

The rbital

University of Warwick Chemistry Department Newsletter

Issue No: 14 April 2014

Royal Society Industry Fellowship Award

Congratulations to Professor **Julie MacPherson** who has recently been awarded a Royal Society Industry Fellowship.

This award will enable Julie to translate her boron doped diamond electrode research to the commercial world by working with collaborators at Element Six to deliver new all-diamond electrochemical sensors, at cost-effective prices.



Chemistry Promotions



Nick Barker



Stefan Bon

Many congratulations to the following colleagues who have been promoted for their outstanding contributions to the Department and University:

Nick Barker – Senior Teaching Fellow

Stefan Bon – Personal Chair

Andrew Dove – Personal Chair

Vas Stavros – Reader

The appointments are all effective from 1st June 2014



Andrew Dove



Vas Stavros

Arrivals & Departures

We extend a warm welcome to:

John Bomphrey – Research Fellow

Robert Deller – Research Assistant

Judith Havemann – Research Fellow

Chris Kay – Research Assistant

Daniel Lester – Research Technician

Joaquin Sanchis-Martinez – Research Fellow

Qiang Zhang – Research Fellow

Sharon West – PG Research Coordinator (Maternity Cover)

We say thank you and goodbye to:

Eleni Bitziou – Research Fellow

Zhe Liu – Research Fellow

Adam Morgan – Research Assistant

Zoe Mycroft – Research Fellow

Christopher Parlett – Research Fellow

Philip Rushworth – Research Fellow

Constantinos Zeinalipour-Yazdi – Research Fellow

Congratulations!

Congratulations to **Sarah Clark** and **Emma Tombs**, Teaching Laboratory Technician Assistants, on being appointed as permanent members of staff, effective from 1st January 2014.

Many congratulations also to **Louise Busk**, **David Josey** and **Mike Shipman** for completing 10 Years Service!

Outreach Activities

Nick Barker

On the 26th March, thirty 9 and 10 year old children from St Mary's RC Primary School, Studley visited us, touring the Department and completing 3 experiments in our teaching labs. We asked them what they thought about their visit – these are the words of one of the pupils, Imogen Harris (age 9). The rest of their wonderful drawings, poems and letters can be seen on display on the 5th floor of the main building.

Science is fun. Finding potions. Concentrating every day. New experiments to create. Interesting creations some big, some small. Enjoying every second. Never giving up. Science is Cool. Doesn't matter if you're wrong. Everyone can do science you just have to believe.

School visits of Professor Peter Sadler (accompanied by Wynne Kam and Candice Chang, PhD student of HKU), where he gave talks on the Periodic Table and elements in relation to human day to day life and chemical demonstrations.



Shatin College, Hong Kong – 15th November 2013

The talk and demonstration were interactive and students were very interested in the experiments, it was a great way to promote Chemistry.

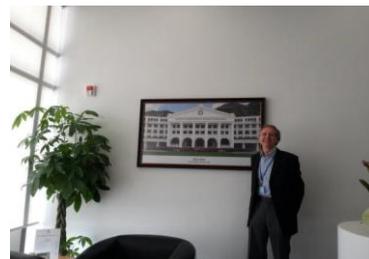
According to the College, it was the first time a University Professor had visited to give lecture to students and they valued the opportunity. A total of 60 Year 13 IB students and two Chemistry teachers attended the event.



Harrow International School, Hong Kong – 22nd November 2013

Harrow welcomed the academic visit to the School to give a subject-specific lecture to students. A good way to promote the University and support the School.

A total of 18 GCSE, AS & A2 students and a Chemistry teacher attended the event.



Dulwich College International High School Programme, China – 25th November 2013

Students were very excited about the talk and demonstration. Two A2 students were very interested in Chemistry and stayed behind to talk to Professor Sadler.

A total of 20 AS & A2 students and a Chemistry teacher attended the event.



Guangdong Country Garden School, China – 2nd December 2013

Around 40% of these students apply to Engineering / Science related subjects. A total of 120 students studying Chemistry IB or A level and twelve Science teachers attended the event.

This was a very successful event and similar visits to the School are welcomed in the future.



The Chemistry Cricket team are looking for players for the forthcoming season.

We play midweek and occasional weekend games throughout the 3rd term and summer against other University departments and outside clubs, including the famous students versus staff derby in July. Our games are always played in a friendly manner and our team is made up of PhD students, staff and undergraduates of all abilities (from complete beginners to seasoned veterans).

If you are interested in getting involved or would like more information email UWMCCC@outlook.com or visit go.warwick.ac.uk/chemintra/social/cricket



SET for BRITAIN 2014 Exhibition

Jennifer Webb

Jennifer Webb and Sophie Kinnear were shortlisted from hundreds of applicants to present their research at the House of Commons on 17th March as part of the SET for BRITAIN 2014 exhibition.



Jennifer Webb Sophie Kinnear

SET for BRITAIN is a national poster competition run by the Parliamentary and Scientific Committee together with the Royal Society of Chemistry, the Institute of Physics, the Royal Academy of Engineering and the Society of Biology with the aim to encourage, support and promote early-stage and early-career research scientists.

Jennifer (from the Notman and Diamond Research Groups) and Sophie (from the Warwick Electrochemistry and Interfaces Group) each presented to a panel of academics and Members of Parliament in the Physical Sciences (Chemistry) session of the exhibition, which was followed by a reception and prize-giving in the House of Commons Terrace Marquee.

In the news.....

Gibson and Sadler Groups

Both the Gibson and Sadler Groups made big splashes recently with their research in the national news, appearing on the BBC in the last few weeks.

Work recently published in Nature Communications (2014, 5, 3244) by the Gibson Group, in collaboration with Warwick Medical School, highlighted the use of synthetic polymers as mimics of naturally occurring antifreeze glycoproteins (AFGPs) to enable the cryopreservation of blood. Current methods of freezing blood require addition of large volumes or organic solvents, which are not particularly nice (DMSO, glycerol), but the Gibson Group's method avoids this all together.



BBC Film Crew with Matt Gibson

The Gibson Group are currently applying this method to a wide range of clinically-relevant cells used in transfusions/regenerative medicine.

The work was covered by a feature on BBC Midlands today (TV), BBC radio Coventry, BBC Focus Magazine, and Daily Mirror and Daily Express. It will also feature in a forthcoming issue of 'Popular Science' magazine in the USA.

The Sadler Group have created a cancer drug (ZL105) that kills tumours in an entirely new way. They hope it could one day help patients who have developed an immunity to a common chemotherapy drug called Cisplatin.

In very simple terms ZL105 works by causing the power centre of the cell to overload, destroying the cells. In the lab it has killed a variety of different cancer cells including cells from cancers resistant to Cisplatin.

It's also hoped that ZL105 will be more potent than existing drugs which means patients could need lower doses. And that means patients would in theory suffer fewer side effects.

For more details about the research visit www.bbc.co.uk/news/uk-england-26835011 or <http://www2.warwick.ac.uk/fac/sci/chemistry/research/sadler>





Gemma-Louise Davies

Born: Sharjah, one of the emirates of the UAE.

Education: Gemma-Louise carried out her Undergraduate degree in Trinity College Dublin (TCD) in Ireland, remaining there to work towards her PhD in the School of Chemistry and CRANN Institute under the supervision of Prof Yurii Gun'ko. She completed her PhD investigating functional nanomaterials in 2011.

Career: After a brief Industry-supported Postdoctoral position in TCD, Gemma-Louise moved to the picturesque University of Oxford to work as a Postdoctoral research assistant for 2 years in the group of Dr Jason Davis, working closely with Profs Paul Beer and Stephen Faulkner on bifunctional ¹H and ¹⁹F MRI contrast agents. She joined Warwick in October 2013 as an IAS Global Research Fellow, hosted in the Department of Chemistry.

Interests: Gemma-Louise is a qualified PADI scuba diver. Although she prefers to dive in warmer climes, she specialises in wreck diving, and has seen many weird and wonderful creatures, as well as having her own 'Open Sea' adventure, albeit with a much happier outcome. She is a singer and also enjoys sitting down with a good book.

Did you know: Despite the apparent Irish lilt in her accent, Gemma-Louise is British, with her Celtic tones coming from a lifetime of living and being educated in the Emerald Isles. When in Ireland however, locals cannot detect this Irish accent at all!

Research: Gemma-Louise's research focusses on the development of new multipurpose medical diagnostic and therapeutic devices: the emerging field of 'theranostics'. Research strands include the design and engineering of nanostructured materials as stimuli responsive agents for all-in-one disease detection and treatment; the development of new families of high signal biocompatible MRI contrast agents; nanocomposite materials for controlled drug release technology; and investigations of the interaction of these materials with human cell lines.

As an IAS Global Research Fellow, Gemma-Louise's research is strongly interdisciplinary, lying at the interface between chemistry, materials science and medicine; she works closely with chemists, engineers and life scientists to ensure that her work is clinically relevant and remains focused on addressing important healthcare issues.



Graham Pattison

Born: Stockton-on-Tees, in the North-East of England.

Education: Graham carried out his undergraduate MChem degree at Durham, graduating in 2005 with the BP Chemicals Prize for the highest mark in his year. He then stayed in Durham for a PhD in the area of fluorinated heterocyclic chemistry, under the supervision of Prof. Graham Sandford.

Career: 8 years in a city as tiny as Durham was quite enough, so Graham moved to Edinburgh in 2009 to post-doc for Prof. Hon Wai Lam. Here he learnt about transition metal catalysis and how it is useful for the development of efficient, enantioselective chemical reactions. After 3 years in Edinburgh, Graham joined Warwick in late 2012 as an IAS Global Research Fellow. He has spent an exciting 18 months setting up his laboratory and working on independent research ideas.

Interests: Reading (particularly crime/thriller type novels), cooking (often experimenting badly in the kitchen) and computer games.

Did you know: Graham is a huge Formula One fan, which he has been following for the last 20 years (now feeling very old...). His favourite team is Ferrari and his favourite drivers are Fernando Alonso and Jenson Button.

Research: Graham is interested in developing new reactions for synthetic chemistry that allow us to make organic molecules more quickly, selectively and efficiently, often using transition metal catalysts to achieve this. He is particularly interested in the discovery of new methodology for fluorination, which is a challenging area of great importance due to the fact that around 30% of all commercial pharmaceuticals contain a fluorine atom.



Robert Richardson Conor Black Catherine Pawley Peter Sadler Barrie Wright Emmanuella Ajilore

Year-1 Periodic Table Challenge 2013

The winner:
Barrie Wright (103 elements in 2 min 32 secs)

Runners-up:
Catherine Pawley (103 elements in 3 min 14 secs)
Robert Richardson
Conor Black
Emmanuella Ajilore



Best Element T-shirt winners

1A Rebecca Wrelton (Eu)
1B Emily Bugg (C)
2A Ka Ching Chan (Ba)
2B Abdul-Jabbar Ladan (Au)



The Warwick and Monash Hook-up 21 October 2013

Barrie Wright (Warwick) vs
Lorenzo Pereira (Monash)

The winner: Barrie Wright
(103 elements in 2 min 12 secs)



Safety Advice

Rob Jenkins and Andrew Marsh

Material Safety Data Sheets (MSDS) are often the first place that a worker will refer to when making a safety assessment.

However, these data sheets may miss out important information or use non-standard formats. The United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is now replacing MSDS with Safety Data Sheets (SDS) which have a standardised format and include internationally recognizable safety symbols.

The NIOSH Pocket Guide to Chemical Hazards (NPG) may be of use for key information presented in a tabulated form: www.cdc.gov/niosh/npg/pgintrod.html

A slightly different approach is provided by Dow Chemicals with their Product Safety Assessment Finder: www.dow.com/productsafety/assess/finder.htm which gives a general background relating to the manufacture, use and safety information of the chemical or category of chemicals which they produce.



2013/14 Committees and Meeting Dates

Updated committee membership and meeting dates for 2013/14 are available on ChemIntra (for staff view only). For further details visit: <http://www2.warwick.ac.uk/fac/sci/chemistry/chemintra/governance/>

Forthcoming Events

The Polymer Chemistry Insight Day, on Thursday 22nd May, will be a one off opportunity to hear talks from international experts in the field of Polymer Chemistry. Hosted by the University of Warwick you will be given an insight into the latest developments in the sector encompassing all aspects of healthcare to Solar Cells. For more details visit: www.thepolymerclub.info/?q=content/polymer-chemistry-insight-day-healthcare-solar-cells

The Chemistry Postgraduate Research Symposium 2014 will be held on Wednesday 28th May, everyone is welcome to attend as PhD students give talks and display their posters. Lecture venues will be MS.02, MS.03, MS.05 For more details visit: www2.warwick.ac.uk/fac/sci/chemistry/chemintra/postgrad/phdinfo/postgraduatesymposium

The Chemistry and Biology of Natural Products Symposium VIII will be held on Thursday 5th June and will be a one day symposium for postgraduate students and PDRAs working in any areas of natural product chemistry and biology. For further information visit: www2.warwick.ac.uk/fac/sci/wcibb/meetings/chemistryandbiology Symposium

All upcoming Chemistry events can be viewed at: <http://www2.warwick.ac.uk/fac/sci/chemistry/news/events/>