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Calendar of Events

Chemical InterActions Quiz
Date: Wednesday 30 January
Time: 6.30pm
Location: A102

EPSRC Visit to York
Date: Thursday 31 January

UCAS Interview Afternoons
Dates: 4, 5, 12, 18, 19 & 25 Feb
Time: 12—4pm
Location: Hub DS/008

Organic Seminar
Date: Wednesday 13 February
Time: 2pm—5.30pm
Location: A101

Graduate Research Seminars—Spring
Date: Wednesday 6 March
Time: 1.15pm—4.15pm
Location: A101

Date of Next Issue: 22nd February 2013
Professor Guy Dodson, FRS

Guy died on Christmas Eve, 2012.

_The obituary below is posted on the Departmental website and will appear in the University Magazine shortly. It is followed by some personal reflections from Rod Hubbard on how Guy affected the Department._

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Guy Dodson, who died on Christmas Eve 2012, was an inspirational scientist who left an enduring impact on the University of York.

He was born in Palmerston North, New Zealand, twin brother of Maurice to whom he remained very close throughout his life. Guy studied Chemistry in Auckland where he graduated with a PhD in crystallography in 1962. His excitement at the possibilities for structural science encouraged the move to Dorothy Hodgkin’s laboratory in Oxford. What was supposed to be a short term post-doctoral position led to him becoming a central figure in her laboratory until Dorothy’s retirement in 1976.

His time at Oxford had a defining influence on his life and career. He met and married Eleanor and together they began to establish a scientific reputation and enduring worldwide network through their work on the crystal structure of insulin. Guy also embraced the Hodgkin philosophy of allowing individual talent to mature.

Guy and Eleanor have been a formidable team. Eleanor’s mathematical skills have combined gloriously with Guy’s enthusiasm for protein structure in making a significant impact across chemistry and biology. Guy moved to York in 1976 (where Maurice was already a lecturer in Mathematics) to the Chemistry Department and with Eleanor, established a protein structure research group. This was an unusual but visionary appointment by the then head of department, Dick Norman which has had three equally important impacts on the scientific standing of York.

First, there was Guy’s personal research when he was at York. Alongside detailed and thoughtful studies of structure and mechanism in systems such as haemoglobin and penicillin acylase, he pioneered effective collaboration with industry, with ground breaking work in protein engineering and structures of insulin derivatives (which are currently multi-billion dollar medicines) and on the structure and mechanism of action of industrial enzymes. This work put York at the centre of the growing field of structural biology, and ideally positioned the laboratory to ride the wave of expansion in the field in the 1980s and 90s. Among many other awards, he
was elected as FRS in 1994 and a Fellow of the Academy of Medical Sciences in 2002. Eleanor’s contributions to computational crystallography were also recognised with her election as FRS in 2003.

Second, the combination of Guy’s passion for structure and Eleanor’s leadership in crystallographic methods created the environment which attracted talented scientists to York. Guy mentored a succession of post-doctoral fellows who went on to international prominence in their disciplines. A key quality was his enthusiasm, generosity of spirit and his willingness to devote his time to assist and advise others.

Third, there was Guy’s commitment to embedding structural insights into the lexicon of biological research. At York, this was achieved by establishing with Rod Hubbard and Keith Wilson, the York Structural Biology Laboratory (YSBL) as a research unit within the Department of Chemistry. In 1993, Guy was persuaded to also lead a Division at NIMR in Mill Hill, where his energies established yet another internationally leading research group, bringing structural insights to biomedical research.

Throughout all their time in York, Guy and Eleanor established a serious reputation for hospitality - both for visitors but also for those in difficulties. You never knew who would be staying in the various rooms of the cavernous 101 East Parade - a major party venue for decades.

Guy combined scientific enthusiasm with an impish charm and generated a generosity of spirit in all those around him. He created a laboratory in which there is to this day a real community of scientists who work together for the common good – a wonderful legacy.
Some personal comments from Rod Hubbard:

In thinking back over the years, it is clear that Guy had a very important effect on the way the Chemistry Department developed.

He arrived at York in 1975 / 1976 as Dorothy Hodgkin retired in Oxford. His appointment was an extremely ambitious move by Dick Norman. Guy was not in the same mould as the other members of Department – he had essentially no experience of teaching undergraduates – and it showed (I remember his first lecture when I was taking a second year option when he was in transition to York – memorable for all the wrong reasons!). But what he and Eleanor brought to the Department was a serious, internationally connected passion for research. Guy’s lack of connection with the administrative and teaching remit of the Department was difficult for some colleagues to take – but his impact was substantial in establishing (with Eleanor) a truly world leading research presence and activity that gave the Department and York a tremendous reputation. He also generated the space and support to allow new, innovative ideas and people to grow.

Let us look at some of the impact.

There was not a great deal of research activity beyond graduate students and the odd visiting scientist in York Chemistry in the mid 1970s. Guy and Eleanor brought the first Research Council grants and post-docs, but also an international connection. There were waves of Antipodean, Chinese, Russian and Polish visitors in the 1980s, some of whom stayed. But also, the York lab was on the visiting map for leading international scientists from the US and major European labs. This raised the expectation and level of scientific engagement with the international community, which went on to infect much of the rest of the department.

Importantly, Guy provided the space and encouragement to others. This was particularly true for me as I established molecular graphics and modelling in the early 1980s; Guy was also central in getting my New Blood position in 1983 (though he never did appreciate the difference between Computing Service and Computer Science – my lectureship was a very odd joint Chemistry and Computing Service position!! which didn’t last long). Together we had fantastic fun as the Protein Structure Group grew dramatically through the 1980s.
There were two major influences on the growth of the lab during the 1980s. One was the Research Council funding (first the Protein Engineering initiative which established molecular biology in York, then the various large Consolidated Awards which funded the infrastructure). The other was the industrial collaborations. The first of these was the Novo experience. I will never forget walking into a room in Copenhagen with Guy in the mid 1980s and being handed a one page summary of what Novo were proposing as a collaboration. The Novo team walked out and left us to consider – Guy and I looked at the sheet and in stunned silence tried to grasp that they were offering £1M over three years with very little paperwork (that is about £2.5M in today’s money). Just an agreement that we would work on some interesting proteins. This money and the continuation over the following decades provided the core flexibility on which the lab grew. But this also led to some amazing discoveries – the structure of the first protein produced by recombinant methods, the insulin work (design of monomeric insulins and structures of crystal preparations designed to give longer acting insulins) and various industrial enzymes (amylase, lipase, cellulose, etc). At this time, the most important pre-requisite for a crystallographic lab was access to pure protein and the samples that arrived from Novo were turned into a series of high profile papers (many in Nature etc). The energy and excitement this developed in the lab, brought many superb post-docs – some of which (e.g. Gideon Davies) stayed. Also, this tradition of working together with industry led to the various large grants I had with GSK, Celltech, Chiroscience, Karobio, Accelrys and so on through to the late 1990s. Looking back, it is amazing how the lab grew and took over much of D block during the 1980s, seemingly without a great deal of fuss, meetings or arguments. It just happened naturally.

We also had great fun writing grants. Tony Wilkinson was a post-doc in Harvard when I was a visiting scientist there in the mid-1980s. He wrote to Guy who suggested he talked to me. When I got back to the UK, Guy and I decided one afternoon to write a grant to bring Tony as a post-doc to York. So, we sat down and invented a project to engineer myoglobin to change its binding properties. It was written that afternoon, submitted, funded and that brought Tony to York. On another occasion, the University had its first stirrings of promoting the growth of large, more commercially aware groupings. We had a riotous evening writing a pompous document full of phrases such as “pioneering posture”, “exquisitely poised” as we made a bid for a “Centre for Biomolecular Design”. That one didn’t get funded (perhaps fortunately).

Finally, an anecdote that summed up the experience of being with the man.

Travelling with Guy was a total experience. All who went with him to various meetings, conferences, holidays etc. will have their own stories. The one that stands out in my experiences (but which is probably just “a day in the life” for Eleanor) was the IUCR meeting in Bordeaux in the summer of 1990. Don’t forget – this is a time before mobile phones or ubiquitous email. I had been invited to speak at a session on hydrogen bonding and water structure – but the days before my talk, I was at a meeting in the Swiss Alps with IBM. Guy and Eleanor had rented a farmhouse
that they thought was near Bordeaux – but turned out to be 90 km away in Bergerac. I had arranged before we left York to meet Guy at lunchtime on the day of my talk and he said he would bring some food with him. Also – Bordeaux was full, no hotel rooms, so I was going to stay with them. As I said – the farmhouse was way out of Bordeaux and Guy left with Eleanor to catch the train from the nearby village early in the morning – but left a student’s poster in the station waiting room. I flew into Bordeaux that morning – it was stinking hot (40°C) and the meeting was being held at an out of town campus that was a concrete desert. I arrived at the campus and – quite remarkably – found Guy where he said he would be. He had remembered to bring lunch – but had also invited all the people he had met that morning to join. So – there we were – in this concrete desert with little shade in 40 degree heat, cowering under a shrub bush, sharing half a crushed baguette and a melted 50g of brie scraped out of Guy’s backpack, between about 6 of us. You had to mug graduate students who passed by with bottles of water to get a drink. I gave my talk (the room was packed, but it was beyond a sauna and I am sure I was hallucinating by the end of it) and met up with Eleanor, who said we could travel back together to the farmhouse by train etc. But I had had enough and caught a taxi to the airport, hired a car and picked up Eleanor and drove her and the student (Xiao Bing) via the station to pick up the poster (she had missed the poster session), back to the farmhouse – where we had a glorious relaxed evening with a chaotic meal, ending up in the swimming pool with Phil and Carol Evans, gazing at the stars while the Dodson and Evans children were playing football in the orchard. After a few glasses, I collapsed into the bed vacated that morning by Dorothy Hodgkin and so ended an excellent day – for me. But Guy had stayed on for an IUCR committee meeting. At the end of it, the other committee members all jumped into their cars and left Guy and Wayne Hendrickson (an eminent US crystallographer) at about 9pm on the edge of Bordeaux with no transport or chance of getting back. So, they had a rather rubbish Vietnamese meal and then Guy managed to find one of the only rooms left in Bordeaux – a garret in the eaves of a house with no air conditioning, where he said he watched sweat dribble off his chest as he spent a sleepless night. And so ended a typical day in the life of Guy.

Every day was a new day for Guy. He greeted all around him with enthusiasm, but most importantly with interest - Guy was somebody who generally revelled in being with and engaging with people. Martin Karplus always described Guy as “the really charming New Zealander”. If you were in a conversation with Guy – you were the centre of the world and you got the full force of his charm and enthusiasm for life and science.

Guy embodied all that is good about a life in science; York and the Chemistry Department was extremely fortunate that he came.
Chemists Awarded a 2.3 million € Research Grant

Professors Gideon Davies and Paul Walton have been awarded a 2.3 million € research grant from the European Research Agency-Industrial Biotechnology initiative.

The project, which is led from York, has partners in Copenhagen, Marseille and Cambridge. It aims to bring together expertise in molecular biology, inorganic chemistry, genomics, analysis and industry to explore the significant opportunities for bioethanol production created by the recent discovery of GH61 enzymes.

Chemists Awarded £800k EPSRC grant

Professors Simon Duckett and Robin Perutz have recently been awarded an EPSRC grant worth £800,000.

The grant is entitled “Reaction monitoring on micro-second timescales by nuclear magnetic resonance: aiming for a paradigm shift in the study of reaction mechanisms”. This EPSRC sponsored project will start in early 2013 and run for 4 years.

Spring Term Graduate Research Seminars

All staff and students are invited to the Spring Term Chemistry Graduate Research Seminars on Wednesday 6 March at 2.15 in A101 (please note this has moved from Wednesday 27 February).

The following Chemistry PhD students will each give a 20 minute talk about their research:

- Katrina Bakker - materials chemistry
- Stephen Bromfield - organic chemistry
- Kirsty High - analytical chemistry
- Daniel Wright - structural biology

More details to follow in due course.
York Chemist on Academic Delegation to India & Sri Lanka

Dr Angelika Sebald is part of a delegation from the University of York and Hull York Medical School visiting India and Sri Lanka to promote new health-focused and academic links with the two countries.

The visit includes the first formal event of the University’s 50th Anniversary celebrations - a special reception for York alumni at the residence of Ian Felton UK Deputy High Commissioner in Bangalore, attended by the UK Minister for Public Health, Anna Soubry.

The eight-strong delegation, led by the Vice-Chancellor Professor Brian Cantor, includes representatives of the Hull York Medical School and the University's Departments of Health Sciences, Management, Biology, Chemistry and Electronics. It is focusing principally on building links with medical and nursing schools with a view to establishing formal partnerships on curriculum development and elective modules for medical students as well as joint work in diabetes nursing care.

In Sri Lanka, the York delegation will hold discussions with the University of Colombo about joint research in plant biology and ecology, and student mobility programmes. There will also be a celebration to mark the University’s 50th Anniversary with Sri Lankan alumni.

The visit is part of the University's broader approach to developing partnerships with a range of institutions of academic excellence across the world. These global partnerships enable members of the York community – made up of people from over 100 nations – to engage in work, study, research and cultural exchange with international partners both on campus and abroad.

Chemical InterActions Quiz, Wednesday 30 January

Chemical InterActions will be hosting a departmental quiz on Wednesday 30 January in A102 at 6.30pm.

All staff and students, both undergraduate and postgraduate are welcome.

For more information or to register a team (of 4-6 people), e-mail chem-interactions@york.ac.uk with your team name, number of participants and names by Monday 28 January.

Bring your own drinks and nibbles to share!

*Individuals are welcome to attend and can join a team on the night.*
CIEC Promoting Science at the Association of Science Education Annual Conference, 2013

CIEC were represented at the annual ASE conference in Reading by Gayle Pook and Michele Smale.

Gayle delivered a talk entitled ‘How schools are using ambassadors to support KS3 Practical Science’ which was enthusiastically received with the teachers present seeing how bringing in industrial ambassadors could boost enthusiasm and performance of science in their schools.

Michele hosted a practical session on ‘Making Maths and Science Meaningful’ which explored opportunities to enhance science and maths through the use of real life contexts. The session was well attended and the teachers were very keen to have a go at the activities which they would take back to school to carry out with their classes.

Michele and Gayle met numerous primary teachers at the CIEC stand during the three day event and were able to introduce many of them to the CIEC ethos of teaching science through real life, industrial contexts.

Gayle was impressed with the input from teachers during the CIEC sessions, “It is encouraging to see so many primary teachers taking up the challenge of making science more relevant and accessible for their pupils”.

Gayle on the CIEC Promoting Science stand at the ASE conference
Chemists at the Universities of York and Leeds have made a significant discovery about the cause of the destruction of ozone over oceans.

They have established that the majority of ozone-depleting iodine oxide observed over the remote ocean comes from a previously unknown marine source.

The research team found that the principal source of iodine oxide can be explained by emissions of hypoiodous acid (HOI) – a gas not yet considered as being released from the ocean – along with a contribution from molecular iodine (I2).

Since the 1970s when methyl iodide (CH3I) was discovered as ubiquitous in the ocean, the presence of iodine in the atmosphere has been understood to arise mainly from emissions of organic compounds from phytoplankton -- microscopic marine plants.

This new research, which is published in Nature Geoscience, builds on an earlier study which showed that reactive iodine, along with bromine, in the atmosphere is responsible for the destruction of vast amounts of ozone – around 50 per cent more than predicted by the world’s most advanced climate models in the lower atmosphere over the tropical Atlantic Ocean.

The scientists quantified gaseous emissions of inorganic iodine following the reaction of iodide with ozone in a series of laboratory experiments. They showed that the reaction of iodide with ozone leads to the formation of both molecular iodine and hypoiodous acid. Using laboratory models, they show that the reaction of ozone with iodide on the sea surface could account for around 75 per cent of observed iodine oxide levels over the tropical Atlantic Ocean.

Professor Lucy Carpenter, of the Department of Chemistry at York, said: “Our laboratory and modelling studies show that these gases are produced from the reaction of atmospheric ozone with iodide on the sea surface interfacial layer, at a rate which is highly significant for the chemistry of the marine atmosphere.
“Our research reveals an important negative feedback for ozone – a sort of self-destruct mechanism. The more ozone there is, the more gaseous halogens are created which destroy it. The research also has implications for the way that radionuclides of iodine in seawater, released into the ocean mainly from nuclear reprocessing facilities, can be re-emitted into the atmosphere.”

Professor John Plane, from the University of Leeds’ School of Chemistry, said: “This mechanism of iodine release into the atmosphere appears to be particularly important over tropical oceans, where measurements show that there is more iodide in seawater available to react with ozone. The rate of the process also appears to be faster in warmer water. The negative feedback for ozone should therefore be particularly important for removing ozone in the outflows of pollution from major cities in the coastal tropics.”

The research was funded by the UK Natural Environment Research Council SOLAS (Surface Ocean Lower Atmosphere) programme.

**Heslington Church**

The high water table has resulted in some interesting reflections of Heslington Church as the following photo shows:
O’Brien Group News

James Firth was one of eight UK-based PhD students in organic chemistry to be selected to represent the Royal Society of Chemistry in a delegation to attend the J-NOST 8 Conference on 15-17th December at Guwahati IIT in Guwahati, Assam, India. At the conference, James gave a 15-minute presentation entitled “Novel aspects of the a-lithiation/trapping of N-Boc heterocycles”.

Previously, groups of UK organic chemistry academics (including Richard Taylor, Peter O’Brien and Ian Fairlamb) have attended the 12th, 13th, 14th & 15th NOST meetings.

As part of James’ visit to India, he was able to do a bit of sight-seeing including this classic pose in front of the Taj Mahal (see photo)!

Suggestion Box

Reminder: there is a Suggestion Box located next to the pigeon holes in the foyer of A Block and one outside Room K167 for YSBL staff. Suggestions from staff are most welcome. All suggestions are discussed at the departmental communications meeting.
“Dear All,
Charlie and I welcomed our daughter Caitlin Elizabeth into the world on Tuesday morning, 12 days "late" and weighing 10 lbs 1oz - only just fitting into her newborn clothes!

Things a bit crazy as you can imagine, but a couple of photos for you, and thanks for all the good wishes you’ve sent :-)”
York Insulin Chemists in Anniversary Breakthrough

Chemists at the University of York played a pivotal role in new research that has signalled a significant step forward in the understanding of how insulin works.

Chemists in the York Structural Biology Laboratory (YSBL) in the University’s Department of Chemistry are part of an international team that has established the first three-dimensional insight into the complex way the insulin hormone binds to its receptor on cell surfaces. The study is published in Nature, 90 years after the discovery of insulin and 43 years after determination of the crystal structure of the hormone by Dorothy C. Hodgkin.

This first demonstration of insulin/insulin-receptor interaction will potentially assist insulin modification to develop more effective hormone therapies for treating diabetes, a disease which is a growing burden in both developed and developing societies. It could also provide greater understanding of the role closely-related Insulin-like Growth Factor system plays in cell growth and cancers.

The research also involved scientists from the Walter and Eliza Hall Institute of Medical Research (WEHI), La Trobe University and University of Melbourne, Australia; Case Western Reserve University, Cleveland, Ohio, and the University of Chicago, USA and the Institute of Organic Chemistry and Biochemistry (IOCB), Academy of Sciences of the Czech Republic in Prague.

The research presents four structures of insulins with different constructs of insulin receptor. These structures show the key elements of insulin / insulin-receptor engagement, demonstrating that insulin undergoes a conformational switch in this process, and that key elements of the receptor also remodels. Extensive biochemical evidences underpin the structural work.

YSBL and the Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic created super-active insulins to aid the research team’s understanding of how insulin binds to the receptor.
Dr Marek Brzozowski, of the YSBL, said: “Our paper provides landmark, three-dimensional description of the way in which key molecules within these systems interact to initiate insulin signalling events. These findings show the power of structural biology to visualize such fundamental biological processes. Our manuscript provides long-sought insights into the structural biology of a major human endocrine system.

“The success of this study highlights the power of an interdisciplinary and collaborative team approach to an otherwise intractable problem. The discovery and the first clinical use of insulin in Toronto in 1922 represent a historic landmark in the advent of molecular medicine. We believe that the present study, providing the first glimpse of the hormone-receptor complex, represents a major milestone on this, the 90th anniversary of the Toronto discovery.”

The study, which bridged three generations, benefited from the insight of three retired distinguished scientists: Colin Ward in Melbourne (pioneer of the structural biology of insulin receptor), Guy Dodson in York (a student and member of the group of the late Dorothy C. Hodgkin, with seminal contributions to the classical crystal structure of insulin), and Don Steiner in Chicago (discoverer of proinsulin and of related genetic syndromes of diabetes).

The groups of Dr Jiri Jiracek, from IOCB, and Professor Mike Lawrence, from WEHI, are also members of new, large research programme on insulin and Insulin-like-Growth-Factor systems, which is funded by the Medical Research Council and co-ordinated by Dr Brzozowski.

This paper is dedicated to the late Professor Guy Dodson, in recognition of his inspirational and lifetime contribution to the study of the structure of insulin.

**Introduction to Chemistry Staff**

In an attempt to break down barriers and improve communication and collaboration between staff, we are introducing a new section in Chemistry Update where individual staff have an opportunity to tell the Department about their current work and how they arrived in their current role. We hope to include two or three of these in each issue so that at the end of the year we will all know a little more about different members of staff in the Department. We would like to include all staff categories in this (Academic, Teaching Fellows, Researchers, Technical and Administrative staff) so if anyone is willing to prepare some information about themselves then please let Helen know (helen.coombs@york.ac.uk), but don’t think you are safe even if you do not volunteer!
Interview with Professor Mat Evans

Professor of Atmospheric Chemistry Modelling

My research interests lie in combining atmospheric chemistry observations, labs studies and computer models, to enhance our understanding of the processes controlling the composition of the atmosphere. Although inherently interesting, these processes play a significant role for socially important topics such as climate change, air quality and food security. My day to day roles are split (with significant overlap) 50:50 between the department and the National Centre for Atmospheric Science. Within the department we have recently revamped the atmospheric chemistry teaching with new modules for 3rd and 4th year students. I’ve taken on a 2nd year Phys Chem practical (bringing back vague nightmares of my undergraduate times) and a range of tutorials. After many years in environmental science departments I’m enjoying getting back to my physical chemistry routes. On the research side, my group complements the activity of the other York atmospheric chemists (Lewis, Carpenter, Hamilton) and allows us to use observations in new and innovative ways. For the National Centre I perform a range of tasks from chairing the operational committee of the UK Large Research Aircraft (a BAe 146) to thinking about the training of PhD students and staff within the Centre.

From a CV perspective my career has been fairly conventional; an undergrad and PhD at Cambridge (with an intervening MSc at UEA) followed by post-docs in the States (MIT and Harvard). I moved to Leeds with a NERC Fellowship and was then appointed Lecturer and Reader. I moved to the York department in 2011.

If I have any particular expertise it lies in being able to get differing groups of scientists (field, lab, and theory) to work together to produce a greater whole. For a theoretician I’ve been lucky to be significantly involvement in fieldwork and have travelled around the world (Borneo, West Africa, North Atlantic, Northern Canada) supporting and leading field projects. My next major project is in the tropical Pacific (Guam) in spring 2014 where we have a joint project with NASA to look at the transport of chemicals from the ocean surface to the stratosphere. We will take our Large Research Aircraft and NASA will bring their Global Hawk unmanned aircraft. This will be very exciting opportunity for us to take advantage of this new science tool for the first time.
Interview with Dr Simon Breeden

I started in my role as Departmental Operations Manager in October last year and I am still trying to work out exactly what that means. I view my primary responsibility as working with the Technical Team in delivering technical support across the Department to support teaching and research. The team is large and varied covering workshops (electronic, glass, mechanical) stores, computing/AV, teaching labs, analytical and research technicians, and due to the hard work, dedication and skill of those within the team the vast majority of this support happens with little involvement from me. Another aspect of the role is responsibility for infrastructure across the ‘Chemistry Estate’ and this is rapidly expanding; last year E Block (DH2 if you prefer) and CHyM were added, although we were all sad (?) to see the loss of C block. This year we will have F Block completed, as well as the new Integrated Global Atmospheric Chemistry building. The challenges (I choose my word carefully) of designing, building and maintaining these buildings, as well as old faithful A and B Block are numerous and varied and really could not be done without the help of Estates. I also appear to have other roles such as ‘Keeper of the Keys’ (talk to Rob about that one), strategic direction of filing cabinets and executive director of the MA Archives!

I was born and brought up in Stockport, south Manchester (the Red Half) and after getting a D in my Chemistry A Level (it was obviously marked incorrectly), I got a degree in Chemistry from UMIST, now the University of Manchester, where I also stayed to do a PhD in synthetic organic/natural product chemistry working with Nick Lawrence. I then carried out postdoctoral research at Bristol (John Lewis) and Warwick (Martin Wills) and during this time I was also interviewed for a job here in Chemistry by a current member of staff, but they turned me down; for a fee I will tell you who made that mistake?! In 1999 I was appointed to a Lectureship at the National University of Ireland, Galway, a beautiful part of the world, where I stayed for four years and I thoroughly enjoyed my time there, particularly the craic and the Black Stuff. In 2004 I became Senior Scientist in the Green Chemistry Centre of Industrial Collaboration here at York working with James Clark. I learnt a huge amount whilst ‘down in Green’ for eight years and some of the stories (and students) are now the stuff of legend; in 2012 I moved to my current position. I live out in the sticks in East Yorkshire with my long suffering wife, Rachel, two daughters Abigail and Zara (the cake makers) who you can see in the photo (you can only imagine how long it took for them to choose this photo!) as well as three dogs, two cats, six chickens, a snail and a mouse who is eating through heating pipes causing leaks, and no matter how many times I put this on Planon, no one comes to deal with it!
New Starters

**Jo Parkes**, Green Chemistry Industrial Liaison Officer, working for Professor James Clark on the WasteValor project.
Extension number: 2705, Room: C/B016, Email: jo.parkes@york.ac.uk

**Dr Hannah Briers**, Green Chemistry Research Technician, working for Dr Avtar Matharu.
Extension number: 4549, Room: C/B018, Email: hannah.briers@york.ac.uk

**Dr Rosie Chance**, Postdoc Research Associate, working for Professor Lucy Carpenter.
Extension number: 4472, Room: C/D024, Email: rosie.chance@york.ac.uk

**James Sherwood**, Postdoc Research Associate in Green Chemistry, working for Professor James Clark.
Extension number: 4547, Room: C/B020, Email: james.sherwood@york.ac.uk

**Dr Aurelien Ducrot**, Postdoc Research Fellow, working with Dr Anne Duhme-Klair on Bioinspired photoredox catalysts with transition metals for clean oxygenations.
Extension number: 4587, Room: C/E014, Email: aurelien.ducrot@york.ac.uk

**Cristina Viola**, Postdoc Research Fellow (in Structural Biology of Insulin, Insulin-like Growth Factors), working with Dr Marek Brzozowski on A molecular dissection of the interplay between diabetes and cancer.
Extension number: 8276, Room: B/K266, Email: cristina.viola@york.ac.uk

**Dr Tim Ganderton**, Postdoc Research Fellow (in Insulin Receptor), working with Dr Marek Brzozowski on A molecular dissection of the interplay between diabetes and cancer.
Extension number: 8276, Room: B/K266, Email: tim.ganderton@york.ac.uk

**Joelle Halliday**, Primary Professional Development Leader in CIEC, working for Gayle Pook.
Extension number: 2508, Room: A/D122B, Email: joelle.halliday@york.ac.uk

**Dr Victoria Annis**, Research Technician in CHyM, working for Professor Simon Duckett.
Extension number: 5886, Room: CHM/115, Email: victoria.annis@york.ac.uk

**Dr Thomas Dugmore**, Green Chemistry Technical Liaison Officer, working for Professor James Clark on the WasteValor project.
Extension number: 2552, Room: B028, Email: tom.dugmore@york.ac.uk
New Biorenewals Development Centre (BDC) Appointments

The Biorenewables Development Centre (BDC) recently won funding from European Regional Development fund (£4.44 million) to expand it’s team to 16 members of staff. This builds of the £4.5 million currently invested by ERDF and BIS for building and equipping the centre. The centre aims to bridge the gap between academic research and industry product development. The BDC has been designed specifically for the extraction and processing of high value chemicals from plant and microbial material including bio-wastes at a scale of 10 – 1000kg. The centre is a joint venture between the Green Chemistry Centre of Excellence and The Centre for Novel Agricultural Products (CNAP) in biology. All staff are University employees and are appointed from either chemistry or biology departments.

Dr Joe Ross – Centre director has moved into the BDC from the Innovation office.  
joe.ross@york.ac.uk, Biocentre 2.52b.

Dr Mark Gronnow joins the BDC as Process Development Manager whilst maintaining a role within the Green Chemistry group.  
mark.gronnow@york.ac.uk, Biocentre 2.52b. Tel. 567821

Peter Hurst joins the BDC as Process Development Unit Technician following his PhD in Green Chemistry.  
peter.hurst@york.ac.uk, Biocentre 2.52a. Tel. 561568

Dr Raymond Sloan has been appointed as Process Development Unit Technologist and Safety Officer following working for D1 Oils in York.  
raymond.sloan@york.ac.uk, Biocentre 2.52a. Tel. 561568

Dr James Tunstall joins the team in early February from iPRD at University of Leeds.

A further process development unit post is currently in recruitment.

Dr Fabien Deswarte will head the Business Development Unit and returns to York on February 11th following working at the British Embassy in Paris. Fabs’ first task on returning will be to recruit 3 staff to engage businesses into the centre. Biocentre 2.90.

Dr Debs Rathbone – Feedstock Development Manager has joined the team from CNAP Feedstock Development and is based in the biology department. Debs will be assisted by a team of 4 scientists joining throughout February.

Any staff wishing to discuss use of the facility or a tour please contact Mark Gronnow.
Graduation

Congratulations to the following students who will be graduating on Friday 25th January

<table>
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<tr>
<th>Degree</th>
<th>Names</th>
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| PhD                                         | Anna Barnard  
Peter Birch  
Aimee Gamble  
Matthew Gosling  
Lorenzo Herrero-Davila  
Charlotte Leese  
Barbara Procacci |
| MSc by Research                             | Adrian Gainar  
Oliver Pickup |
| MSc Green Chemistry and Sustainable Industrial Technology | Xin Ning Beh  
Andri Constandinou  
Maximilien Czech  
Saimeng Jin  
Alice Kwong  
Ran Li  
Nadiah Mohamad Noh  
Giulia Paggiola  
Katie Privett  
Stewart Selbie  
Kush Sethi  
Zainab Wali |
| MChem                                       | Amber Abernethie |
| PhD (in absentia)                           | Abeda Jamadar  
Gang Li  
James Naughton  
Ruqia Nazir  
Michele Schulz  
Robert Thatcher  
Somia Bajwa |
| MPhil (in absentia)                         | Abigail Bubb  
Bun Yeung |
| MSc by Research (in absentia)               | Dan Han (Tina)  
Michael Saunders |
| MSc Green Chemistry and Sustainable Industrial Technology (in absentia) | Rui Li  
Namfon Natrakul  
Filoklis Pileidis  
Kam Lung Sze  
Yang Zou |
Chemistry Postgraduate Open Day – 16 January

The department held its second Postgraduate Open Day of the 2013/14 recruitment cycle on Wednesday 16 January. Around 30 people attended, all interested in PhDs or MSc by research. They are currently carrying out or have recently completed their undergraduate studies at a number of different universities including Cambridge, Manchester, Sheffield, Glasgow, Newcastle, Bradford, the Open University, York College, and York.

The programme included an introduction from Dr Paul Clarke as Acting Chair of the Graduate School, Departmental tours, specific PhD project information, an opportunity to speak to current PhD students, and individual meetings with academic staff.

We received positive feedback from those attending and academic staff. Students commented that they most enjoyed speaking to academic staff and current PhD students to get a real feel for the research and what postgraduate research degrees involve.

Thanks to all those who helped make it a success. Thanks also to those PhD students who chatted to MChem Industry students about PhDs at their interim meeting on 23 January.

Studentship Deadlines

The following dates apply to DTA studentships and Wild Fund Scholarship Applications

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<td>11/02/13 to 22/02/13</td>
<td>Interviews for PG places</td>
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<td>22/02/13</td>
<td>Deadline for interview reports to Graduate Office</td>
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<td>05/03/13</td>
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<td>08/04/13 to 1/04/13</td>
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The search for material about the history of the department has been unearthing some gems. Dave Lindsey, who some of you will remember as a technician in the teaching labs, has provided some cricket and other sports photographs, amongst the photos was his write-up in his usual racy style of a match where chemistry 'was robbed' on a technicality reproduced below:

**Chemistry Dept. XI v. PDP XI (Computer Science)**
Staff Cricket League. 1s\(^1\) July 1987. 22 Acres.
20 overs per side. 4 avers per bowler.

It was 3 years since Chemistry had won the coveted 'Tin Pot Trophy' in 1984. Having lost early in the season to the Education XI it was crucial that Chemistry won all their remaining 5 fixtures to have any chance of winning the league. But the team was going through one of its regular 3 yearly overhauls with Richards, Inchey, Taylor, Haddleton and Parry all departing and at least 5 new players in their first season. Plus Justin Bryans the opening bowler in 1986, fast and very effective, was on holiday.

But Chemistry had been fortunate to have Simon Morris an undergraduate who played for the 1st XI working in Teaching Labs over the summer. Ben Francks whose department had no team, was a useful bat and Uma an Indian post Doc who claimed to have played for University side in Delhi (!) were all in the side. There was Tony Wilkinson a tall young lecturer in Guy Dodson's group often a source of talented cricketers, and Craig Jones and Simon Duckett two 1st year research students. Jones had taken 5 wickets in his first two matches and Duckett had scored 30 against Economics. The Computer Science captain, the spectacled, tall and gangly Jim Briggs won the toss and elected to bat. Jim was famous for creating the electronic scoreboard at Headingley featured on the front of Mike Brearley's Pheonix from the Ashes. He had a high opinion of his own cricket skills and could be a prickly opponent. Even other members of the Computer Science team such as the long suffering Andy Wellings didn't share that opinion. The Chemistry team generally left him in no doubt of how high he ranked in their estimation.

However on this evening Computer Science undoubtedly had the better of the first 20 overs. Morris and Jon Stell kept things fairly quiet for the first 5 overs but without making any breakthrough. Wellings and a newcomer Crosby put on 27 without any alarms. But Lindsey, Jones, Belt and Wilkinson all proved rather expensive particularly against the aggressive Wellings who carved his way to 78 not out in the 20 overs.
Jones took the only 2 wickets to fall disposing of Crosby (22) and the dangerous Galloway (8) with the score on 67 and 81 but with Hamilton (18no) joining Wellings for the final 6 overs the score reached 133 — 2. Nowadays that would be nothing special in a 20 over match but in 1987 a par score was about 100 so anything above 130 was quite memorable. Chemistry rarely scored more than 120 even against the weaker teams in the League. Wellings hit 4 x 6s in his innings. It was 1994 before Chemistry who were the most successful side in the League had a player score a century. In 1987 the record score was 76.

So Chemistry realised they were going to have their work cut out to get anywhere near the Computer Science total. But initially things went well. The Chemistry team in 1987 had some real fighters. After starting by facing a maiden over, the often stodgy and pedestrian Simon Belt kept the score ticking over, knowing they had to maintain 6 runs plus each over and he and the scampering Sajii Eapen had progressed to 44 off 7 overs when to his consternation and the delight of the fielding side, Sajii hit his own wicket with his bat. Disaster. But Sajii was replaced by the angular Teaching Lab casual Simon Morris who kept up the rate so that at the half way stage of 10 overs Chemistry were 70 for 1. On target. But as so often happens when chasing a high total the next 5 overs saw a flurry of wickets. On 86 in the 13th over, Morris was caught behind off Wellings, what a night he was having, for 27. Two runs later the Delhi star Uma went for an impossible single and was run out for 2. 88 for 3. Francks who looked a class bat was unlucky to be stumped in the same over (the 14th) for just 4 and off the bowling of the increasingly irritating Jim Briggs. 92 for 4. Then to complete Chemistry's misery, the first ball of the next over, the 15th brought the prized wicket of Belt for whilst he was at the crease Chemistry still had hope. He was caught, by Briggs of course at his favourite position of point, off the bowling of Wellings again. 94 — 5. But there was just a glimmer. 39 needed off 5 overs. Not impossible. So with 2 new batsmen, Wilkinson and Nick Owen a colourful graduate from the James Clarke group together, 12 runs came off the next 9 balls but on 106 Wilkinson fell just as Francks had, stumped Galloway bowled Briggs. 2 wickets for Briggs and he was getting unbearable. 27 needed off less than 4 overs and Simon Duckett, impossibly tall, strode out to join Owen, pads just reaching his knee caps. Another 12 runs came in a madcap partnership off just 7 balls with Wellings for once taking some stick from Duckett and Owen becoming ever more cavalier. But in the 18th over it proved his undoing, run out going for another impossible single off the returning Dillistone. Briggs already planning to save the crucial last over for himself. Nothing if not confident. 118 for 7 and 15 still needed off 2 overs and 3 balls. So perfect symmetry. 15 runs off 15 balls. Duckett drives for 2. The pressure gets to Dillistone who bowls a wide but then more trouble as the rotund Jones hacks at a half volley and is caught yet again by Briggs off Dillistone. So it's down to the wire. Chemistry are 122 for 8. Jon Stell emerges to join Duckett who looks quietly confident.
Lindsey the no. 11 on the boundary is quietly praying he won't have to bat. It's simple. 12 needed off 2 overs. 12 off 12 balls. Computer Science don't have to get anyone out they just have to stop the 12 runs. If the scores are tied Computer Science will win having already lost less wickets. Dillistone, Wellings and Briggs have an over each left. Common sense would dictate that Wellings who can do no wrong tonight should bowl the last over. Which would mean Briggs bowling over 19. But no. Wellings steps up to bowl. Hmmm.

Duckett and Stell do their best. They know Lindsey simply can't bat. So they try to score waiting for the one bad ball. But it doesn't come. Wellings goes for just 3 singles and 2 precious byes in his over. 125. 9 needed off the last 6 balls. Dillistone has 1 for 16 off 3 overs. Briggs has 2 for 25 off 3 overs. Who bowls? Briggs does. Of course he does. He's the captain. Gentle off spinners bowled by an ungainly academic who is at least 6 foot 3. But they do turn. A bit. Jon Stell is facing. First ball. Smacked into the covers but only one. 8 needed off 5. Duckett faces. He misses the ball completely. Shouts of delight from the Computer boys. Next ball, the 3rd, is again a single. It's gone. Nobody on the boundary can believe we've got so near and blown it. 3 balls to go. 7 needed. Stell faces. It's all too much. Briggs is chucking pies and neither batsman can connect. Stell misses. Galloway takes it close behind the stumps. It's over. 2 balls. 7 runs. 2 boundaries maybe? The last boundary was one Nick Owen hit 3 overs ago. Ball 5. Stell smashes it down the ground but Jim has his long off back and it's just another single. 1 ball to go. Chemistry need a six. There hasn't been a six in the entire Chemistry innings. We're on the edge of the square on Oak tree square (so called because there's an oak tree on the edge of the cricket pitch just inside the boundary) and Duckett has his back to the Golf Club. Briggs is bowling from the 'Heslington Village end' towards Fulford. Chemistry need a six. Briggs bowls. Of all the pies Jim has chucked tonight this is the juiciest. It's tossed up invitingly just outside off stump. Slightly over pitched. If you wanted somebody to play a lofted cover drive this would be the ball you'd bowl. Maybe in the back of his enormous brain, in the box marked 'off spinner' Jim fondly imagines he can 'beat him in the flight'. That's what spin bowlers, proper spin bowlers talk about. But Jim has just thrown up a delightful slow half volley and Duckett leans forward slightly and plays the most beautiful cover drive he's ever played. Maybe the only one he's ever played. The shot all mediocre middle order casual cricketers dream of playing. Perfect. And the ball flies off the middle of the bat. It soars into the evening sky. The whole game stops. All 22 players hold their breath. Maybe the whole of York holds its breath.
The ball flies in a perfect arc, over the edge of the square, over the boundary and with a slight swish falls to the ground a good 15 feet over the white line. And the Chemistry team goes berserk. It's a six! Duckett's hit a six. We've won. All the accumulated pressure and tension and certain knowledge of defeat is blown away in a wild frenzy of delight.

All except for one person. Briggs. He's standing there in front of me. Pointing accusingly at the oak tree. 'It's not a six'. 'It hit the tree. It's only a four. You know the rules. It hit the tree. It's only a four. We've won. And he repeats it over again. You know the rules. It hit the tree. It's only a four.

And now I realise what the noise was. The slight swish. The slight swish was the ball hitting the outermost leaves of the outermost branches of the oak tree. The oak tree that stands inside the boundary on oak tree square. And because of where it stands there is a local rule that if the ball hits the tree it's a four. The rule is there so that if the ball bounces back off the trunk of the tree you can't be caught out of the trunk. And so that if it bounces back onto the outfield which it sometimes does then the tree can't be like an extra fielder. You can't pick the ball up and throw it back to the keeper. It's a dead ball. But this was different. The ball didn't bounce back from the trunk. It clipped a branch on its way over the boundary for six. I'm furious. I don't mind admitting it. I've always doubted Jim's basic sportsmanship, no never mind that, his basic humanity, but this is just ridiculous. It's a six. Even members of his own team including the long suffering Andy Wellings are starting to have doubts. There are quiet suggestions of 'oh come on Jim'. It was a six. But Briggs will have none of it. He lives by the rule of law. It hit the tree. It's a four.

The aftermath does none of us any great credit. We both demanded a ruling from the Sports Centre who we felt were the Supreme Court for University sport. And they ruled in favour of Computer Science.

I got over it. Eventually. Although as I write about it twenty six years after the event it still rankles.