

## Forthcoming online events



### Key aspects of modern drug discovery 2021

12–13 October 2021

Designed and delivered by experts from industry and academia, this training event will provide a comprehensive overview of the pre-clinical drug discovery process. The workshop will focus on small molecule target identification and validation, hit-to-lead and lead optimisation, as well as on pre-clinical drug development and toxicology. The online programme will include lectures, case studies and small group discussions, and will provide an opportunity for delegates to engage with speakers.



### scRNA-seq: challenges and opportunities

28 October 2021

Single cell RNA-sequencing (scRNA-seq) has been gaining popularity and it has been applied to characterising cell types and understanding disease and developmental processes. At this webinar, the speakers will introduce the most popular microfluidics approach, 10x, and outline the main steps of standard scRNA-seq analysis. They will also give examples of applying scRNA-seq to biological problems and discuss the opportunities of initiatives like the Human Cell Atlas. Finally, they will outline some open problems in the field. They will discuss the limitations of current methods for detection of cell-cell interaction and present some recent advances of studying interaction through sequencing physically interacting cells and development of computational approaches.



### Biochemistry: one molecule at a time

10 November 2021

The webinar is part of our dedicated Early Career Researcher (ECR) series and it's linked to a special issue with the same title published on Essays in Biochemistry. During this session we will hear from three authors from the issue who will share their work with the biosciences community. Biological processes are orchestrated by complex networks of molecules. Conventional approaches for studying the action of biomolecules operate on a population level, averaging out any inhomogeneities within the ensemble. Investigating one biological macromolecule at a time allows researchers to directly probe individual behaviours, and thus characterise the intrinsic molecular heterogeneity of the system. Single-molecule methods have unravelled unexpected modes of action for many seemingly well-characterised biomolecules and often proved instrumental in understanding the intricate mechanistic basis of biological processes. In this webinar, the speakers will provide a sampling of current experimentation using single-molecule techniques and the application of these methods to a range of biochemical problems.

Scientific Meeting Public Event

Medal Lecture Training Events and Courses

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**For more information:**  
[www.biochemistry.org/Events](http://www.biochemistry.org/Events)

## Meeting reports

### Autophagy UK Network Annual Meeting: Bristol 2021

26–27 May 2021, online meeting

As a community, Autophagy UK uses the annual network meeting to champion students and post-doctoral researchers, providing a platform for them to present their work and interact with the leading scientists in the field. Due to the COVID pandemic, this year's meeting was held online but that did not stop us continuing this tradition, with 95% of selected speakers being early career researchers.

The meeting was spread over 2 days with five sessions of short talks, focused on molecular mechanisms of autophagy and selective autophagy, as well as development/disease and infection/immunity, all areas that continue to be a strength of UK autophagy research. The best short talk prize went to Dorotea Fracchiolla, from Sasha Martens lab in Vienna talking about activation of LC3 lipidation by a PI3K-WIP1 feedback loop. Our invited speakers gave fantastic talks highlighting WIP1-related regulation of autophagy, mechanisms of ER-phagy and autophagy and neurodegeneration.

The poster sessions were organized via an online meeting platform which

enabled all participants to actively engage in discussions over numerous posters presented on virtual whiteboards. The format worked (surprisingly!) well and allowed everyone ample flexibility to present their work and allow more informal discussions. Congratulations to our poster prize winners, Stefano Di Tito (Tooze lab, Crick Institute) and Tatiana Rosenstock (Sarkar lab, Birmingham). Stefano presented work on the regulation of Atg9A vesicle trafficking in the regulation of autophagy, while Tatiana and team discussed pharmacological and genetic rescue of autophagy in a model of Wolfram syndrome.

Overall, the conference demonstrated the breadth of autophagy research taking place in the UK and beyond. An advantage of a virtual event was our ability to welcome members of the international autophagy community as well.

**Berni Carroll** (University of Bristol, UK)

**Jon Lane** (University of Bristol, UK)

### The Birmingham Inflammation, Repair and Ageing (BIRA) Conference

1–2 July 2021, online meeting

The aim of this inaugural, virtual meeting was to bring together world-leading experts researching how inflammation is involved in ageing processes and age-related disease and to discuss current approaches to overcoming this negative influence to prevent disease and encourage repair and rejuvenation. The 18 invited international speakers covered topics including the role of cell senescence in ageing, the influence of metabolism on age-related disease, issues in carrying out trials in aged and multimorbid populations and new approaches to studying inflammatory processes. It became clear from several speakers that ageing of the immune system was a major driver of the aged phenotype,

with keynote speaker Professor Maria Mittelbrunn showing data in which deletion of TFAM in immune cells, which increased immunosenescence, was sufficient to induce an aged phenotype. The second keynote speaker, Professor Luke O'Neill, revealed that metabolic shifts that raised itaconate levels were an important anti-inflammatory mechanism. The other hot emerging area was described by Dr Nikhil Jain of ETH Zurich who spoke on the impact of mechanical stress on macrophage inflammatory status, the new area of mechanobiology.

**Janet M. Lord** (University of Birmingham, UK)

## Workshop on ribosome profiling

1–2 July 2021

This Biochemical Society training event, with generous support from BBSRC, attracted 80 participants from across the world to share knowledge about ribosome profiling, the state-of-the-art method to study protein synthesis in live cells. We had a mixture of talks, discussions and hands-on sessions, which worked well for an online workshop spread over two afternoons. Based on feedback from the 2016 workshop we had concurrent sessions specifically designed for beginners and experts, as well as plenary sessions on general topics.

After an introduction to the experimental and computational aspects of ribosome profiling, all speakers shared their ‘top tips’ for ribosome profiling. Three consensus messages emerged: first, the experimental design must follow the biological question; second, pay attention to fundamentals such as read length, 3-nt periodicity, and ribosomal RNA contamination; third, ask for help from experts in the technique.

Hands-on data analysis sessions were presented by the teams behind a web-based tool (ribosseq.org) and command-line processing pipeline (riboviz). Uwe Ohler’s keynote talk on finding translated regions emphasized the importance of statistical methods and interdisciplinary collaboration. We ended with a session on the future of ribosome profiling, including talks on applications to different organisms, TCP-seq to measure translation initiation and selective ribosome profiling for nascent protein folding. Participants shared prospects for simplified experimental preparations and improved and less-biased analysis tools. The workshop had a positive collaborative atmosphere and great feedback from participants.

**Julie Aspden** (University of Leeds, UK)

**Edward Wallace** (University of Edinburgh, UK)

## Translation UK

28–30 June 2021

The annual Translation UK organized by the Biochemical Society took place online from 28 to 30 June. The virtual platform allowed 148 participants to join from around the world.

The meeting began with a plenary talk by Professor Anne Willis, highlighting the role of eIF4B in cell cycle regulation. Session talks were delivered by both students and post docs and provided a flavour of the cutting-edge research taking place within the field of translational control. This included talks showcasing novel technologies currently being developed to further our knowledge of translational control through to highlighting the role of translational control in diseases such as cancer and neurodegeneration.

During the meeting, a special session was dedicated to the celebration of the life of Professor Richard Jackson (1940–2020). Richard was a widely respected leader within the field of translation control and is well known for his major contributions to the field including developing the widely used reticulocyte lysate system for programmed translation, which enabled in vitro investigations of the mechanisms of translation. This session was led by past students and colleagues of Richard who all brought memories of their time working

with Richard and showcased the great scientist and man that he was.

In addition to the scientific sessions, a dedicated careers event was included. This allowed an array of both academic and non-academic careers to be showcased. It also provided an opportunity and platform for current students and post-docs to discuss possible careers options. This session was very well received and will be included again in future Translation UK meetings.

The conference was closed with a presentation by the Nobel prize winner Professor Ada Yonath who gave her perspectives on ribosome structures and the development of future therapeutics.

The best talks were won by Grant Marshall from the Abbott lab and Daisy Vinter from the Ashe lab and the poster prize went to Angela Rubio from the Willis lab. The next conference will take place in Sheffield next year from 29 June to 1 July 2022.

**Susan Campbell** (Sheffield Hallam University, UK)

**Lydia Castelli** (University of Sheffield, UK)

**Guillaume Hautbergue** (University of Sheffield, UK)

**Prachi Stafford** (Sheffield Hallam University, UK)