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Analytical Matters - Issue 4

The e-newsletter of the Analytical Division of the Royal Society of Chemistry. February 2017

Welcome to the fourth issue of *Analytical Matters* which aims to showcase the wide range of analytical science activities being run across the Royal Society of Chemistry Analytical Division by the various analytical member groups as well as linking with parts of the UK analytical community beyond our membership. Please send your feedback and any content for the next issue by the end of April by emailing the Editor, Prof David Perrett [here](#).

With my very best wishes,

Melissa Hanna-Brown FRSC
President



Analytical Division Council News

Changes in Council

The first meeting of the new Analytical Division (AD) Council took place on October 19th. Prof Melissa Hanna-Brown continues as President (whilst also serving on RSC Council) and Prof Duncan Graham has become President-elect, until he takes over as President in July. AD Council also met on the 8th February and will meet again on the 10th May. For details of the full Council plus short biographies of the members and their interests please see the [website](#).

Back in the summer AD council meeting, the ACTF Treasurer Dr Mark Powell stood down after many years of service to both committees. In grateful thanks Mark was presented with a card and a gift. Mark will once again be able to devote more time to his consultancy that focusses on analytical method development for pharma.





Mark Powell being thanked by the President

Council elections

If you would like to stand for election to AD Council nominations can be made now. Details of elected vacancies and how to make a nomination are on the RSC website [here](#). Deadline for nominations is **6th March**.

UK Centre for Analytical Measurement Science (UKCAMS)

The President, Professor Hanna-Brown, has been working exceptionally hard on developing a concept for an industry-led centre of excellence for UK analytical measurement science (AMS) based in part on a model already in operation in the Netherlands. Good progress has been made with contacting industry, from SMEs to multinationals as well as research councils, with very encouraging feedback and strong, in principle, support. She has discussed the concept and its development on a number of occasions with AD council, who offered full support. More information on this exciting project will follow during 2017.

Analytical Methods Committee

The President, Professor Hanna-Brown and RSC Programme Manager Michael Smith attended the AMC (Analytical Methods Committee) meeting in November to input into initial discussions regarding AMC strategy. They discussed joint goals and strategy areas between AD Council and the AMC. More information will follow on the AMC strategy refresh in the next newsletter.

Analytical Research Forum 2016

The scientific highpoint of the Analytical Division's year is the Analytical Research Forum (ARF), now normally held at Burlington House in July. The [2016 ARF](#) saw a gathering of both established and new researchers presenting their work in a programme assembled by a small team of AD Council Members. The meeting opened with Dr Simone Francese from Sheffield Hallam who spoke on the use of MALDI-MS to identify fingerprints in criminal cases, then Dr Dara Fitzpatrick from UC Cork spoke about a new technology which records the sound changes when, for example, drug tablets are dissolving - thereby identifying the chemical composition of the tablets. Both Prof Wright from the OU speaking on the Rosetta space mission and Prof Monks from Leicester on breath analysis for medical diagnosis were unable to attend at short notice, but AD Council member, Dr Tony Bristow, ably stood in at the last minute with a closely related talk about Rosetta which he happened to have with him on his laptop!!

Selected submitted oral presentations were followed by flash presentations from poster presenters chaired by AD Honorary Treasurer Prof John Dean. As one might guess MS featured strongly in the poster sessions. The formal session concluded with an entertaining

and enlightening talk by Professor Sophie Scott, a neuroscientist from UCL, on the science of laughter. ARF16 ended with a buffet supper and drinks reception.

This year's ARF planning is well underway with recent announcements [here](#), and some invited speakers already confirmed. The event will take place on **Friday 7th July 2017**. So start getting your abstracts together – the oral abstract deadline is 1st May. Remember the ACTF can provide bursaries for early career scientists to cover the full costs of presenting at the ARF – for further details please see the [website](#).

Schools Analyst Competition 2016

This AD-led competition for sixth form level students is funded by the ACTF via the AD regions. The overall co-ordinator is Prof John Dean, University of Northumbria, who also arranges the grand final (please see website [here](#)).

The 2016 final of the National Schools' Analyst Competition (SAC) was held on the 20/21 June at Keele University. Attendees were welcomed by the Deputy Vice Chancellor & Provost Prof Mark Ormerod. For this year's final, Dave McGarvey and Chloe Howe devised a competition around the theme of food analysis. The teams had to carry out three experiments: determination of the concentration of two artificial food colourings in a soft drink using UV-visible spectroscopy; determination of caffeine concentration by solid phase extraction - high performance liquid chromatography; and estimation of the sugar content of the soft drink by density measurements. The winning team of year 12 students came from Hymers College (representing the North East Region of AD, NERAD), runners-up were the team from the Royal Grammar School, Newcastle (representing NERAD) and third place was Truro College (representing the Western Region of AD).



(L-R) The winning team with organizers and teachers: Dr Dave McGarvey (Keele), Gordon Prescott, Rhea Harrison, Beinn Khulusi and Laszlo Karsai, Prof John R. Dean (RSC AD) and Rachel Bennett.

The Editor adds that on a personal note having attended the final it is worth once again congratulating the students from Hymers College in Hull (North East Region of AD) on winning a hard fought final. Thanks once again to the team in Keele Chemistry Department for putting together not just an excellent academic two days, but also an excellent social programme for students and staff.

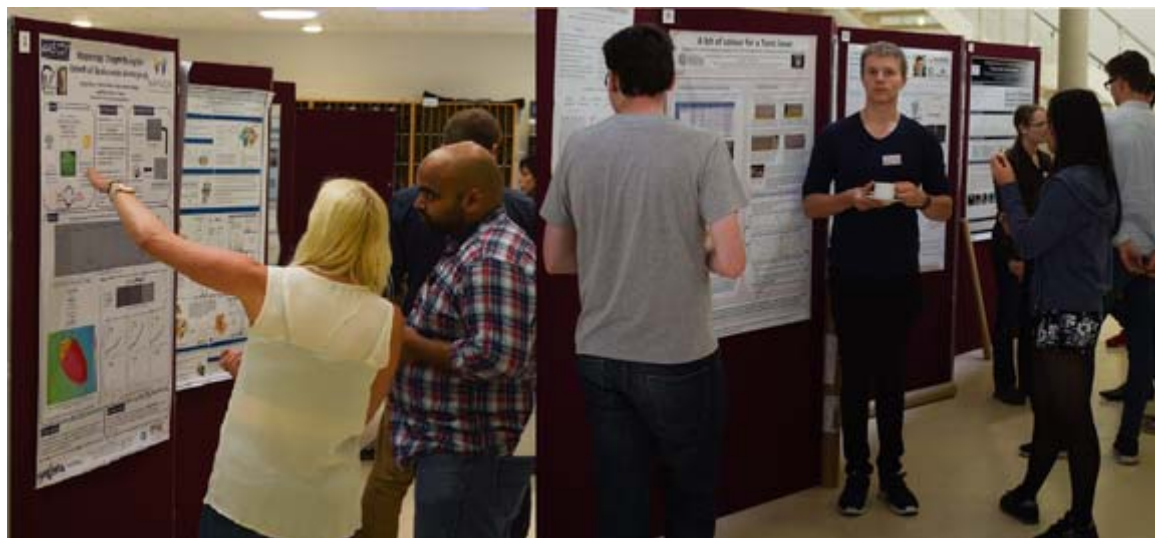
Those wishing to enter teams for next year's regional heats or even the following year should visit the SAC site on the [RSC website](#) and then contact either their local AD region or Prof Dean. The 2017 final will be held at the University of Sussex on 21-22 June hosted by the South East Region of AD (SERAD) and organised by Dr Shane Lo Fan Hin, Teaching Fellow in Chemistry at the University.

Analytical Science Network News

Launch of the Analytical Science Network website


The Analytical Science Network has launched a [new website](#), supported by the Analytical Chemistry Trust Fund. Follow the link to join our mailing list and receive event updates, as well as browse our past events for emerging analytical professionals.

Bright Spark Symposium



Building on the successful ASN's annual Emerging Analytical Professionals (EAP) conference, a Bright Spark Symposium (BSS) was held at the University of Warwick on September 12th. The BSS was a one day conference that provided opportunities for early career analytical scientists to present their work in a low pressure, friendly environment. 35 delegates attended from all over the UK, from both industry and academia, with talks and posters on a wide range of analytical topics, including NMR, electrochemistry and Raman spectroscopy. Congratulations to Samuel Cobb from the University of Warwick, winner of the best oral prize for his presentation on "Boron doped diamond electrodes for electroanalytical applications" and Dominic Macias from Bath University for his poster on "Isolation and characterisation of chromophoric compounds from tree bark". Due to this event's success, it will be repeated in September 2017 (see [website](#) for further details).





Dominic Macias, winner of the best poster prize, being presented with his award by conference chair Zoe Ayres, and Sam Cobb winner of the best oral presentation prize (right).

Emerging Analytical Professionals (EAP) Conference

'The Theory of Everything', 12-14 May 2017
Kettering Park Hotel & Spa, Kettering

Building on the success of previous years, the aim of the EAP weekend is to provide networking and Continuing Professional Development (CPD) opportunities for early career analysts across all disciplines, open to both industry and academia. Each year we include general interest talks as well as specialist lectures, CPD and back-to-basics sessions. Our 2017 theme, "The theory of everything", will facilitate sharing of analytical knowledge and experience between a diverse group of analytical scientists. Topics will include (but are not limited to) Analytical Chemistry, Environmental, Forensic and Clinical Science. Please see [website](#) for further details. All analytical science presentations will be considered, but we would particularly welcome presentations related to our theme 'The Theory of Everything'. **Poster abstract deadline - March 31st 2017.** For further information/abstract submission please contact the conference Chair, [Laura West](#).

RSC Twitter Poster Competition (#RSCPoster), Monday March 20th – Tuesday March 21st 2017

Can you explain your science in 140 characters or less? For the past two years we have held the RSC Twitter poster conference. These poster conferences, the first of their kind, invited participants to submit posters on analytical chemistry and provided excellent engagement with a full range of audience members resulting in 2,670 tweets, 435 contributors, 815,866 audience members, 2.9M impressions and over 80 posters over 24 hours for the 2016 conference! This event has previously been supported by a committee of influential and active researchers.

This year we are expanding the conference to include all of the chemical sciences, including analytical, environmental, materials, organic, inorganic and physical chemistry, nanoscience and chemical biology. Please see the [official blog post](#) for further details.

South West Region of AD

On 28th September, the South East Region of the Analytical Division (SERAD) held a Bioanalytical Troubleshooting workshop jointly with the Chromatographic Society. This one day training workshop was a spin off event from the International Reid Bioanalytical Forum held every two years for the past 40 years at the University of Surrey. The workshop was aimed at early career scientists measuring drugs, metabolites and biomarkers in biological samples. The format of the workshop was for five participants to present a case history describing an analytical challenge. Small groups plus a mentor then discussed how to investigate the methodological problem and presented their thoughts to the wider audience. There was also a short talk on divergent/convergent thinking and a case history from GSK. The workshop was held at Burlington House and was attended by over 30 participants mainly from industry.

Northern Ireland Region of AD

Dr Katrina Campbell (Institute for Global Food Security, Queen's University, Belfast), in a *tour de force* lecture, covered both the policy implications behind food security and the chemistry of detection of threats to the food chain. The lecture took place on 26th October at Queen's University Belfast, School of Chemistry and Chemical Engineering. In her talk entitled

'Biosensors to nanoarrays for monitoring chemical contaminants and natural toxins' Dr Campbell detailed the chemistry of protein conjugation of target molecules and miniaturisation of immunoassays and biosensor technology applied to nanosensing. These applications offer not only enhanced sensitivity, but portability and multiplexing capabilities. Together with global signature case studies by Dr Campbell and her research group her talk provided fascinating insights into current progress in the development and validation of nanoarrays. Such approaches can detect both single and multiple contaminant types in food samples offering an holistic approach to agri-food safety. A lively Q&A session followed from a large audience. Dr Chris Laird, Chair of the NI Region of AD, thanked Dr Campbell for her well thought out and highly stimulating lecture.

North West Region of AD (NW-AD)

NW-AD held a very successful *Early Career Mixer Meeting* on 11th October 2016 at which around 25 young analytical scientists working in industry and universities in the region met to exchange information and tips on recruitment and career development. Most of the meeting involved participants working in small syndicate groups during which they undertook various activities such as identifying their key strengths and developing an "elevator pitch" to sell themselves or their ideas to a potential employer or sponsor.



This lively and enjoyable meeting provided an ideal opportunity for those present to develop networks with fellow analysts in the region and share opinions on the value of professional networking services such as LinkedIn. NW-AD is most grateful to Eurofins and Malvern for their kind sponsorship of the meeting and to Manchester Metropolitan University for hosting the event.

For more detailed information on NW-AD please visit our [website](#).



Analytical Chemistry Trust Fund News

**ANALYTICAL
CHEMISTRY**
TRUST FUND

ACTF, an independent charity (Reg. No. 268893) was established in 1974. It is closely associated with the Analytical Division of the Royal Society of Chemistry. Its primary task is to support analytical science in the UK and abroad. It uses the returns from its capital investments to spend a significant sum supporting PhD programmes, summer studentships, research fellowships and support for analytical conferences as well as educational initiatives. For further details please see the Analytical Chemistry Trust Fund [webpage](#).

The Chair of the Trustees Professor Hanna-Brown updated the other Trustees on her progress with the UK Centre for Analytical Measurement Science (UKCAMS) concept (see note under AD Council in this newsletter). Although much remained to be done on many fronts, her thinking was beginning to converge on an ACTF contribution being required for at least 5 years to ensure the scheme is firmly established and able to deliver. The Trustees agreed that when more developed the ACTF would be in a position to offer substantial support. Professor Hanna-Brown will be bringing back a more shaped proposal for funding at the next meeting following engagement with potential core academic partners in the consortia.



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