

# Chemistry Update

Newsletter 311, 26 July 2019

## Inside this Issue

Towards clinical coagulation control	2
National Student Survey 2019	3
Dr Avtar Matharu gives talk at ChemspecEurope 2019	
NDTC Technician Skills Survey	4
Dial-a-Molecule Annual Meeting 2019	5
North Group attends 17 <sup>th</sup> International Conference on Carbon Dioxide Utilisation	6-7
Message from Abby Mortimer	7
New starters	
Support for wellbeing, mental health and other issues	8-9
Dr Glenn Hurst presents at the 8 <sup>th</sup> European Variety in	10
Promotion Seminar for Academic, Research and Teaching Staff	

## Calendar of Events

### Organic Seminar

Speaker: Dr Pierre Stallforth, Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute

Date: Monday 29 July

Time: 10am—11am

Location: C/B/101

### Chemical Interactions International Picnic

Date: Tuesday 6 August

Time: 12pm—2pm

Location: C/A/122

### Lunchtime wellbeing walk

Date: Friday 16 August

Time: 12.15pm—12.45pm

Meet 12.10 at Chemistry reception

### Promotion Seminar for Academic, Research and Teaching Staff

Date: Thursday 29 August

Time: 10am—11am

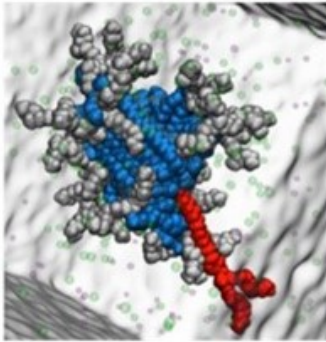
Location: C/A/122

Date of Next Issue:

30 August 2019

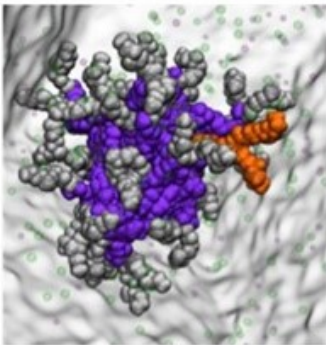
# Towards clinical coagulation control

**The latest research from the Smith group presents heparin binding agents with greater stability and lower toxicity, which may be useful in helping control blood clotting after major surgery.**



Heparin is a drug used during major surgery for blood thinning, however, once surgery is complete, the heparin must be removed so that clotting and healing can begin. This is currently achieved using protamine, which binds to heparin and removes it from the bloodstream. The protamine protein, which is extracted from shellfish, can have adverse effects and must be used with some caution. There is, therefore, considerable interest in creating synthetic versions of protamine that can do the same job.

[Professor Smith](#) and his research team have been interested in this problem since he learned about the issue from doctors when his husband Sam had a lung transplant in 2011.



Current approaches to synthetic heparin binders use small molecules of large polymers. Such small molecules can suffer from low binding affinity, given that heparin is itself very large. Conversely, although polymers bind heparin very well, their use can result in unwanted persistence in the body and toxicity effects.

The Smith group's approach is to use small molecules that assemble together into a larger structure. In this way, they harness the advantages of strong binding from a larger structure, but with the potential for it to be broken down into smaller molecular parts with lower toxicity and persistence. They refer to their approach as self-assembled multivalency (SAMul), named after Dave's husband, Sam.

In [previous work](#), researchers in Smith's lab demonstrated that this approach could be highly effective. The first generation systems they assembled, however, were not stable enough in highly competitive human blood serum, and started to break apart, lowering their binding affinity. This also gave them unacceptable toxicity profiles as they inserted into cell membranes.

In their new research, Smith and his team, along with Prof Sabrina Pricl from Italy and Dr Nadezda Apostolova from Spain, have demonstrated that by changing the 'molecular glue' that causes their SAMul systems to assemble, they can improve their stability. Computational work proved that it was much harder to disrupt their new system than their previous one. This enhances heparin binding in human blood serum. In addition, it lowers the toxicity, as the more stable systems do not disrupt cell membranes.

With high affinity and acceptable toxicity profiles the new systems have considerable potential. Professor Smith says:

"We were delighted to see that by careful chemical programming of our SAMul systems, we were able to improve their performance against key clinical parameters. Future work in our labs in this area will focus on the translation of systems such as these into a real-world clinical setting. Our ultimate goal is to put new tools into the hands of teams responsible for surgery, making it safer and more predictable".

The research is published in [Biomaterials Science](#).

# National Student Survey 2019

**We're delighted to have some of the happiest chemistry students in the UK.**



The Department of Chemistry has received 94% for 'Overall Satisfaction' in the 2019 National Student Survey (NSS).

The NSS is a nationwide survey of final-year students in higher and further education that encourages them to give honest feedback about a variety of aspects of their university experience, including their department and course. This helps prospective students to make informed choices and also influences real change in future students' experiences, from institution-level to course-level.

The University as a whole was rated highest of the Russell Group universities in the survey for overall satisfaction.

The Department placed first out of the surveyed Russell Group universities in five areas - 'Assessment and Feedback', 'Academic Support', 'Learning Community', 'Learning Opportunities' and 'Learning Resources'. We achieved also over 90% satisfaction in four of the assessed areas:

- Teaching on my course (91%)
- Learning opportunities (93%)
- Learning Resources (95%)
- Overall Satisfaction (94%)

The results were welcomed by Head of Department, Duncan Bruce. He said: *"Staff across the Department work very hard to ensure our students have the best possible learning opportunities and it is very pleasing to see that effort recognised in these strong NSS results"*.

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## Dr Avtar Matharu gives talk at ChemspecEurope 2019



[Dr Avtar Matharu](#), Deputy Director of the [Green Chemistry Centre of Excellence \(GCCE\)](#), gave a talk as part of the RSC's 'Resourcing our Resources' symposium at [ChemspecEurope 2019](#) entitled "Squeezing more than just orange juice: citrus peel valorisation". The conference was held on 26-27 June in Basel, Switzerland, with over 2,000 delegates from academia and industry in attendance.

Avtar specialises in gaining high additional chemical value from otherwise low-value resources or waste such as unavoidable food supply chain wastes, developing sustainable supply chains and circular economy within the context of biorefineries.



## NDTC Technician Skills Survey Update

Thanks to you all for taking the time and effort to fill out the survey. The Technician Commitment Steering Group were thrilled with an overall University completion rate of 86%, including a **100% completion by Chemistry!**

You will shortly be receiving your individual survey report, and over the coming weeks the survey team will be analysing the combined results and providing departmental reports including:

- Areas of strength and technical specialism
- Areas of risk
- Support of career progression
- Alignment to Research/Teaching Strategies and Athena Swan

Some early observations:

"44% of technicians are providing personal support to those around them, with the vast majority (72%) of these including professional support for students."

"38% of technicians who feel they have management responsibilities have received no training or development to support them with these responsibilities."

"15% of technicians listed themselves as Professionally Registered. People feel the main obstacles to Professional Registration are not seeing the benefit, the cost and in some cases, being close to retirement."

A number of technicians have requested support with career planning and also training that would help their development. This will be examined in further detail over the coming weeks to work out what we can offer specifically to help these needs.

We will keep you updated on the Skills Survey and other Technician Commitment news via the TechYork web pages and email. In the meantime, if you have any questions, please feel free to contact us ([technician-commitment@york.ac.uk](mailto:technician-commitment@york.ac.uk)).

Thanks once again

Technician Commitment Steering Group

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## Online Department suggestion box



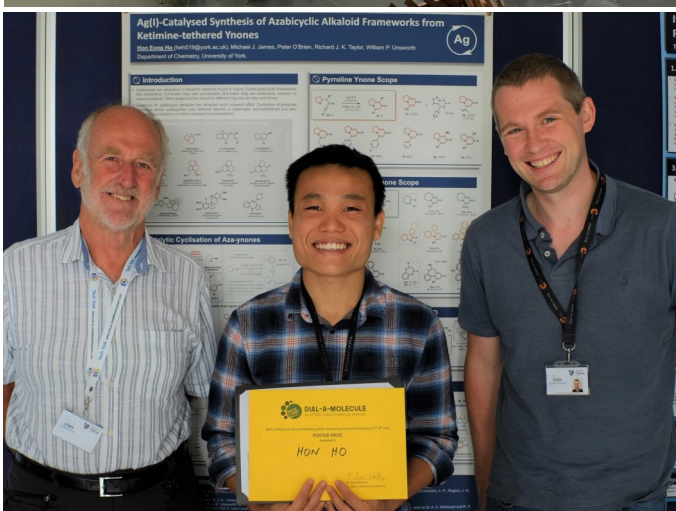
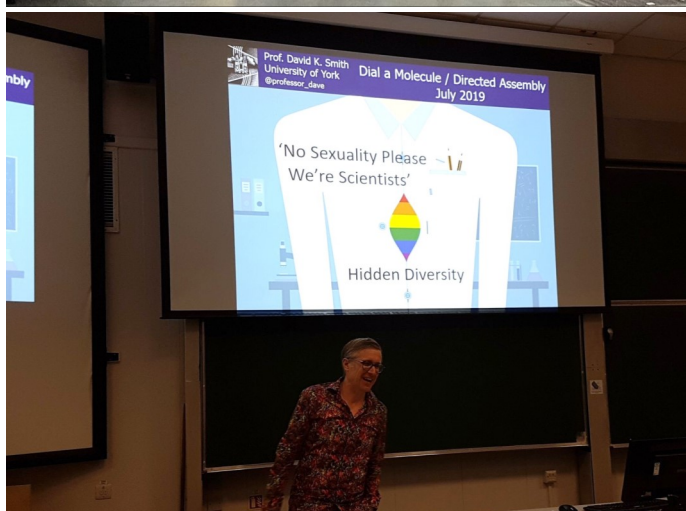
The online Equality and Diversity suggestion box has been extended to be a suggestion box for the whole Department. You can submit your thoughts/suggestions/ideas for general Departmental matters as well as matters relating to Equality and Diversity. You can find the Google form on the intranet homepage or at this [link](#).



# Dial-a-Molecule Annual Meeting 2019

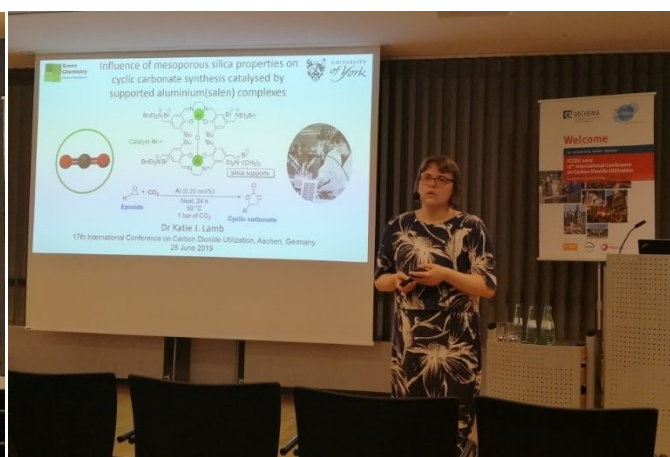
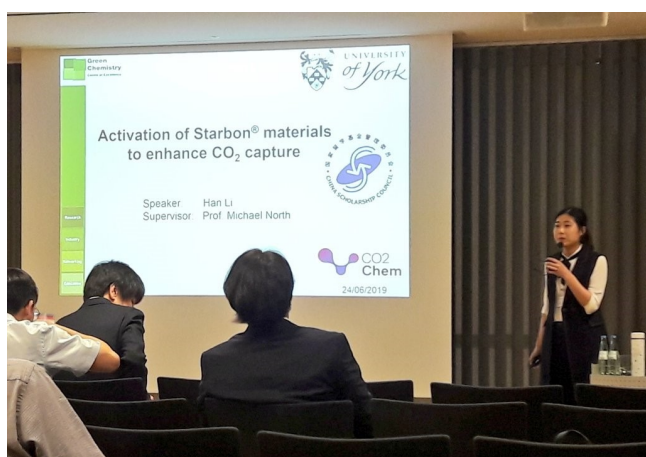
## Report by Dr Hon Eong Ho

Both the 4<sup>th</sup> Dial-a-Molecule Annual Meeting and the Dial-a-Molecule/Directed Assembly networks ECR meeting were held in York on 3-5 July 2019, with [Dr Will Unsworth](#) as the local organiser. The events covered a series of plenary and short talks and gathered an expanded network of synthetic, computational, flow and electro chemists, along with industrial partners and exhibitors, to discuss science and enhance future collaboration. The event was very well received by all the delegates and was concluded on a high note with a dinner at the iconic National Railway Museum. Highlights from a York perspective were an excellent research talk on Pd particles in catalysis, delivered by [Professor Ian Fairlamb](#) on the opening morning, and an enlightening session on Equality and Diversity in Science at the ECR event with great contributions from [Professor Dave Smith](#) and Dr Leonie Jones. Dr Hon Eong Ho (WPU/RJKT/PAOB groups) won the runner-up prize in the poster competition sponsored by RSC with the poster entitled 'Ag(I)-catalysed Synthesis of Azabicyclic from Ketimine-tethered Ynones'. Ho enjoyed some great discussions with the participants on ynone chemistry.



# North Group attends 17<sup>th</sup> International Conference on Carbon Dioxide Utilisation (ICCDU XVII)

On 23-27 June, [Professor Michael North](#), [Dr Katie Lamb](#) and PhD student Han Li from the Green Chemistry Centre of Excellence (GCCE) attended the ICCDU XVII Conference in Aachen, Germany. This international conference had over 300 industrial and academic attendees from across the globe, all with a common interest in researching carbon dioxide utilisation, as well as carbon capture and storage. Mike, Katie and Han all gave oral presentations on their research and Katie was also invited to chair a session on “CO<sub>2</sub> to carbonates” during the conference. The heat was literally on for the MN group as the heatwave of Europe struck Germany during this conference, with temperatures reaching 34-36°C. This did not deter the MN group’s presentations, which were all well received at the conference.



Han Li (top Left), Katie Lamb (top right) and Mike North (bottom) giving their presentations at the conference.

The MN group also attended the conference alongside collaborators from the Federal University of Rio De Janeiro in Brazil, including Professor Claudio Mota, Dr Leonardo Ozório and Dr Aryane Marciniak. Overall, the conference was extremely enjoyable and was a great way to kick off further joint research ventures between the North and Mota research groups. Dr Ozório will be joining the MN group at the GCCE for three months from July to late September, followed by Dr Marciniak from October to late December, as part of a joint UK-Brazil GCRF research project.





Celebrating the success of the conference with a well-earned German Bier! From Left to Right: Han Li, Katie Lamb, Mike North, Leonardo Ozório, Claudio Mota and Aryane Marciniak.

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## Message from Abby Mortimer

*"I just wanted to say a huge thank you to everyone for all of the lovely kind words of support offered to myself and Chris during our adoption process. I have been overwhelmed by the cards, gifts and messages of congratulations that we have all received, and I just wanted to say how much they are all truly appreciated. Thank you again, from Abby, Chris and Finnley."*

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## New starters

**Dr James Beament**, PDRA with Dr Thomas Farmer  
Room: C/F/111; Ext: 4547; Email: [james.beament@york.ac.uk](mailto:james.beament@york.ac.uk)

**Eloise Alsop**, Technical Specialist: Scientific Glassblower - adoption cover for Abby Mortimer  
Room: C/A/012; Ext: 2504; Email: [eloise.alsop@york.ac.uk](mailto:eloise.alsop@york.ac.uk)



# Support for wellbeing, mental health and other issues

Further to the introduction of [Wellbeing Champions](#) into Chemistry, we have some additional sources of support which may be useful for staff (and some students). An important change is that the University has recently introduced a new employee assistance programme provided by Health Assured. In addition support is available through Remploy and the Education Support Partnership.

## Who can access Health Assured?

**For Staff**, the University offers an employee assistance programme through [Health Assured](#) offering independent, free and completely confidential telephone support, online resources and, where appropriate, face-to-face counselling. The service is offered to dependants and retirees (up to 3 months) within HMRC guidelines (Health Assured define dependants as immediate family members: spouse/partners and children aged 16 to 24 in full time education, living in the same household').

## How do I get in contact with Health Assured?

You can call **0800 030 5182** and Counsellors are available to talk through any problem, no matter how big or small, 24 hours a day, 365 days a year.

Health Assured is not just there for emotional support. They can also provide practical advice over the telephone and [online](#) (a live chat and resource packs are available as well as a Health e-Hub app).

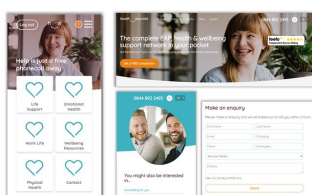


## What support is available from Health Assured?

- Legal, financial and tax advice including debt, financial assessments, LGBT discrimination and partnership rights
- Physical health advice and wellbeing resources
- Support for coping with separation and divorce, bereavement and loss, coming out, phone and cyber bullying
- Managing change, time and stress
- Help with family care: assistance with practical problems relating to childcare, care of the elderly, disability care and even pet care
- Help with everyday matters (e.g. moving house, probate and wills, transport, NHS doctors/dentists, evening classes, party planning)

### Online Tools & Accessibility

- Health e-hub mobile app
- Health & Wellbeing Portal
- Online CBT course
- Video counselling
- Counselling support via email
- LiveAgent Instant Chat
- Accessibility:
  - Minicom
  - Braille
  - Easy read
  - Alternative colours
  - Materials in other languages
  - Translation services
  - Video counselling with BSL counsellors



### Information Services

- Legal**
  - Access to in-house legal professionals with four years' study having both a Law degree and completed a Legal Practice Course (LPC)
  - Support on a range of issues including, but not limited to: motoring, consumer, family including dependant care, wills and commercial
  - Signposting to appropriate specialist free organisations such as CAB, ACAS etc
- Financial and Debt**
  - Access to advisors with four years' study, degree qualification and a minimum of two years' experience providing signposting and support services, and who are advised by leading organisations such as the Money Advice Service and Stepchange
  - Support on a range of issues including, but not limited to: debt, investments, pensions, managing money and negotiating with creditors
  - Signposting to appropriate specialist long-term free support with national debt charity Step Change



## Can I get support as a manager or supervisor from Health Assured?

The service also provides [Managerial advice](#) for anyone in a managerial or supervisory role. It does not advise on specific workplace policies or procedures but provides a confidential, facilitative and supportive space to think creatively about workplace challenges and identify the best way forward. To access this support call the same number as above (0800 030 5182).

Managerial advice could include help with:

- Delivering performance reviews
- Handling critical incidents
- Resolving workplace conflict
- Time management
- Balancing work and home life
- Devising realistic self-care strategies
- Breaking bad news, such as redundancy
- Dealing with employee addiction
- Supporting bereaved staff

For specific guidance on University policies or procedures in relation to managing staff please contact Helen Coombs or Sue Dunkerley ([helen.coombs@york.ac.uk](mailto:helen.coombs@york.ac.uk) / [chem-admin@york.ac.uk](mailto:chem-admin@york.ac.uk)).

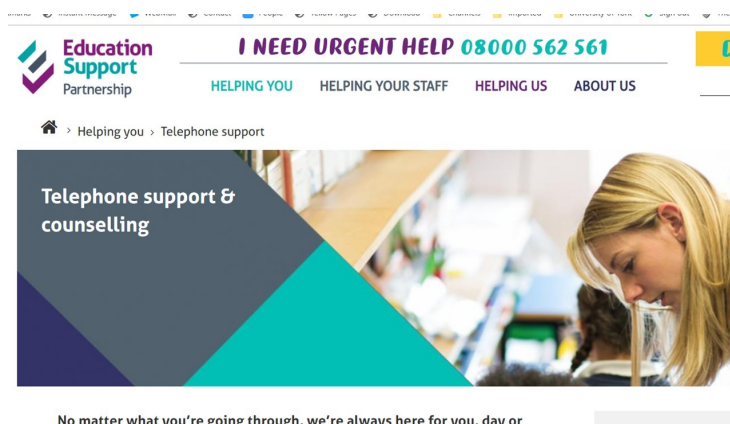
## Health Assured visits to the University

Health Assured will be onsite on 12 September to explain the different services and support available to University of York staff, please [sign up to find out more](#).

## What are other sources of help?

The [Education Support Partnership](#) also offer a 24/7 telephone counselling service for all staff in education and can be contacted on **0800 562 561**.

[Remploy](#) who deliver an Access to Work Mental Health Support Service. You can contact them via a confidential helpline on **0300 456 8114** or email: [a2wmhss@remploy.co.uk](mailto:a2wmhss@remploy.co.uk).



Please note this also covers students who are employed part-time.

[Chemistry web pages on Disability and Mental Health](#) offer more information about further support.

## Dr Glenn Hurst presents at the 8<sup>th</sup> European Variety in University Chemistry Education Conference



From 17-19 July, [Dr Glenn Hurst](#) attended the 8<sup>th</sup> European Variety in University Chemistry Education Conference at the Monash Prato Centre in Tuscany, Italy. Glenn was on the scientific committee for this conference, which was organised under the auspices of the EuChemMS Division of Chemical Education, and in collaboration with the Royal Australian Chemical Institute, Societa Chimica Italiana and the Royal Society of Chemistry. The event was hosted by Tina Overton and Chris Thompson (both of whom contributed towards our departmental seminar series in 18/19). This was a particularly special EuroVariety conference given the very significant number of Australian participants who attended, providing an excellent opportunity for international networking.

Professor Peter Mahaffy (Canada), Dr Samantha Pugh (UK) and Dr Gwendolyn Lawrie (Australia) delivered three marvellous keynote lectures over the three days. Glenn chaired one session and delivered two talks on 'The green formula for international chemistry education' and 'Systems thinking in green chemistry education'.

As part of his role as Chair of the Royal Society of Chemistry Higher Education Group, Glenn and colleagues were successful in attaining funding to create travel bursaries in order to make this special conference more accessible for colleagues to attend.

 **RSC Higher Education Group (HEG) @RSC\_HEG · Jul 17**  
Congratulations to Barry Ryan (@CBS\_Lecturer), Roy Lowry and Tom Anderson on receiving their @RSC\_HEG bursaries for attending @eurovariety2019



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## Promotion Seminar for Academic, Research and Teaching Staff

**Thursday 29 August • C/A122 • 10:00-11:00**

If you would like to find out more about the University Promotion process then please come along to the Departmental Seminar on Thursday 29 August at 10.00 in C/A122. If you are unable to attend at this time but would like to have come along then please let Helen know ([helen.coombs@york.ac.uk](mailto:helen.coombs@york.ac.uk)) so that we can ensure you receive the relevant information.



**Chemical  
Interactions**

# International Picnic

**Tuesday 6th August  
12 – 2pm in C/A122**



**Bring food from your region or  
home country for others to try**

**All welcome -  
bring your friends!**

**Celebrate the diversity of staff  
and students in the Department**

**We will provide soft drinks,  
plates, napkins and plastic  
cutlery**

**To help us plan for the event, please sign up via the link  
[bit.ly/2NxttUa](https://bit.ly/2NxttUa) or the QR code:**



*Chemical Interactions provides all Departmental members (students and staff) with opportunities to get to know each other through informal and social events.*

Email: [chemical-interactions@york.ac.uk](mailto:chemical-interactions@york.ac.uk)

[www.facebook.com/ChemInteractions](https://www.facebook.com/ChemInteractions)

