

Meeting Reports

Biomedical Research Conference

9 April 2014, Anglia Ruskin University, Cambridge, UK

Richard P.O. Jones and Nicky Milner (Anglia Ruskin University, UK)

This meeting brought together staff from the Department of Life Sciences at Anglia Ruskin University and the 150 final-year BSc (Hons) Biomedical Science students taking the 'Current Advances in Biomedical Science' module led by Richard Jones. The module aimed to promote students' career prospects and interest in exciting research through employability, studentship and biomedical research conference days at Anglia Ruskin University (ARU) in semester 2, 2014. The venue for all three conference days was the Mumford Theatre at ARU's Cambridge Campus. The Mumford Theatre has excellent acoustics and normally hosts theatre companies. Knowledge accumulated during these days was assessed at the end of the module using a 1 hour written examination.

In the Biomedical Research Conference, speakers explained cutting-edge research techniques, their results and what they mean for biomedical science. The key note research lecture by Dr Mike Harrison (University of Leeds, UK) outlined how the rotary ATPases function as nanoscale motors that drive biology. His lecture illustrated the physiological roles of the rotary ATPases, their structure and organization, how they work, regulation and control, and inhibitor binding and therapeutic potential. Dr Dominika Gruszka (University of Cambridge, UK) gave a lecture on studies of protein folding, misfolding and aggregation performed with Professor Jane Clarke (Department of Chemistry, University of Cambridge) and Professor Jennifer Potts (Department of Biology, University of York, UK). Dominika outlined the following: the basis of the protein folding problem; factors that can lead to protein denaturation; examples of experimental techniques used to study protein folding; the process of protein misfolding and aggregation including causes and examples of amyloidosis; and the formation of biofilms on implanted medical devices. Dr Phil Warburton (ARU) explained high-throughput sequencing methodologies, and how advances in DNA sequencing could lead to hospital-based whole-genome sequencing at birth and personalized medicine within healthcare. Dr Benjamin Evans (ARU) discussed how modern molecular and computational tools are enabling us to prepare for, and react to, outbreaks of infectious diseases.



Abboss Shirvani, Craig Thompson and Raul Silva (from left to right) stand by their poster. Photographs taken by Jamie Pope and Chiyedza Heri (final year biochemical students at ARU).



Richard Jones speaking at the Biomedical Research Conference.

The variety and high quality of questions posed by students to the speakers was a pleasing feature of the conference. Students presented group coursework posters that reflected their own developing and wide-ranging biomedical science interests. The posters were assessed by staff on the day. The first prize was awarded to the poster entitled 'Is culture of prevascularized tissue constructs in Matrigel superior to Dulbecco's modified Eagle's medium for promoting inoculation?' created by Akshay Joshi, Sagar Patel and Harry Tracey. The second prize was awarded to the poster 'Could inhibition of survivin have potential in the future of cancer therapy?' by Aaron Hardy and Simon Loydall. The third prize was awarded jointly to the poster 'Potential utilization of the immune synapse and 5-HT signalling pathways in leukocytes in auto-immune disease' by Jason Iles and Mohammad Barayan, and to the poster 'Quantum dots: the next generation fluorescent probes' by Arslan Atajanov, Irina Buckle and Ivo Campos Da Silva.

Comments from students about the conference included "I found everything interesting and intellectually stimulating today, and I personally feel that I have learnt a lot" from Prajawal Limbu and "All of the lectures today were very interesting, and I enjoyed the whole day" from Jamie Pope.

The Biomedical Research Conference was supported by a Biochemical Society Sponsored Events Grant (SEG) of £400 awarded to Richard Jones. The SEG was match-funded with £1500 authorized by Professor Michael Cole, Head of the Department of Life Sciences at Anglia Ruskin University. The combined sponsorship money was used to support student poster prizes, packed lunches, light refreshments during session breaks, and to reimburse travel costs for the external visiting speakers. ■

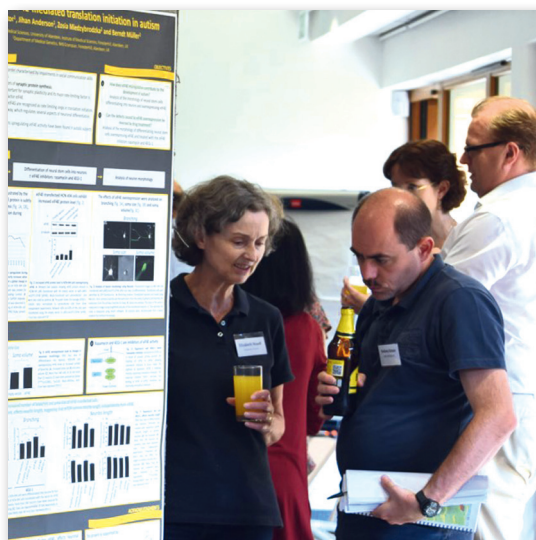
Translation-UK 2014

21–22 July 2014, University of Leicester, UK

Terry Herbert (University of Leicester, UK)

This year the MRC Toxicology Unit together with the University of Leicester had the great pleasure of hosting 'Translation-UK', the must-go-to annual conference for anyone and everyone interested in post-transcriptional regulation of gene expression; an event which has been going since 1994 and which is characterized by its friendly collegiate atmosphere and, of course, its excellent science. As in previous years we, the organizers (Professor Martin Bushell and Professor Anne Willis, and Dr Ania Wilczynska and Dr Tuija Poyry from the MRC Toxicology Unit and Dr Terence Herbert from Leicester University), ensured that there were plenty of opportunities for junior investigators to present their work, either as a short talk or as a poster, but also made sure that some more established members of our community were invited to present keynote speeches.

The venue for this meeting was the beautiful Stamford Court, which is set in leafy grounds off Manor Road in Oadby, Leicester: the site of the University's halls of residence. Thankfully, delegates were greeted with sunshine and beautiful blue skies, as well as the must-have Biochemical Society pen. The conference kicked off after lunch with an enlightening and thought-provoking keynote speech by Professor Matthias W. Hentze from the European Molecular Biology Laboratory, Heidelberg, Germany, who spoke about the diverse functions of RNA-binding proteins, including their emerging role in the regulation of metabolism. After some excellent short talks it was time for a cup of tea, a chocolate biscuit (if you were quick enough to nab one) and a natter with colleagues. We were now all ready for the next session on the role of protein synthesis in cancer opened by our second keynote speaker Professor Chris Proud, a stalwart of the translation UK conference, who always gives entertaining talks. This was no exception. Chris spoke about one of his long-term interests; eukaryotic elongation factor-2 kinase (eEF2K), a kinase which protects cancer cells against nutrient starvation. Chris mainly focused on some exciting new data providing evidence for a role of eEF2K in learning and memory through its ability to regulate the translation of a specific subset of proteins in cortical neurons. In the evening, there were two lively poster sessions followed by, I think rather bravely given England's inclement weather, a barbecue. This provided everyone with ample opportunity to mingle, socialize, talk science and generally 'chew the cud' (not literally, although a vegetarian option was available).



Day 2 started with sessions on more 'novel' mechanisms of translation which finished with a talk from Robin Fahraeus who controversially proposed that the synthesis of peptides for MHC class I presentation originated from a nuclear translation. In the afternoon, there was the eagerly awaited session on ribosomal profiling, an exciting new technique which allows researchers to globally monitor translation *in vivo*. Speaker after speaker provided good evidence for a much expanded 'translatome', demonstrating that proteins/peptides can be synthesized from upstream open reading frames, small open reading frames (less than 100 amino acids), internal open reading frames, long 'non-coding' RNAs and from the initiation of translation from non-AUG start codons (Julie Aspden, Pavel Baranov, Caia Duncan, Klaske Thiadens and Betty Chung). This session was concluded by a talk from our last Keynote speaker, Professor Nick Ingolia from the University of California, Berkeley, USA, a pioneer of this methodology, who presented an overview of his truly seminal work in this field and some important new unpublished data validating the technique. Lunch was followed by a series of short talks on the regulation of translation, notably in stress conditions before prizes were awarded for the best short talk, presented to Caia Duncan for her talk on ribosome profiling in yeast, and for the best posters, presented by Caroline Vindry, Jessica Ayache and Valentina Iadevaia.

As we packed up to go home we reflected on what a great success the conference had been. ■

Papers by the speakers at this meeting are scheduled to be published in *Biochemical Society Transactions* in April 2015.