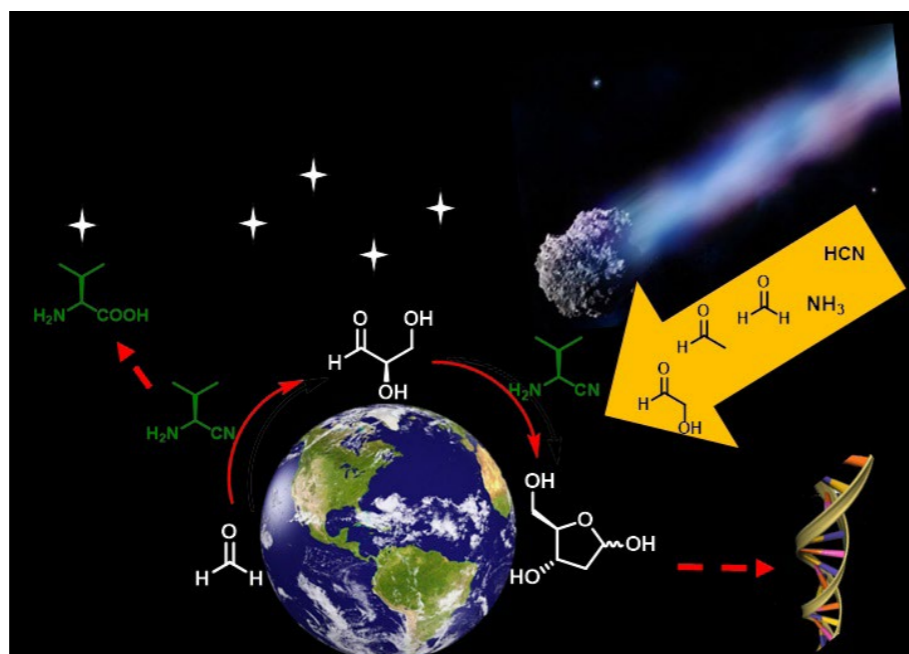
A bio-based solvent 'Cyrene' developed in the Green Chemistry labs has been awarded an international award for innovation. The product picked up the 'Bio-based Innovation of the Year' award at a ceremony held at the University of Amsterdam. The panel of expert judges described Cyrene as "truly innovative" and a "major breakthrough".

Could interstellar ice provide the answer to birth of DNA?

Researchers have shown that molecules brought to earth in meteorite strikes could potentially be converted into a key building block of DNA. They found that organic compounds, called amino nitriles, the molecular precursors to amino acids, were able to convert molecules present in interstellar ice to trigger the formation of the backbone sugar molecule, 2-deoxy-D-ribose, of DNA.

DNA is one of the most important molecules in living systems yet the origin of 2-deoxy-D-ribose, before life on earth began, has remained a mystery. The research team showed that amino nitriles could have been the catalyst for bringing together the interstellar molecules, formaldehyde, acetaldehyde and glycolaldehyde. Combined, these molecules produce carbohydrates, including 2-deoxy-D-ribose, one of the building blocks of DNA.

Intriguingly, these results, published



in *Chemical Communications* 2017, 53, 10362-10365, suggest the possibility that DNA could have been synthesised prior to the existence

of amino acids. The order in which molecules were generated in prebiotic chemistry is one of the key open questions in the field.

Understanding the role of nitrogen oxides in the nocturnal atmosphere

Researchers in the Wolfson Atmospheric Chemistry Laboratory (WACL), including lead author Dr Pete Edwards, in collaboration with several US institutions, published key data in *Nature Geoscience*, 2017, 10, 490-495, to understand the importance of night-time chemistry in controlling air pollutants.

They discovered that the interaction between emissions

from human activity and organic compounds emitted from vegetation in the night-time atmosphere could have large impacts on both air pollution and climate. In particular, this may help explain why in some parts of the world, although emissions of nitrogen oxides are decreasing, levels of air pollution are not following the same trend.

Transformative new technique for bioelectrochemistry

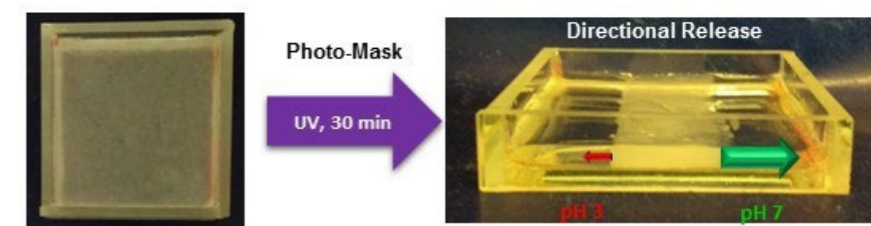
Since arriving in York five years ago, Dr Alison Parkin and her research team have worked closely with their Australian collaborator, Professor Alan Bond from Monash University to develop his new electrochemistry methodology as a transformative technique for use in bioelectrochemistry. A recent feature article, *Chemical Communications*, 2017, 53, 9519-9533, highlights their progress to date.

This new approach developed by Alison and her team enables far more sensitive, efficient and insightful measurements of the electron-transfer reactions, which control the biochemistry of life. In this way, her new methodology turns an 'ugly ducking' traditional voltammogram into a more complex and useful 'swan-like' response, providing a powerful addition to the toolkit of techniques, which help to understand the electronic circuitry of life.

York chemists pioneer new directional drug release gel

In an innovative approach, PhD student Phillip Chivers, funded by EPSRC and working in Professor David Smith's research team, has created hybrid hydrogels that incorporate the active anti-inflammatory painkiller drug naproxen and release it in a directional manner depending on the surrounding environment. The hybrid gel, published in *Chemical Science* 2017, 8, 7218-7227, combines two different components:

- A self-assembling gel network interacts with the drug and hence controls its release depending on the acidity (pH) of the surrounding



environment.

- A polymer gel makes the gel physically robust - it is formed by light under a mask, allowing gels of any shape to be generated. This approach leads to a shaped gel, which controls the release of the active drug. The image shows a drug-loaded gel that has been

patterned into a stripe - if different sides of the stripe are exposed to solutions of different pH values, the drug is preferentially released in one direction. Future research in the labs is aiming to develop gels which can achieve directional release of drugs towards their biological targets.

Body molecules more visible in new detection system

Researchers, led by Professor Simon Duckett, have developed a technique, published in *PNAS*, 2017, 114, E3188-3194, to enhance the performance of magnetic resonance imaging (MRI) in

identifying disease.

Scientists believe the improved sensitivity and resolution will allow small scale, as well as large, changes in the body to be detected. For example,

if a cancer treatment eradicates a large tumour, the more effective detection enabled by this technique could allow the remaining cells to be found if small fragments of the tumour still exist.



Landmark free online course demystifies everyday organic chemistry

An interview with Professor Andy Parsons

Massive Online Open Courses (MOOCs) have the potential to take university education to whole new audiences. These transformative courses are delivered online and free of charge to participants, with learners who complete the course having the option to purchase a certificate should they wish to accredit their learning. As such, MOOCs are a powerful way in which non-traditional learners can access higher education or people can stretch their knowledge, and discover new areas of interest.

Exploring Everyday Chemistry (eeDc) is a pioneer University of York MOOC, delivered for the first time by the FutureLearn platform



in 2017. It attracted more than 8000 learners from well over 100 countries. As one of the first ever University of York MOOCs, the eeDc course is very much a trailblazer.

This four-week course highlights a range of chemistry-based topics relating to our everyday lives – from perfumes to antibiotics, and from brewing to sport. It comprises 85 individual learning steps, supported by more than 30 videos and screencasts, including practical applications delivered through a

series of 'kitchen-experiments' (with the opportunity to share and discuss results, including on Twitter – #FLChemistry).

The MOOC was launched on 23rd January and, following very positive feedback, a slightly modified version ran in July. Professor Andy Parsons, Admissions Tutor and Head of Vanbrugh College, worked with staff and students across the University to develop the MOOC. He gives us an insight into how this programme was developed and how it has been received.

Why deliver a MOOC?

As the Admissions Tutor, I initially saw this primarily as an opportunity to attract both home and overseas undergraduate applicants to study



Using pills and capsules to create a 'medicinal' work of art

in York. FutureLearn is the main platform for UK universities to deliver their MOOCs, and has over 6 million learners registered. This was therefore, a fantastic opportunity for us to engage with learners far and wide. Our course gives learners an opportunity to sample our teaching, get an insight into some of our latest research and see how this links to our undergraduate chemistry courses. Furthermore, I hoped it might help learners become as fascinated by chemistry as I am, and understand the impact of it in their everyday lives.

What about feedback?

We have been absolutely delighted with the feedback we have received; for example, the post-course feedback from January included:

- 94% rated the overall experience of

the course good (28%) or excellent (66%).

- 94% found the instructor fairly engaging (18%) or strongly engaging (76%).
- 98% thought their expectations at learning about the subject had been met or exceeded.

We also received many positive comments from learners, including: "Thank you for a very well presented and informative course. The involvement of the educators has been second to none. I have really enjoyed the home experiments and, as a consequence, now brew a better cuppa too!"

"You have converted me to chemistry and my son is thrilled. I have done quite a few MOOCs and you have really impressed me with your attention to our comments."



"Thanks for your missionary approach to teaching. I enjoyed and appreciated all four sections and now have a four inch tall notebook for future reference as a lovely parting gift."

What about impact?

It is still early days, but the initial signs are good. Towards the end of the last admissions cycle, our MOOC was mentioned in UCAS personal statements, a number of our recent pre-app visitors had completed the MOOC (one proudly saying they achieved a mark of 95%), and we had over 50 students who, after attending a July Open Day, enrolled on the MOOC and posted comments mentioning their visit.

Talking of the July Open Day reminds me of one of our first visitors of the day, a mum and her daughter who welcomed me with 'Are you Mr MOOC?' and then went on to provide lovely feedback. Further afield, it was pleasing to hear from one of our recruitment colleagues who, when visiting the Channel Islands, heard positive things about our MOOC from some students who visited the York stand. It has even had an impact at postgraduate level, with a handful of

applicants mentioning the MOOC as a reason for them applying to York.

Did you enjoy it?

It has been a pleasure to promote the course at the 'What is excellence?' event organised by YUSU (York University Students Union), the VICEPHEC conference in York (Variety in Chemical Education), as well as through articles in *Education in Chemistry* and *Chemistry Review*. However, the real highlight has been the opportunity to develop an online course, from scratch, focussing on the wonders of organic chemistry – from designing the course, through to compiling paragraphs of text, videos, screencasts, kitchen-experiments, quizzes and tests, and finally, the cherry on the cake, facilitating the courses.

I have learnt the importance of brevity (each video and screencast could be no more than 5 minutes long), as well as new tactics for engaging learners with different backgrounds. For the first course, learners visited almost 67,000 steps and we had almost 3000 comments posted. Beyond the potential benefits for chemistry admissions, it has simply been a pleasure to "talk" to

such a diverse range of enthusiastic and highly engaged learners, from all over the world (from Afghanistan to Zimbabwe), about my favourite topic.

Who to thank?

The success of the project can be attributed to the hard work and enthusiasm of both staff and student members of the eeDc team. I have been fortunate to work with Iain Barr, who coordinates MOOC activity at York, and a special thanks to Katrina Sayer and her team for advertising the course to over 200 schools and colleges, as well as on our admissions events.

A number of our students have made notable contributions, starting with Katie Martinelli and James Titterington who helped develop the project and facilitate the first running, then Caitlin Evans, Craig Hardy and Josie Rogers for the second running, including compiling some weekly videos.

Can anyone take a look?

The timing of the next eeDc course is undecided, but if you would like a 'flavour' of the course content, take a look at our promotional video: <https://www.youtube.com/watch?v=ZDSJ8yrPEk4>.

Laidlaw scholarship

Students Laura Berga, Year 1 Chemistry, and Robert Kirk, Year 2 Natural Sciences, were two of 25 students to receive a Laidlaw Undergraduate Research and Leadership Scholarship. This new programme aims to equip undergraduate students with the skills to become leaders in their chosen occupations.

The programme comprises of two elements: the student carries out a research project, supervised by an academic research mentor and the completion of a leadership development programme, which can lead to an Institute of Leadership and Management (ILM) qualification.

Laura's research project was 'Dissolving cellulose: how can we apply thermodynamics for a molecular level understanding?' and she was mentored by Dr Seishi Shimiz.

Robert's research project was 'Using signal amplification by reversible exchange (SABRE) to hyperpolarise zeatin' and he was mentored by Professor Simon Duckett.

JEOL postdoc poster competition winners

The three winners of the JEOL postdoc poster competition were:

- Barby Procacci - Laser pump-NMR probe of hyperpolarised metal hydrides: kinetics, mechanisms, and spin dynamics
- Dan Raines - Crystal structure of a ferric bis(catecholamide) in complex with the siderophore binding protein CeuE
- James Donald - Photoredox-catalysed procedure for carbamoyl radical generation: 3,4-dihydroquinolin-2-one and quinolin-2-one synthesis

The winners were invited to give talks on their research at a special Postdoctoral Researchers Symposium in the Department, held in September.

Outstanding 2017 NSS results

CHEMISTRY AT YORK ACHIEVED AN OVERALL STUDENT SATISFACTION RATING OF 95% IN THE NATIONAL STUDENT SURVEY (NSS) AND, COMBINED WITH OUTSTANDING OTHER RESULTS, YORK CONFIRMED ITS REPUTATION AS ONE OF THE VERY BEST PLACES TO STUDY CHEMISTRY IN THE UK.

Amongst its research-intensive Russell Group competitor departments, York Chemistry achieved first place in a remarkable seven of the nine sections of the survey - leading the way in Teaching on my Course (94%), Learning Opportunities (91%), Assessment and Feedback (80%), Academic Support (89%),

Organisation and Management (91%), Learning Resources (96%) and Learning Community (89%).

This builds upon our recent 2nd place ranking in The Guardian University League Table 2018 and our 4th positions in the 2018 University League Table and the 2018 Complete University Guide.



New ideas for aviation research

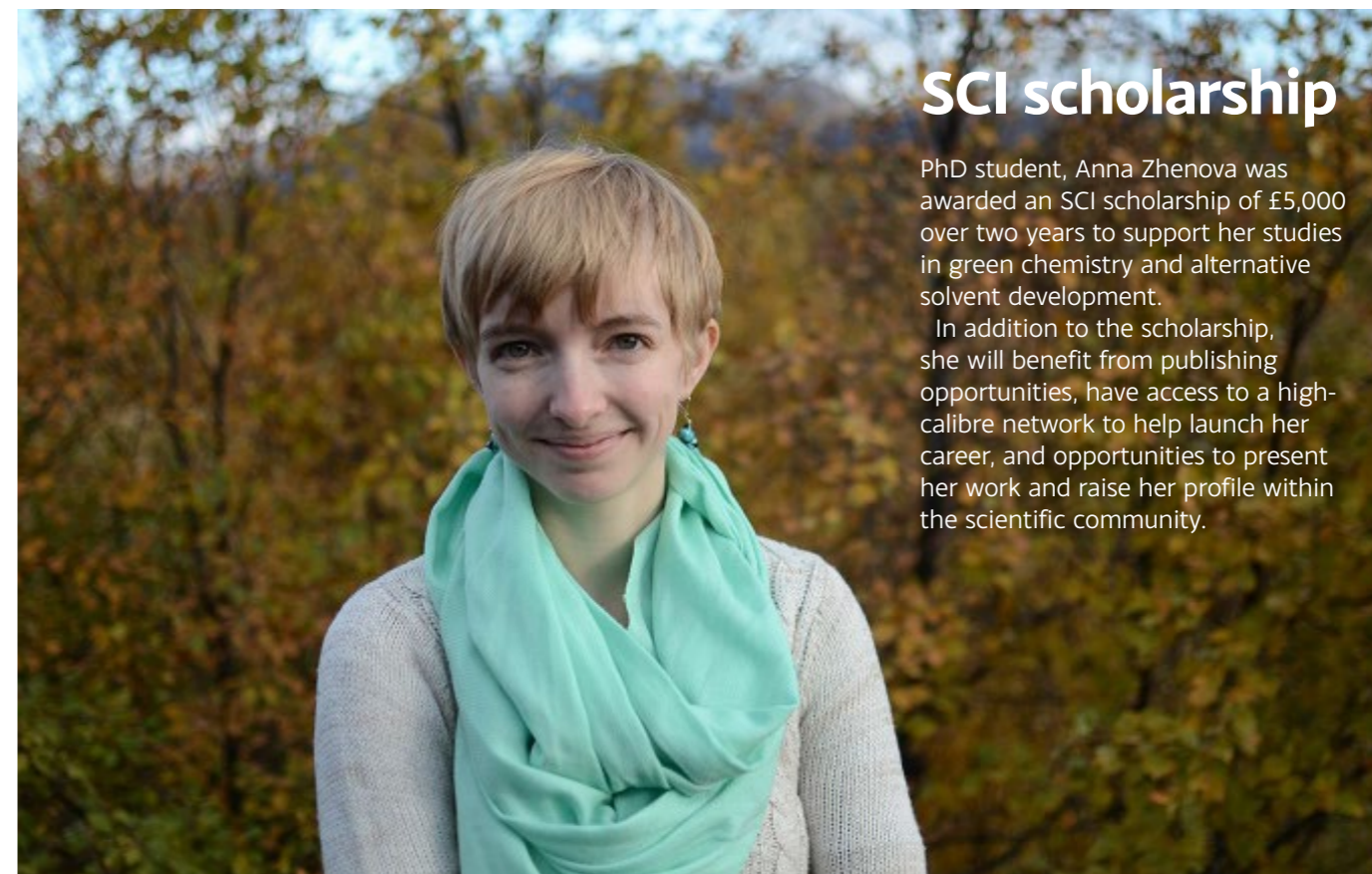
Dr Nicole Whitelaw, who has worked with Kilfrost, pioneers of safety critical aviation fluids for more than six years, has taken new ideas to the company as a result of her PhD research in the study of supramolecular materials science.

Nicole studied her PhD in the Department of Chemistry under the supervision of Professor David Smith, whilst carrying out her duties for Kilfrost, and integrating her discoveries into their product design process.

SCI scholarship

PhD student, Anna Zhenova was awarded an SCI scholarship of £5,000 over two years to support her studies in green chemistry and alternative solvent development.

In addition to the scholarship, she will benefit from publishing opportunities, have access to a high-calibre network to help launch her career, and opportunities to present her work and raise her profile within the scientific community.



Student YouTube stars

With over 175 videos on YouTube, first year chemistry undergraduates have, as part of their Year 1 Macromolecules course, over the past 7 years, created one of the most diverse sources of online educational material in the field of polymer chemistry.

These videos have been viewed over 150,000 times - demonstrating the impact these first year students have had; becoming global educators in their own right. The videos cover topics ranging from polymers in aviation to polymers in sports. Students have demonstrated

remarkable communication skills and an ability to translate complicated chemical ideas in engaging and imaginative ways. All of the videos can be found playlisted on Professor David Smith's YouTube channel: <https://www.youtube.com/user/ProfessorDaveatYork/playlists>.





Dr Derek Wann, Professor Dame Julia Higgins FRS FRENG, Dr Ruth Purvis and Dr Helen Coombs at the Athena SWAN Awards ceremony in December 2015 (Photo: John Cairns)

Athena SWAN Gold Award 10th anniversary

11TH SEPTEMBER 2017 MARKED THE 10TH ANNIVERSARY OF THE DEPARTMENT OF CHEMISTRY'S FIRST ATHENA SWAN GOLD AWARD, WHICH RECOGNISES "SIGNIFICANT AND SUSTAINED PROGRESSION AND ACHIEVEMENT IN PROMOTING GENDER EQUALITY". THIS WAS THE FIRST GOLD AWARD TO BE AWARDED NATIONALLY, GIVING THE DEPARTMENT IMMEDIATE BEACON STATUS FOR ITS GOOD EQUALITY PRACTICE.

The award was renewed in 2010 and 2015, making Chemistry at York the only Department in the UK to have held three consecutive gold awards. Our 10 year anniversary is an excellent time for us to look back on all we have achieved and to consider the challenges we face moving forward.

Why did the Department decide to get involved with the Athena SWAN award?

It's pleasing to remember that we were already well-embarked on creating a good working environment where all staff could flourish before the Athena SWAN awards were created. Informally, this can be traced to the time around the new millennium when the outgoing and

incoming Heads of Department, Professors Bruce Gilbert and Robin Perutz, were beginning to think about ways to better support the relatively small number of female academic and research staff in the Department, as well as how to improve the number of role models that our undergraduate students encountered.

In 2004, the Royal Society of Chemistry (RSC) published its report 'Good Practice in University Chemistry Departments', which featured many examples from our Department and labelling us anonymously as "The University of Utopia". Following on from this report, Professor Perutz asked Professor Jane Thomas-Oates to chair a working group to consider the report's recommendations and

whether the Department should implement any new practices. The work of this committee formed a strong base from which to apply for our first Athena SWAN award when the scheme was announced.

What best practices did you develop?

Professor Thomas-Oates' working party recommended a number of actions that were relatively simple and straightforward e.g. sensitive timing of meetings and seminars, declaring family-friendly policies in recruitment material and holding an annual promotion seminar, including statistics from previous successful applicants. As we moved towards applying for the Athena SWAN awards, with further leadership from Dr Anne

Routledge and Professor Paul Walton, more formal and ambitious policies were developed to address challenges that women may face across their scientific careers, from undergraduate right through to professor. This has included flagship support for flexible working and a "part-time working guarantee", embedded training and careers support for researchers, a focus on the risks of unconscious bias, and Departmental maternity, paternity and adoption guidelines.

It is vital to say that, in all this work, we have never aimed to target measures specifically at women. Our aim has always been to develop good practices that are fair, flexible, transparent and beneficial to all. This has been really important in keeping the support of all the Department's staff over the last decade. This has led to inclusivity, which goes far beyond the original remit of Athena SWAN and aims to provide a welcoming environment, which actively supports all members of the Department, irrespective of gender, sexuality, disability, ethnicity or background. Members of staff including Professors Walton and David Smith, Dr Derek Wann, and myself regularly go out and talk about diversity issues at other universities and industries in order to disseminate some of the best practices we have developed.

What has been achieved over the last 10 years?

The last 10 years have seen real and substantial progress in the numbers of female academic staff at all grades within the Department. It is perhaps especially rewarding to see how some of our "home-grown talent" (i.e. female staff who entered as junior lecturers) has developed. Dr Jacqui Hamilton, Dr Kirsty Penkman and I are all now Readers, while Lucy Carpenter



Chemistry holds many family friendly events such as the annual staff and family picnic

is Professor and Deputy Head of Department (Research). All of us have benefited from the Department's policies, enabling us to work part-time and flexibly around our family responsibilities. Perhaps one of the most satisfying and remarkable achievements is the way in which part-time working is now widely accepted across the Department, with several male academic staff also taking advantage of working part-time to balance family and work commitments.

What support have you received from the Department?

All the recent Heads of Department have been members of the Departmental Equality and Diversity Group, where they have fully supported and enabled change. The Department has also supported all of this work through funding outstanding professional and support staff, in particular Dr Helen Coombs, Dr Sue Couling, Dr Leonie Jones and Eliza Bonnelo, who have provided exceptional and often unseen support for the Athena SWAN work.

Are there any unsolved problems?

The biggest unsolved problem is that change is not fast. While you can certainly see clear changes happening over 10 years, effecting real changes over the three-year cycle of an Athena SWAN award is very challenging. Whilst we are seeing improvements across the infamous "leaky pipeline" profile of our Department, there is still a very considerable attrition of female staff. In real terms, this still constitutes

a substantial loss of talent that we continue to work to address.

As we look to the future, we must also hope to soon see the appointment of the first female Head of Department. It is also essential not to rest on our laurels and to recognise the ongoing challenges faced by all in higher education to ensure greater inclusion and success of those from disadvantaged backgrounds as well as those from BAME (Black and Minority Ethnic) communities.

How will you be celebrating the 10 year anniversary?

We began with an informal drinks reception for all staff on 20th September, where Professors Perutz and Walton reminisced about the diversity work they have led. In addition, the Department will be part of a beacon event at the RSC, Burlington House on 13th November. We are also delighted to be hosting the annual LGBT+ STEMinar on 12th January.

There will be more formal events on 16th and 17th May, when Professor Carolyn Bertozzi from Stanford University will be the keynote lecturer at a scientific symposium celebrating excellence and diversity in science. Professor Bertozzi will give a public lecture on 17th May and I would encourage you all to come along and hear what she, as an international leader in the chemical sciences, has to say about diversity.

Dr Caroline Dessent,
Chair of the Equality and Diversity Group



Dr Wann delivering a presentation at the Athena SWAN Awards ceremony (Photo: John Cairns)

Where will your career path take you?

An interview with Helen Burrell, Undergraduate Teaching Labs Deputy Technical Manager

After six years of part-time study, Helen Burrell has been awarded an Honours Degree in Natural Sciences from the Open University. We had a chat with her to find out more about how she balanced work, study and family life, and what she has gained from studying for this degree.

Why did you decide to do a degree?

The majority of my career has been in biological sciences. Instead of going to university at 18, I was offered a position at the MRC Clinical Oncology and Radiotherapeutics unit in Cambridge. Whilst working as a junior technician I studied, part-time, for my BTEC HNC in Applied Biology. Eventually, when my career moved to the York Chemistry Teaching Labs, which was perfect for my technical skills, I began to feel there were gaps in my chemistry knowledge. I, therefore, started to look around for a course that would improve my understanding and detailed knowledge of modern chemistry. At the time there was little available that I could fit flexibly into my lifestyle.

During an Open University summer school held at York, I began to talk to the Open University tutors who suggested I look at one of their short eight-week courses. I successfully completed their ten-credit module 'Molecules, medicines and drugs: a chemical story', progressing on to complete 'The molecular world' module. As I was able to transfer the credits obtained from my HNC, it began to seem achievable that I could complete a Natural Sciences degree with the Open University.

How did you manage to balance family and work life with studying?

It's been a tricky juggling act but my family has been hugely supportive. It has helped that my three sons (Bradley, Joshua and Matthew) have all been studying for A-levels and

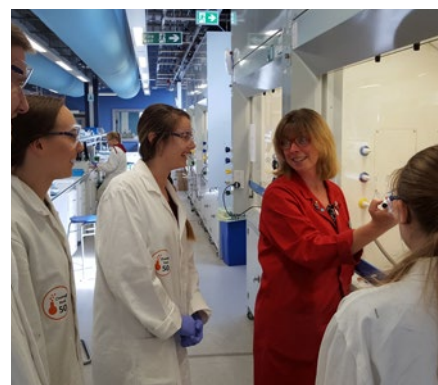
degrees at the same time. They've helped motivate me as well as my husband Paul, who has many times said to me "You can do this". The Department have provided time and space, which has helped me to maintain a reasonable family, work and study balance.

How will gaining this degree impact your current role?

Gaining this degree has given me a greater understanding of cutting-edge chemistry. Terminology from chemical theory no longer feels like a foreign language. I have greater confidence in my role and I have a clearer understanding of the high-level research-led chemistry experiments taking place in the labs. I now not only know how to use the instrumentation within the laboratory, but understand the full potential of what these methods can achieve. It has already had a very positive impact on my interaction with the students.

What did you learn in your degree that has been useful in your current role?

Understanding that people have different approaches to learning. My dissertation for my degree was to develop an undergraduate experiment for the Department of Chemistry's first year analysis course, 'The Quantification of Limonene'. Part of the project involved using work experience students to test the understanding of the scripts and to carry out the practical. I came to appreciate that what may seem simple and clear to me was not necessarily so for others. This experience made me more aware of how to impart information to the students. It was also very satisfying to feel that my own studies had a direct impact on practical course design here in York.



Do you have any plans for further study?

Currently, I don't have any further plans for future study. It's taken six years of part-time study to achieve my degree. I am now able to spend time with my family and friends without worrying about deadlines for assignments - in fact, reflecting on this means I have much greater understanding of the pressures our own students face. I do intend to continue my personal development with the in-house courses provided by the University of York. Let's see where my career path takes me.

Did the Department offer any support during your studies?

I've had massive support from the Department and they financed my degree programme as part of my personal development. I have also had a huge amount of support, from the Head of Department to the laboratory technicians within my team. I would like to say a big thank you to everyone, particularly Dr David Pugh who was always there when help was needed, steering me in the right direction.

What's next?

I have recently become a member of the TechYork Conference organising committee. The TechYork Conference is an annual conference held by the University for its technical staff. It showcases the University's departments and research as well as encouraging technicians to reach for and achieve their goals. With the experience gained whilst doing my degree, and as a member of the TechYork committee, I can hopefully encourage other technicians to continue with their own personal development; you are never too old to learn.