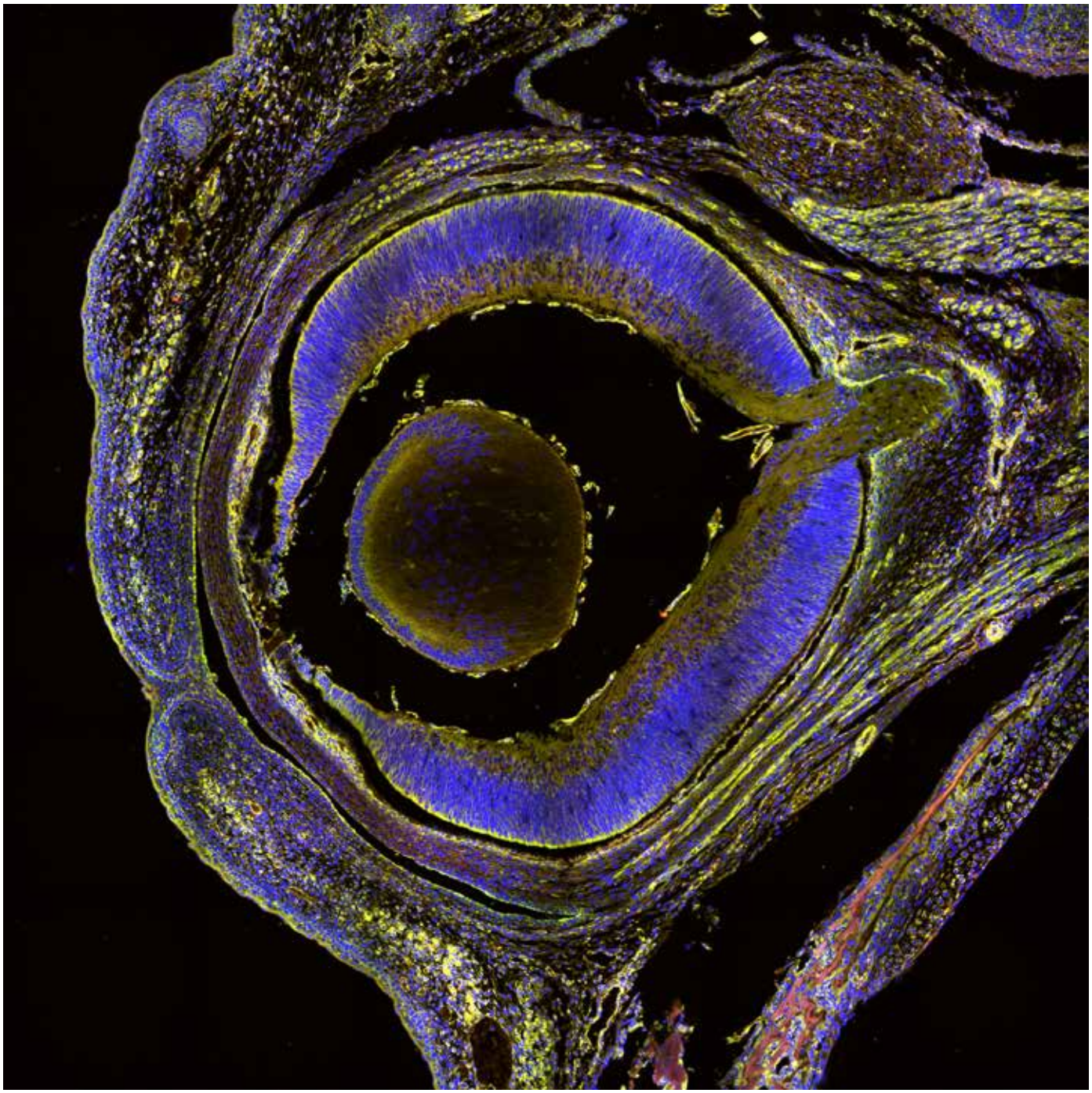
2025

BSCB Magazine

BRITISH SOCIETY FOR CELL BIOLOGY



24 – 27 March
2025
ACC Liverpool
UK

Biologists @ 100 conference

Incorporating the Spring Meetings of the British Society for Cell Biology (BSCB) and the British Society for Developmental Biology (BSDB)

BSCB organisers

Aymen al-Rawi, MRC Laboratory of Molecular Biology, UK
Vicky Cowling, University of Glasgow, UK
Viji Draviam, Queen Mary University of London, UK
Jason King, University of Sheffield, UK
Laura Machesky, University of Cambridge, UK

BSDB organisers

Véronique Azuara, Imperial College London, UK
Anahi Binagui-Casas, University of Edinburgh, UK
Shankar Srinivas, University of Oxford, UK
Abigail Tucker, King's College London, UK

Speakers on cell and developmental biology

Alexander Aulehla
Margarida Cardoso-Moreira
Alain Chédotal
Jennifer DeLuca
Alba Diz-Munoz
Anja Geitmann
Susana Godinho
Matthias Heinemann
Myriam Hemberger
Nick Hopwood
Maneesha Inamdar
Loydie Jerome-Majewska
Ana-Maria Lennon-Duménil
Maria Leptin
Tom MacVicar
Marisa Merino
Michel Milinkovitch
Ewa Paluch
Laura Pellegrini
Olivier Pourquié
Jordan Raff
Crystal Rogers
Nicolas Rivron
Victoria Sanz Moreno
Ritwick Sawarkar
Hari Shroff
Benjamin Steventon
Chris Whitewoods
Alpha Yap

Register now

biologists.com/100-years/conference

BSCB Magazine 2025

Editorial

Welcome to the 2025 BSCB Magazine.

2025 is a year of notable anniversaries for cell biologists. Not the 70th anniversary of fish fingers (it's fair to say this has questionable cell biological value), but anniversaries of organisations that support cell biological research in the UK and Ireland.

We'll perhaps start with the 100-year anniversary of the Company of Biologists. This not-for-profit publishing organisation is dedicated to supporting the biology community. As well as publishing peer-reviewed journals (perhaps the most relevant to BSCB members is the *Journal of Cell Science*), it actively supports biological societies. Its support is the reason the BSCB is able to provide the Honor Fell travel grants, to support students to carry out summer research projects and to organise international conferences that form a central part of the networking and collaboration that cell biology thrives upon. This year we are celebrating this commitment with the @Biologists conference in Liverpool, a coming together of the BSCB and sister scientific societies (see page 3).

The BSCB is also celebrating its own anniversaries. It is 60 years since the BSCB formally started, evolving from the British Tissue Culture Association in a decision ratified at the 1965 AGM in Aberystwyth. 25 years ago, the first Hooke medal was awarded to Prof Anne Ridley and it's 10 years since the first Women in Cell biology (WiCB) award was bestowed on Prof Victoria Cowling. These awards, and the more recent BSCB Postdoctoral Researcher Medal and the Raff Medal for PhD students, recognise significant contributions to cell biology. We would urge you to nominate any scientist you feel has made an important difference to our field. There isn't a lot of back-patting in our career and it is a rare opportunity to acknowledge someone's work.

The 2025 Magazine covers many of the Society's activities over the last year. We have reports from our summer students, meeting reports on some of the BSCB conferences and feature articles that discuss the resources available to cell biologists, the continuing role of online meetings, and community resources for cell biology. We also provide a breakdown of some of the cell biology events to look forward to in the coming year.

We would encourage you to get involved in the BSCB, make suggestions for conferences, and tell us of new initiatives that we can support. With your engagement, the society will continue to thrive and support scientists like you for the next 60 years.

Ciaran Morrison
Tom Nightingale

Front cover: A set of tiled images taken from a frozen section of an eye from the mitoQC mouse (McWilliams et al. J Cell Biol. 2016 Aug1;214(3):333-45) at developmental stage E16.5. Mitochondria are labelled with GFP (green) and mCherry (red). DAPI-stained nuclei are blue. Large red dots are mitochondria in mito-lysosomes demonstrating turnover of damaged or worn-out mitochondria in active tissues- in this case the developing eye. The acidic environment of the lysosomes quenches the GFP fluorescence. This mouse model has revealed the distribution of mitophagy in diverse active tissues such as the heart and retina. In addition, it unveils the tissue architecture as delineated by the distribution of mitochondria. At this stage the eyelids are closed, and the posterior chamber still contains blood vessels to support the developing lens and retina.

Magazine Editors: Ciaran Morrison and Tom Nightingale **Production:** Giles Newton, Deadlift Media **Printer:** Hobbs
BSCB website: www.bscb.org

Society News

BSCB President's Report 2024

It is hard to believe that another year has flown by and this is now my second report as President of the BSCB. I have enjoyed this year with the BSCB and together with the committee, we have reached out to our community through our annual general meeting and through some shorter targeted newsletters sent by our membership secretary, Nathalie Signoret (Hull York Medical School). We hope that you are aware that we value your feedback and we aim to make the BSCB your society, so please feel free to get in touch!

Our annual meeting was in Birmingham on 15–18 April 2024 and was the 90th Harden Conference co-sponsored by the Biochemical Society. The meeting was more focussed than our usual meetings, with an emphasis on cell migration. Harden Conferences have been running since 1969 as unpublished interdisciplinary meetings with open discussions of cutting edge unpublished work. The meeting was a great success, thanks to the excellent organisation by our meeting secretary Susana Godinho, who was helped by incoming meetings secretary Viji Draviam (QMUL) and co-organisers Peter Bieling (Max Planck Institute), Matthias Krause (King's College London) and Karen Liu (King's College London). Keynote talks were from Cynthia Reinhardt-King (Vanderbilt University, USA) and Michael Sixt (IST, Austria). The BSCB medal talks were from Emmanuel Derivery (Hooke Medal, LMB, Cambridge UK), Carlos Pardo-Pastor (Postdoctoral Medal, King's College London), Alexis Barr (Women in Cell Biology Award, Imperial College, London) and Saranne Mitchell (PhD student Raff award, King's College London). Don't forget to nominate talented scientists at all levels for the 2025 competition!

The BSCB Committee has undergone some changes in the past year, with Tobias Zech (University of Liverpool) joining as the incoming Treasurer, Helen Matthews (Sheffield University) joining as the incoming social media and website member, Harriet Smith (PhD representative, Francis Crick Institute, London), Mattea Finelli (incoming magazine editor, Nottingham University), James Brown (incoming Ireland representative and magazine editor, University of Limerick), Ye Dee Tay (Cardiff, incoming educational strategy representative). Our membership numbers remain strong, indicating a strong interest in cell biology in the UK and Ireland. If you are interested in becoming an ambassador for BSCB at your institution, contact our membership secretary to find out how.

BSCB offers you many opportunities to participate in your cell biology community and we are always looking for new ideas and initiatives. If you would like to get involved in science policy, Darius Koester (Warwick University) would love to hear from you. If you are a cell biologist working in Ireland who would like to be more involved in the community, contact Ciaran Morrison, our Irish Area representative, or James Brown, our incoming Irish Area representative. If you have items for the BSCB newsletter or ideas about how the BSCB can better serve the community-get in touch and we will do all we can to make this your BSCB.

Looking ahead to 2025, it will be an exciting year for the BSCB as we join with the Company of Biologists, who sponsor much of what we do (https://www.biologists.com/), to host their Centenary Meeting "Biologists @ 100" in Liverpool on 24-27 March 2025. This will be a huge celebration and joint meeting with the British Society for Developmental Biology and the Society for Experimental Biology. You should definitely consider joining us at this meeting and help celebrate 100 years of the Company of Biologists supporting biologists and inspiring biology https://100yearsconference.biologists.com/

Laura Machesky

Meetings Calendar 2025–26

Biologist@100 conference: Joint BSCB, BSDB, JEB and SEB meeting
24-27 March, ACC Liverpool, UK
https://100yearsconference.biologists.com/

Microtubule meeting UK 2025
12 May 2025 University of Edinburgh
https://biology.ed.ac.uk/microtubule

London Cell Motility Club symposium UK 2025
13 June 2025 Kings College London (to be confirmed)

Scottish Cell Biology Meeting 2025
18 September 2025 University of Dundee

UK trafficking meeting 2025
December 2025 Kings College London (date to be confirmed)

Biologists @ 100

2025 will mark the 100-year anniversary of The Company of Biologists. As part of their celebrations, the Company will be organising **Biologists @ 100**, a unique conference that will bring together their different communities.

The conference will incorporate the Spring Meetings of the British Society for Cell Biology (BSCB) and the British Society for Developmental Biology (BSDB). It will further include a Society for Experimental Biology (SEB) one-day Satellite Meeting 'Experimental biology and impact: solutions to climate change and biodiversity loss', the Journal of Experimental Biology (JEB) Symposium 'Sensory perception in a changing world', and a one-day Disease Models & Mechanisms (DMM) programme 'Interdisciplinary approaches to combatting antimicrobial resistance'.

In the plenary sessions, the keynote speakers will consider topics of importance to the whole biological community: climate change and biodiversity, health and disease and emerging technologies.

Registration and abstract submission are now open.

To view the programme and register your interest, visit https://biologists.com/100-years/conference.

X: @Co_Biologists

Mastodon: https://biologists.social/@Co_Biologists

LinkedIn: https://www.linkedin.com/company/the-company-of-biologists

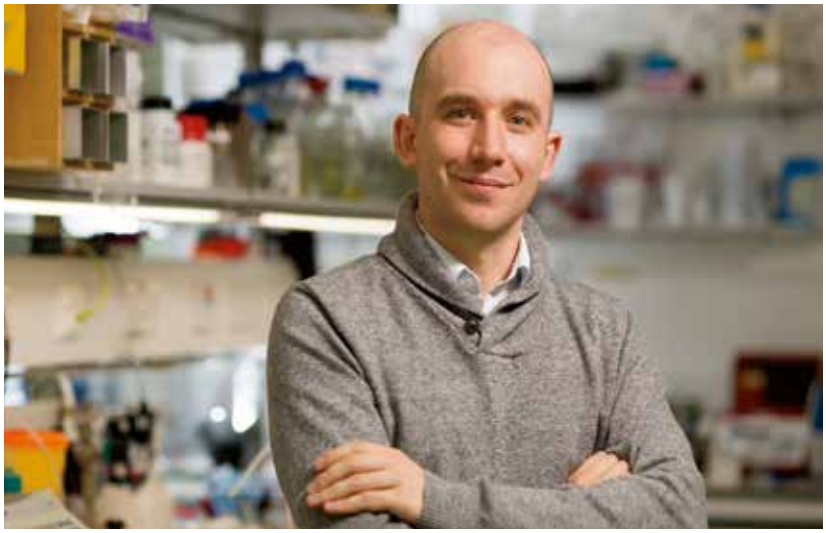
Hooke medal winner 2024: Emmanuel Derivery

Emmanuel did his PhD at Université Paris-Sud and then undertook postdoctoral training in the Department of Biochemistry at the University of Geneva. He has been a Group Leader at the MRC Laboratory of Molecular Biology (LMB) in Cambridge since November 2016.

He was awarded the Hooke medal for his research on asymmetric cell division, in which the cellular contents of mother cells are distributed unequally between two daughter cells, allowing them to adopt different cell fates. His group seeks to better understand the molecular mechanisms by which cell fate determinants segregate asymmetrically during this division. We spoke with Emmanuel about his work and the award.

Please tell us about your research
In developing my research directions, a major interest was how cytoskeletal polarity can be established, as in neuronal or epithelial cells. This is hard to study in an experimentally tractable timeframe- imaging experiments are difficult to perform over a period of weeks, as would be necessary in these cell types. However, cells, and their cytoskeleton, also polarise during asymmetric cell division- but in a period of 20 minutes, which is much more compatible with imaging approaches. Our work was initially in the fly as a model organism, but is now moving toward mammalian cells, with the longer-term plan to explore tissues. The lab's current approaches seek to reconstitute tissue-like polarity in cell culture models, to try and identify the minimum components needed for these processes.

What does the Hooke award mean for you/ your group?
The award is really for the team in the sense that it suggests we are doing science in the right way. It's a tribute to the team's work in addressing problems in new ways, constantly 'reinventing the wheel'. The award means that even if the work is tough, it is of value.



There are some other aspects that strike me about this medal. The first is that it is the Hooke medal, named after the pioneering microscopist- so for a microscopist, this association really means something. The second is that the medal was designed by Brad Amos, a legend of microscopy at the LMB, where I am now. A final, personal point is that I am very pleased, as a French person, to win this award from the British Society of Cell Biology. This really highlights that science is international- my whole lab is international and I think the mix of cultures really helps us do better science.

What advice would you give young scientists starting their own research direction?
Don't grow too fast! At first, I wanted to, but this is not how it's done in my institute, and I think they are right. This has really helped me focus on the science. When you start your lab, you are the best postdoc- by having a small lab at the beginning, you can really teach your people how to focus on the science and on the experiments. Another side of the coin is that you really have to hire the right people for this approach- everyone has to work well together in a small lab. Finding the right team members needs work.

Another point is to find a host institution with good mentoring and support, that will suit you. You need to have a good feeling about the place- somewhere that suits you may not be ideal for the next person.

Interview by Ciaran Morrison

Image credit: MRC Laboratory of Molecular Biology

Cell scientist to watch: Alexis Barr

Alexis Barr is a Cancer Research UK (CRUK) Career Development Fellow at the Institute of Clinical Sciences (ICS), Imperial College London and Medical Research Council (MRC) Investigator at the MRC Laboratory of Medical Sciences (LMS). Alexis graduated in Natural Sciences from the University of Cambridge, UK, and then undertook a PhD at the CRUK Cambridge Institute, where she studied the role of centrosomes in mitotic spindle assembly under the supervision of Fanni Gergely. For her postdoctoral studies, Alexis moved to the Institute of Cancer Research in London, where she joined the team of Chris Bakal and was awarded a Pathway to Independence Fellowship. There, she investigated the mechanisms that control cell cycle entry using quantitative single-cell imaging.

In 2018, Alexis was awarded a CRUK Career Development Fellowship to start her own research group at the ICS, to research the control of cell cycle entry and exit and how these pathways can be manipulated to treat cancer. She was awarded the 2024 Women in Cell Biology Early Career Medal by the British Society for Cell Biology (BSCB). We spoke with Alexis over Zoom to find out more about her career, her advice on collaborative research and her approaches to scientific mentorship.

Congratulations on winning the 2024 BSCB Women in Cell Biology Early Career Award Medal; what does winning this award mean to you?
I was very touched to receive this award because I've always had a really good relationship with the British Society for Cell Biology (BSCB). As a masters student, the first conference I ever attended was the joint BSCB/BSDB spring meeting in Warwick in 2005. It was absolutely fantastic, and it made me realize that working in science would be a worthy and fun career. Since then, I have always admired the BSCB and all the work they do. I was a postdoc representative on the BSCB committee many years ago and got to see from the inside how hard the committee works for the cell biology community. Receiving this medal from the BSCB was really an honour, and the fact that it is voted for by peers is very meaningful for me.

What inspired you to become a scientist?
I always liked science at school, but I never really understood that I could do science for a living. No one I knew was a scientist. The only career involving science that I knew about was forensic science, but I didn't want to do that because I am very squeamish. Even so, I decided to go to university and study Biological Sciences because biology and chemistry were my favourite subjects. During my second year of university, my Director of Studies suggested that I do a summer placement in a lab to gain research experience and see if I liked it. I went to work at the MRC Laboratory of Molecular Biology (LMB) in Cambridge with Andrew Leslie, a fantastic structural biologist. It was then that I realised working in a lab as a research scientist was not only possible but could also be a lot of fun. I think that was the turning point when I knew I wanted to become a scientist.

What initially drew you towards studying cell division and centrosomes for your PhD?
During my master's programme, we had very memorable and inspiring lectures on the cell cycle from Jon Pines and Frank Uhlmann. I thought the cell cycle was fascinating and so I chose to do my master's project in Jordan Raff's lab, who was then at the Gurdon Institute in Cambridge. It was in his lab that I first started working with Fanni Gergely, who was then a postdoc. Fanni was teaching me how to find mitotic cells that we had immunostained for microtubules, centrosomes and DNA under the microscope. I remember the first time that I found one. I thought it was just beautiful, and I wanted to understand how this magnificent spindle structure was assembled, and how cells align and segregate their DNA into two new cells. When Fanni was leaving Jordan's lab to set up her own team, she asked me if I wanted to be a PhD student with her. I jumped at that chance and that's how I got hooked on the cell cycle.

For your postdoctoral research, you moved to Chris Bakal's lab at the Institute of Cancer Research (ICR) in London. What did you work on there?
When I was finishing my PhD, I realised that I wanted to continue working on the cell cycle using imaging to study this process, because being able to see how things work is very powerful in understanding cell systems. However, I wanted to move away from mitosis and cell division and do something a bit different. At that time, there weren't so many people studying how mammalian cells enter the cell cycle; specifically, the process of how a cell goes from quiescence into the process of DNA replication in S phase to start proliferating. I wanted to work in that space using single-cell imaging, which had been such a useful tool during my PhD in studying mitosis. I also wanted to take a more systems-level approach to studying cell cycle control. I had seen Chris give a talk about using approaches like high-content, high-throughput imaging, screens and computational modelling to understand cell shape. I emailed him to ask if he was taking on any postdocs, and luckily, he was. I was very fortunate in that Chris was a very supportive supervisor and gave me the freedom to pursue my own project using the tools available in his lab. It was a fantastic opportunity: with Chris' encouragement, advice and support, I could build up my own research programme, looking at how cells enter the cell cycle using these systems-level approaches.

While you were at the ICR you established a strong collaboration with Bela Novak, a mathematical modeller at the University of Oxford. What is your advice on establishing good collaborations as an early career researcher?
Don't be afraid to email people you'd like to collaborate with, even if they're much more senior than you. I had not met Bela before, but I knew that he had done cell cycle modelling in other organisms and that his approach would be extremely powerful for understanding how human cells enter the cell cycle. I emailed him, explained what I was doing and asked if he would be interested in potentially collaborating. He invited me to give a talk, during which I was really grilled by Bela and his group, but it was a fantastic experience and really useful. It made me realise that this would be a really fun collaboration since modellers think about scientific problems completely differently to the way that I do, and they made me think about this project in a completely new way.

Having collaborated with many people over the course of my career, I think there are a few things to bear in mind: it's really important that your collaborators are also invested and interested in answering the research question. Somebody could have a really useful and cool technique, but if they're not that interested in your research question, it can end up being quite difficult to keep them engaged in the project. Another key point is that, for example in Bela's case, there was somebody from his team who worked directly with me and with who I was in almost daily email contact. It's important to ensure that there is someone on both teams engaged with and committed to the project. I also think it's really important to get along well with the people you're collaborating with, because if you don't find them easy to talk to, it's going to be a real struggle. I'm fortunate that I find it very easy to talk to all of my collaborators. We can challenge each other, knowing that it's coming from a place of good intentions, and it's fun to collaborate with them – it's never a chore. I highly recommend collaborating because having different people with different ways of thinking always brings something new to a project.

In 2018, you started your own lab at the Institute of Clinical Sciences, Imperial College London. What challenges did you face when starting your own lab that you didn't expect?

I started my lab in September 2018 and then obviously, a year and a half later, the COVID-19 pandemic hit. COVID led to many disruptions that we couldn't have anticipated and, as a result, I always find it hard to untangle the difficulties associated with the COVID pandemic with the normal challenges of establishing a group. One of the things I probably hadn't truly appreciated before I started is that when you go from being a postdoc to running a lab, you go from being part of the team to leading the team. You have to shift your mindset because you are taking on a different role – a leadership and management role – and that can be quite isolating. I was very lucky because when I started at Imperial, I had a number of colleagues who started their labs around the same time, so we had an instant peer network. I didn't feel isolated because I had great colleagues who became good friends as well. I think another challenge is that you leave a postdoctoral role where you have become super productive over the years and then move to a new place where you have to build a new lab from scratch which takes time to run efficiently.

How are the challenges that you're facing now different?

Whenever you bring someone new into the team, one of the biggest challenges is that you have to find the best person for the role, but also ensure they will get along with the team. We have really good team morale, with lots of different personalities but where everyone gets along very well and it's vital to maintain that environment. Another challenge I have, now that I'm approaching 6 years of running the lab, is preparing to apply for new funding. I am very conscious that the decisions I make influence not just my career, but also the careers of my team members. Being responsible for other people's careers now as well as my own can be quite a weight of responsibility.

What are the main questions your lab is currently trying to answer?

Our research is centred on understanding how human cells enter and exit the cell cycle. We are interested in how cells transition between quiescence – where cells are resting or dormant – and proliferation. This process is crucial during development and tissue homeostasis, ensuring cells strike the right balance between proliferation and quiescence at the appropriate times. Dysregulation of this balance can lead to cancer. Using a mechanistic cell biology approach, we study the regulation of cyclin–CDK complexes and how they control the transition between quiescence and proliferation. We want to use this knowledge to optimize the use of cell cycle-targeting drugs in cancer treatment by identifying the populations of patients that would be most responsive to drugs being tested in current clinical trials or those that are already used in cancer treatment. We also want to understand the difference between quiescence, a reversible cell cycle arrest, and senescence, which is a permanent cell cycle arrest. These terms are sometimes used interchangeably, as we don't really understand how quiescent cells maintain their potential for proliferation and what prevents them from becoming senescent. Therefore, our goal is to uncover the mechanisms through which quiescent cells retain proliferative potential. Additionally, we want to identify reliable markers that can distinguish quiescent cells from senescent ones. This distinction is very important because quiescent cancer cells can 'reawaken', leading to tumour relapse, while senescent cells cannot re-enter the cell cycle.

Are you still doing experiments yourself?

No, I stopped doing experiments around October last year. Up until that point, I was still spending 40% of my time on experiments. However, I've now reached a point where, although I was initially hesitant to give up bench work because I enjoy it so much, my time is better spent writing manuscripts, applying for grants, attending conferences and discussing our work with others. I currently can't see when or if I will ever return to doing bench work. Sometimes, around Christmas, I will feed cells for lab members while they are away, but that's currently the extent of my lab work!

You volunteer for the Social Mobility Foundation, mentoring pre-university students. Tell us more about this role.

The Social Mobility Foundation mentorship programme is for UK students who are in their first year of Sixth Form, pursuing A-levels (16–18 years old), and aspiring to attend university. These students come from socioeconomically disadvantaged backgrounds. They are on track to achieve good grades in their A-levels and attend university. No one in their family has attended university before, leaving the students unfamiliar with how the university system and application process work. Additionally, depending on their school, they may not receive adequate support.

As a mentor, I help these students navigate the university system, including understanding how to choose a university and a course. I also advise on work experience they can gain before attending university. I help them in writing their personal statements and better framing their motivations for wanting to attend university. I'm still in touch with some of the students that I first mentored, which is always very nice. This type of mentorship is important because, as academics, we have access to a wealth of information that these students lack. Simple guidance can really help them navigate the system. I sympathise with this, because my cousins and I were the first generation of our family to attend university, and we didn't have this sort of information handed down to us. Fortunately, our schools were supportive, but for those without such support, external guidance is essential. I am very proud of the achievements of the students I have mentored.

When mentoring people, I recognize that everyone is different and has unique needs. For example, with the people in my lab, I have long conversations about what they want out of their career and how I can best help them to achieve that.

What is your own approach to mentorship as a group leader?

In terms of my mentorship style, I first and foremost try to lead by example. When mentoring people, I recognize that everyone is different and has unique needs. For example, with the people in my lab, I have long conversations about what they want out of their career and how I can best help them to achieve that. We have these conversations at least a couple of times a year, to see if their ideas have changed. I also receive a high number of requests to mentor people, particularly women postdocs, because I have experience balancing having children during my postdoc years and now as a team leader. I share my experiences, including what did and didn't work well and what I would have done differently. I also encourage people in my lab to talk to people about their projects, even very early on.

In my opinion, this is how science should be – an open discourse where people share results early to advance our collective understanding. Not hiding everything away until the paper is accepted. It's also a huge benefit to people in the lab as they can go to conferences throughout their time in the lab, become known for their work and form collaborations.

Together with Dr Michelle Percharde and Dr Toby Warnecke, you have been instrumental in establishing a Roving Researcher scheme at the MRC-LMS. Can you tell us more about this scheme and why it is so important?

This is a scheme that provides research cover for postdocs going on long-term leave, which is anything more than 3 months. So far, our Roving Researcher scheme has mainly covered maternity leave, but they can also cover long-term sick leave. We wanted to implement this because when a researcher goes on leave, their project often just stops. This can be extremely stressful for a postdoc. We wanted to alleviate that stress so that people can enjoy their maternity leave or, in the case of sick leave, relax and recuperate.

The Babraham Institute started a Roving Researcher scheme a few years ago, and they offered us a lot of help when setting up our system. A Roving Researcher, who is employed through the scheme, works between two or three labs to cover for postdocs on leave. This model is working well because this person understands the institute thoroughly, knows how everything works and can work on multiple projects simultaneously. The researcher on leave can decide whether they want to stay engaged with the research while they're away – whether they want to meet with the Roving Researcher to discuss progress during their leave – or step back and delegate that to someone else in the lab. That decision is entirely up to them. This scheme has been hugely successful, and our Roving Researcher is now a permanent position at the LMS. For the Roving Researchers themselves, it's a really exciting role because they are constantly learning new techniques, undergoing training and meeting new people. More institutions are now starting to implement their own Roving Researcher programmes.

Can you give me suggestions of how to improve the lives of scientists that are parents?

One huge advantage of being a scientist parent, compared to some of my friends who are parents and in other careers, is the flexibility. For example, today is my son's 10th birthday, so I'm going to leave early to pick him up from school and celebrate with him. I'll probably have to do some work later on in the day, but that's fine, it's just a busy grant-writing period right now. However, there are still improvements that can be made. One of the biggest issues is the cost of childcare. I had both of my children while I was a postdoc, and for one year, they were both in full-time nursery. The cost of childcare for that year was more than my salary. Some people said I was crazy to go back to work during that time, but I love my job and wanted to advance my career. We were fortunate enough that we could take that financial hit for a year, but you can see why that cost would stop people from returning to work. We need much, much cheaper childcare. Whether this should come from the government or universities, I'm not sure, but it would be a huge help.

Another issue I advocate for, and discuss often with Michelle Percharde, is encouraging more partners to take formal parental leave. If more women were able to return to work while their partners took time off to care for their children, I think it would help immensely with the gender imbalance in the senior positions in academia. My husband took 6 months off with each of our children. I took the first 6 months and he took the second 6 months. I always encourage others to do this, because it would greatly support women in science.

Finally, could you tell us an interesting fact about yourself that people wouldn't know by looking at your CV?

People might not know from my CV – but they probably know if they follow me on Twitter/X – that I'm a huge football fan. I grew up supporting Barnsley FC and used to have a season ticket. I attended every home match and many away matches until I went to university. I also played football at university and continued to play until recently when I ruptured my anterior cruciate ligament. So yes, I'm a huge football fan!

Alexis Barr's contact details: Institute of Clinical Sciences, Imperial College London; MRC Laboratory of Medical Sciences, Du Cane Road, London, W12 0NN, UK.
E-mail: a.barr@lms.mrc.ac.uk

Alexis Barr was interviewed by Sara Morais da Silva, Reviews Editor for Journal of Cell Science. This piece has been edited and condensed with approval from the interviewee.

BSCB post doctoral award winner: Carlos Pardo Pastor

Why and at what point in your life did you decide to become a scientist?
My mother is a high school teacher and my father is a historian, so research and teaching are familiar to me, and I have lived the perks and privileges of academic life: my parents could arrange their schedules to be with me, they did not have a boss (that always sounded cool), archive visits and meetings provided excuses to live and travel all over the world… a very pleasant life, to be honest. And I wanted that life, but I preferred sciences to humanities for a career. I liked biomedical research, but almost every teacher (even my excellent biology teacher, a microbiologist holding a PhD from Institut Pasteur in Paris!) said I should study medicine to do that. And I did not like medicine. Luckily, one day my mother, over lunch, mentioned an undergrad biology program directed towards biomedical research. Becoming a biomedical scientist without excessively studying (non-human) animals, plants, or human patients was too attractive to pass. The campus being on the beach did not hurt. I was 17 years old.

What were the main goals that you hoped to achieve when you decided to apply for a postdoc after completing your PhD?
A postdoc granted me the chance to live abroad and was a stepping stone towards becoming a PI. What was there not to like? I dreamed of finding a lab in NYC and becoming a Manhattanite. But then I met Jody Rosenblatt at a meeting in Paris, she offered me a job, and that was it.

Towards the end of your postdoc, you discovered a non-canonical signalling pathway for the Epidermal Growth Factor Receptor that involved the PIEZO proteins. This was significant in the field of mechanobiology. What were the key challenges that you had to overcome to achieve that?
First, my aversion to western blots. I had the lysates for months, but I kept postponing the experiment. Finally, a good friend bought me a coffee, sat me down, and after my hundredth excuse, stared at me and said "c'mon, Carlos, just run the bloody gel". In classic lab fashion, it was a game-changer experiment, ruling out tyrosine phosphorylation in our EGFR endocytosis story. It completely changed our perspective of the project. Thanks, Ele!

Second is the pushback we normally get because we use cell line cultures. I understand their limitations and the need to explore the validity of our results in more complex settings, but cell lines are still a fantastic approach to basic cell biology.

The third was the three-volume rejection saga - three journals, all convinced our minor fixable issues were rejection material.

You started working on the PIEZO receptors during your PhD and made the wise decision of continuing to work on that area during your postdoc. What were your thoughts behind that decision?
The same reason that drives me now: there's a fascinating gap in our Piezo knowledge at the cellular level. While we know its structure and systemic roles, basic cell biology questions remain unanswered - its half-life, trafficking, degradation, and interactions with endomembranes. It's a massive, membrane-bending protein, and I'm convinced cells must have fascinating mechanisms to manage that. Of course, after Patapoutian and Julius got the Nobel, people started showing more interest in this membrane monster, and that helps.

You started your postdoc in the United States then you relocated with the Rosenblatt lab to the United Kingdom. What were the main challenges that you had to overcome and what were the advantages of moving countries?
Moving countries was always a perk of academia for me. Given that I knew the lab was relocating to London, I treated my US time as a focused fellowship-writing sabbatical. I have very fond memories of that summer. After moving to London came the boring part of filling paperwork, unboxing, learning new internal procedures, etc. Having a European passport pre-Brexit spared me the visa hurdles and costs my colleagues faced. Moreover, changing countries made me eligible for the long-term fellowship from the Human Frontiers Scientific Programme or the Marie Skłodowska Curie Actions from the European Commission. These competitive fellowships gave me independence and a very good salary. I have been very privileged there too. Then the data started flowing, making the form filling headaches fade away. And having London as your playground after lab hours beats everything.

I noticed that you did a lot of non-research activities during your postdoc, such as teaching and public engagement. In your opinion, how important were such activities for your progress as a scientist?
They're essential. That chaotic chat inside our heads we call thinking needs structure- teaching and outreach force you to pause, find the right words, build the story. Sure, at conferences we can dive deep into (or fight about) what an experiment tells us, but explaining our research to non-scientific audiences makes you go for the bigger picture: why do we do this? Why does it matter? Or indeed, does it matter?

You are a husband and a father beside being a scientist. What advice can you give our fellow postdocs for maintaining a work-life balance?
Accept your (hopefully) temporarily reduced brain function - whether it's forgetting the word 'pipette', searching for the glasses you're wearing, or accidentally culturing an empty plate (guilty on all three counts). Take notes of everything and back them up because sleep deprivation and memory are terrible lab partners. Lean into collaborations – these provide flexibility and support and will move the project forward even of you are not at the bench. And yes, exercise helps.

I have been very lucky here too: having a scientist spouse means we understand the need to juggle experiments and meetings around baby needs, and at work Jody was also very supportive, giving me freedom to choose my workload and organise it as I needed. She also gave me all the time I needed for parental leave, which is not granted everywhere - The UCU's success in extending paternity leave at King's from 2 to 6 weeks came too late for me, but I am sure future parents will enjoy that well-earned right. So my advice here is triple: procreate with scientists, join groups with supportive PIs, and join your union.
And when stress peaks, listen to Frank Wilson's "Do I Love You (Indeed I Do)" or Lana Del Rey's "Sweet Carolina" to remind you of your new job description.

What are your future plans and how do you think that winning the BSCB postdoctoral researcher award medal would help you achieve them?
My next step is establishing independence as a junior PI, and I'm fortunate to be at Laboratory of Molecular Physiology at Universitat Pompeu Fabra in Barcelona, where I did my PhD. They're offering the mentorship, infrastructure and support needed for a strong start. The BSCB medal adds powerful validation to my grant applications - recognition from the very community we want to review our applications and papers, sometimes even cite them!

What advice would you give fellow early career researchers who are planning to apply for the BSCB Postdoctoral Researcher Award medal?
Come on in, the water is fine! Just do it!

Interview by Aymen al-Rawi

Meet the BSCB Committee

New Committee Member: Harriet Smith (Francis Crick Institute)

Hi! My name is Harriet Smith, I am a second year PhD student and I'm very excited to be a PhD student representative on the BSCB committee! I did my bachelor's in molecular biotechnology at the University of Heidelberg, followed by a master's in molecular medicine at Imperial College London. I am now in the middle of a PhD based in Katie Bentley's lab at the Francis Crick Institute, where I am investigating the role of protrusions in cellular decision-making in the context of angiogenesis.

My research combines cell-focussed behaviour dynamics (think: filopodia, lamella, migration) with concepts from robotics, psychology and information theory fields, as well as incorporating a bit of agent-based modelling. Although I come from a very biological background, this project is expanding my knowledge into different fields in a way that I could not have imagined when fresh out of my undergrad. I am fascinated by the complex, dynamic behaviour displayed by cells in the different contexts I can place them in. The stunning images that also come out of this project are a very welcome bonus!

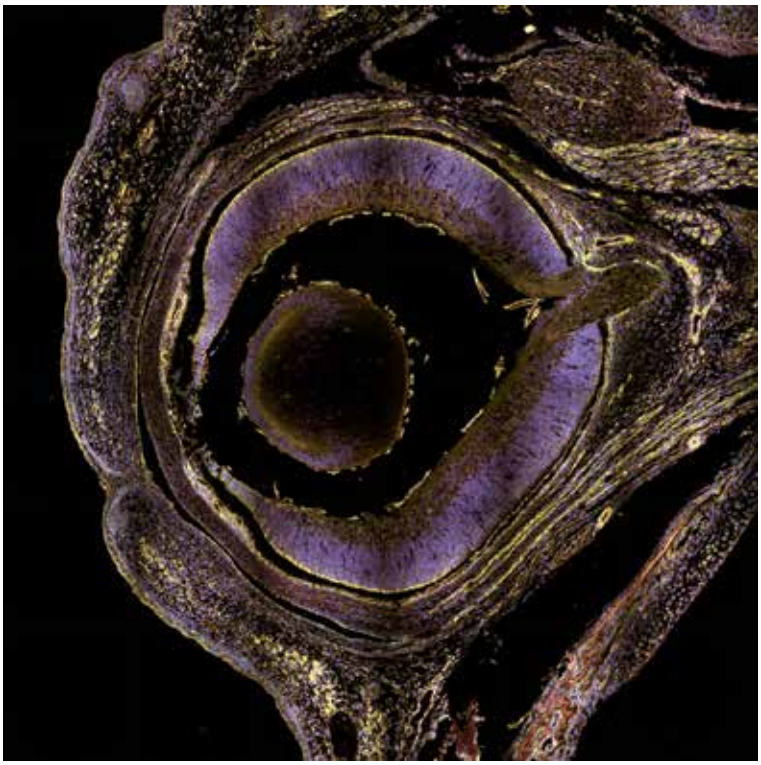
I am very excited to be a PhD student representative on the BSCB committee in the upcoming years. One of my goals is to make sure that PhD students aren't "swept under the rug," so to say, during the planning of events for the BSCB. Additionally, I hope to be able to use the BSCB social media to reach researchers at the beginning of their careers and show them all that the BSCB has to offer!

I have been a student representative from secondary school through to my master's, and I'm excited to be on this committee and learn many new things. I'm always open to suggestions, so if anyone is interested in having a chat regarding support for PhD students/early-career researchers please feel free to reach out to me!

Thank you for trusting me with this position! I'm looking forward to what the next few years will bring.

Image Competition 2024

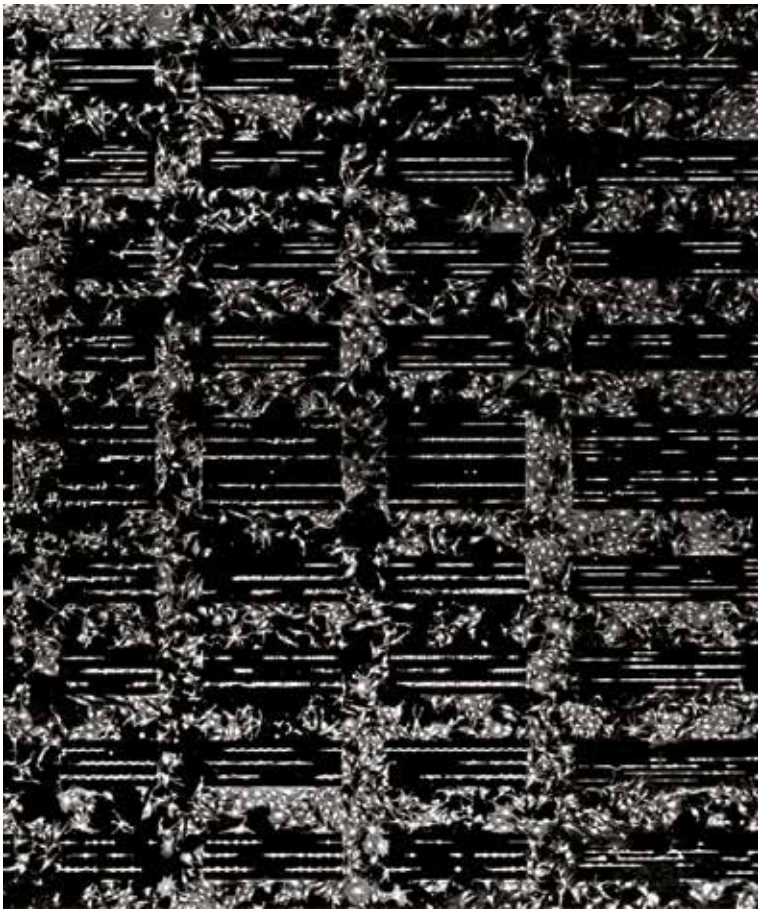
1st place: Alan Prescott



A set of tiled images taken from a frozen section of an eye from the mitoQC mouse (McWilliams et al. J Cell Biol. 2016 Aug1;214(3):333-45) at developmental stage E16.5. Mitochondria are labelled with GFP (green) and mCherry (red). DAPI-stained nuclei are blue. Large red dots are mitochondria in mito-lysosomes demonstrating turn-over of damaged or worn-out mitochondria in active tissues-in this case the developing eye. The acidic environment of the lysosomes quenches the GFP fluorescence. This mouse model has revealed the distribution of mitophagy in diverse active tissues such as the heart and retina. In addition, it unveils the tissue architecture as delineated by the distribution of mitochondria. At this stage the eyelids are closed, and the posterior chamber still contains blood vessels to support the developing lens and retina.

"I am a Senior Lecturer in Cell Biology at the School of Life Sciences, University of Dundee attached to the Dundee Imaging Facility. I research many aspects of Cell Biology particularly those studied using wide-field, confocal and electron microscopy. Before moving to Dundee, I studied the Biology of Man and his Environment as an undergraduate and then a PhD characterising the microtubule cytoskeleton of the exocrine pancreas both at Aston University. I then worked as a Research Fellow at the Universities of Keele and East Anglia."

2nd place: Irene Aspalter



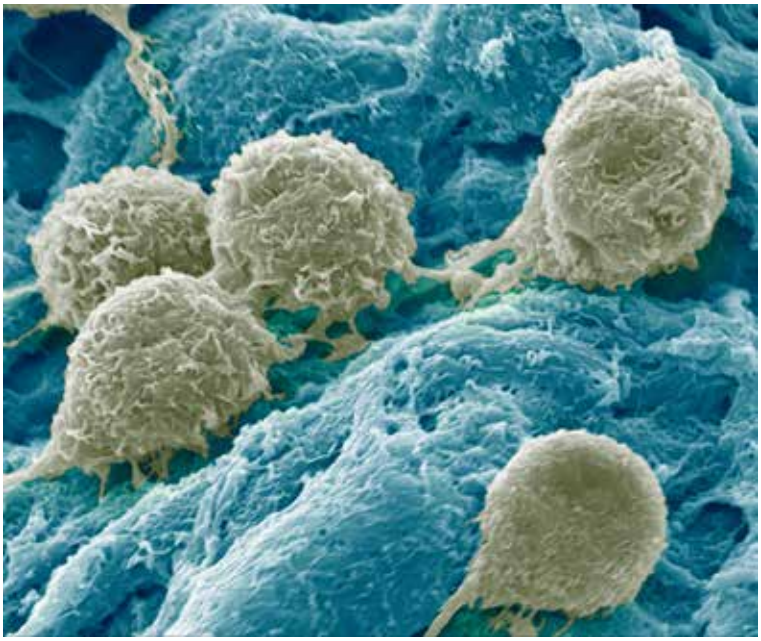
'In Line'. Microcontact printing is a powerful method to make cells adhere to very concise areas or shapes. I am using this method to print microscopic lines of extracellular matrix to study the decision making process between endothelial cells.

"It is absolutely fascinating how complex, hierarchical organisms develop from just one cell. What I find particularly interesting is how cells coordinate this process and make robust decisions to ensure the proper development of individual organs and the entire organism. I first started investigating cellular competition during my PhD at the CRUK London Research Institute, where I studied cellular competition in angiogenesis. During my Postdoc at UCL I got the chance to learn microfabrication techniques to study the migration potential of embryonic stem cells during early mammalian development.

Now, I am a Senior Laboratory Research Scientist in the Cellular Adaptive Behaviour Laboratory at the Francis Crick Institute, working again on angiogenesis. I am using microfabrication and bioengineering to develop tools that allow us to carefully dissect the mechanisms and pathways used between cells to communicate, in a physiological, yet accessible system. Our future aim is to manipulate the cellular communication to alter vascular network architecture in disease situations, where blood vessels are not optimally functioning."

3rd prize: Jishizhan Chen

A false colour scanning electron microscope (SEM) image of 3T3 cells on hydrogels. It vividly showcases 3T3 cells interacting on a hydrogel substrate, with a focus on the detailed cellular interactions with the gel environment and the dynamic connections established between adjacent cells.



"I am Jishizhan Chen, an Orthopaedist studying for a PhD in Orthopaedic Biomaterials at University College London (UCL). My PhD project developed an in vitro biomimetic bone liquid crystalline model, which revealed key biological activities and signalling pathways involved in the process of directional mineralisation. This work was accepted for an oral presentation at the 43rd SICOT Congress and was awarded the Shimomura/OREF/SICOT Travel Award. For this model, I developed a collagen-based photo-crosslinkable bioink for 3D printing. I am obsessed to observe how nano-to-micro topography of the composite affects cell behaviour, because the topography at this scale is a physical 'language' that allows us to 'talk' to cells thus instruct their behaviour.

My current work at UCL, however, is completely different from what I was used to. I thought changing models and topics would enrich my experience and make science more exciting to me. I am currently looking at how embryonic immune cells behave during development using the *Xenopus* embryo as a model system."

Science Writing Prize Winner 2024 – Monika Myszczynska

No Mushroom For Error - deadly fungi and the search for an antidote

When I am not in a lab growing nerve cells, I often wander out into forests and forage for edible plants and fungi. To my hiking companions' dismay and annoyance, I stop by each mushroom to assess its edibility - or just simply to admire the only visible part of the vast underground network of mycelia under my feet, the crucial role of which in the ecosystems we are only just starting to appreciate. And, of course, I take many pictures of them. After all, the undisputed king of all toadstools, the beautiful but inedible fly agaric (*Amanita muscaria*), with its bright red cap adorned with white specks, looks better in pictures rather than on dinner plates. Aside from the need for pictures in atlases, do photography and imaging have anything else in common with deadly mushrooms? The unlikely link was discovered recently by a team of toxicologists in Australia and China, and comes in the form of a dye called indocyanine green.

Developed in the mid-1950s by Kodak researchers for use in near-infrared photography, indocyanine green (ICG for short) was approved for medical imaging purposes shortly after its discovery, although its routine use skyrocketed in the 1990s as the medical imaging and camera technology improved. Amongst ICG's primary uses in its early days, and still the most popular applications today, are angiography and the study of liver blood flow and function.

The liver is also the site of havoc-wreckage where our anti-hero centres its powers. Enter alpha-amanitin, the toxic peptide which ended up giving *Amanita*, *Galerina*, and *Lepiota* mushrooms containing it such delightfully apt names like death cap (*Amanita phalloides*), destroying angel (*Amanita virosa*), deadly parasol (*Lepiota subincarnata*) or funeral bell (*Galerina marginata*). This potent hepatotoxin is responsible for the vast majority of mushroom poisoning cases worldwide now and throughout human fungivore history, ending, for example, the reign of the Roman Emperor Claudius in 54 CE, and the Holy Roman Emperor Charles VI in 1740. On the level of individual hepatocytes,

alpha-amanitin inhibits RNA polymerase enzymes responsible for turning DNA into messenger RNA, thus preventing the production of new proteins and causing gradual cell death. The more hepatocytes die, the more liver enzymes and toxins associated with abrupt cell death are released into the bloodstream, causing a domino effect of organ damage. Alpha-amanitin poisoning survivors who recover from liver failure often suffer life-long chronic liver diseases - and that's for those individuals who did not have to undergo liver or kidney transplantation.

There is no cure for alpha-amanitin poisoning and the success of supportive care depends on how fast medical assistance was sought, what treatment (if any) was administered, and, crucially, how much mushroom was eaten. Silibinin, a compound extracted from the milk thistle plant, showed promise in protecting the liver from poisoning and although it is effective in chronic and acute toxic liver disease, it is no match for deadly mushrooms. But here is where our hero, ICG, comes in. Using the famous, Nobel Prize-winning, gene-editing technology called CRISPR-Cas9, a team of scientists engineered human cells growing in a dish to have defects in different genes and then treated them with alpha-amanitin (1). One of those mutated genes, carrying a code for STT3B, made the cells resistant to amanitin. STT3B is an oligosaccharyltransferase, an enzyme responsible for adding sugar molecules to proteins, which ensures the cells function properly (but if you were picturing your Sunday roast getting coated in sugar, don't worry - I did the same).

Identifying the key player in mitigating alpha-amanitin poisoning made the job of screening antidote candidates easier. From over 3000 tested compounds, one winner emerged – ICG, slashing the likelihood of death from alpha-amanitin poisoning down to 50% in mice whilst protecting the liver from necrosis. Although you might think that giving you a 50:50 chance of survival can hardly be called a miraculous cure (as opposed to a brand new potential snake antivenom which stopped all mice from dying [2]), the study was not yet done in human volunteers (or hapless foragers, for that matter). ICG is already used in people, is itself non-toxic, and was identified as a treatment candidate using a reliable method which the study authors used previously to find an antidote for jellyfish venom (3). With many other poisons with no remedy (like bacterial toxins which lead to sepsis), such results and potential applications of this technology are, indeed, very exciting.

One question remains - why did unrelated species of *Amanita*, *Lepiota*, and *Galerina* develop the ability to synthesise amanitin? Although recent studies showed that this likely occurred via horizontal gene transfer over the course of their evolution (4), the ecological benefit of such adaptation remains unknown. But then again, who wants to be eaten? Many species spanning both kingdoms of flora and fauna have evolved various ways of protecting themselves from being consumed. Whilst the early ancestors of our humble jalapeño, for example, could not predict that eventually no amount of capsaicinoids is going to stop the notorious *Homo sapiens* from eating them and challenging the limits of the Scoville Scale, mushrooms figured out that death or severe sickness might be the only feasible ways of keeping the hungry critters at bay. Unlike aposematic plants and animals which developed a colourful, often flamboyant, and above all, frankly, superbly polite system of warning their predators about their unpalatability, mushrooms look unassuming and have too many poisonous look-alikes to take the risk, even with potential treatments like ICG. With poisonings, like with most illnesses, time is the name of the game and symptoms might not develop or be recognised until it's too late, when even the most potent antidote cannot reverse the damage.

Therefore, my message to all aspiring foragers is - never be less than absolutely certain that what you put in your basket is safe to consume. If not, a photo will make a nice memento - or a memento mori, if you like. That's the morel (sorry, I had to) of the story.

References:

1. Wang, B., Wan, A.H., Xu, Y. et al. Identification of indocyanine green as a STT3B inhibitor against mushroom α-amanitin cytotoxicity. Nat Commun 14, 2241 (2023).
2. Irene S. Khalek et al. Synthetic development of a broadly neutralizing antibody against snake venom long-chain α-neurotoxins. Sci. Transl. Med.16, eadk1867 (2024).
3. Lau M.T., Manion J., Littleboy J.B., Oyston L., Khuong T.M., Wang Q.P., Nguyen D.T., Hesselson D., Seymour J.E., Neely G.G. Nat Commun. 10(1):1655 (2019).
4. Luo, H., Hallen-Adams, H.E., Lüli, Y., Sgambelluri, R.M., Li, X., Smith, M., Yang, Z.L., Martin, F.M. Genes and evolutionary fates of the amanitin biosynthesis pathway in poisonous mushrooms. Proc Natl Acad Sci U S A. 119(20), e2201113119 (2022).

Monika Myszczynska is a postdoctoral research associate in the group of Professor Guillaume Hautbergue at The University of Sheffield's Neuroscience Institute. Her research focuses on the non-cell autonomous mechanisms of amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD), and in particular on the involvement of astrocytes. She completed her PhD in 2021 at The University of Sheffield under the supervision of Professor Laura Ferraiuolo, investigating the repurposing potential of various compounds in the context of ALS.

Euro-BioImaging: Microscopes for everyone

Have you ever been at a conference, listening to a talk and thinking to yourself – "Wow! What a cool microscopy method! I wonder what my samples would look like with that?"? And maybe your institute doesn't have that particular system available in its imaging core facility and you don't really know where to start to try to use this method for your research question. This is where Euro-BioImaging comes in.

Euro-BioImaging is the European Research Infrastructure for biological and biomedical imaging – and as a publicly funded infrastructure consortium provides open access to imaging technologies, expertise, and image data services through its nearly 240 imaging core facilities across all of Europe. The mission of Euro-BioImaging is to make cutting-edge imaging technologies and expertise available to all researchers, independent of where they are working, their level of expertise, or research area. All researchers affiliated or based in the UK or Ireland can make use of the open access and opportunities offered by Euro-BioImaging without any restrictions.

The portfolio of imaging technologies available through Euro-BioImaging is very comprehensive – with more than 120 technologies spanning across all scales. All the imaging tools of interest for cell biologists are available – starting from methods for characterising physical and chemical states of cells, such as MassSpec imaging and Atomic Force Microscopy. The entire range of Electron Microscopy approaches is represented – from cryo-ET for in situ structural biology to immuno-EM and volumeEM for looking at larger sections of cells with ultrastructural resolution. And of course, a comprehensive set of fluorescence microscopy and label-free imaging tools is also available. From super-resolution methods such as MINFLUX and STORM, to live cell imaging with FLIM-FRET, high-throughput screening, lightsheet systems, tissue clearing, multiplex imaging, QPI, and CARS – the Euro-BioImaging Nodes can provide access to all this and more.

To help researchers navigate the technology portfolio and find the right imaging technology for their research question, Euro-BioImaging experts are available and provide individual consultations and connect any interested researchers with the expert core facility staff at the Nodes who can support their research project and provide a range of support services around imaging, such as support for sample preparation or dedicated animal and plant facilities.

Euro-BioImaging also provides support for any cell biologists who may be struggling with all the image data they are generating as part of their experiments. Expert image analysists at the Euro-BioImaging Nodes are available to provide image analysis support on data that has been gathered in a researcher's own laboratory or facility or as part of a Euro-BioImaging user project. This support can range from helping choose the right analysis approach to developing dedicated analysis pipelines.

Euro-BioImaging also provides support for image data management - from imaging-specific data management plans to support from the Euro-BioImaging FAIR data steward in sharing publication-associated data on a public repository. Through several EU projects, such as canSERV and AgroSERV, researcher working in relevant research areas can also apply for funding to access Euro-BioImaging Node services. These grants cover user fees, and can support researchers with costs for travel or accommodation to visit one of the Euro-BioImaging Nodes to perform their imaging experiments there. Find out about available

funding opportunities at www.eurobioimaging.eu/how-to-access/funding/. Any researcher around the world can apply for these funding opportunities.

Euro-BioImaging also offers a range of online events and webinars for anyone interested in imaging technologies, image data, and the diverse applications of imaging. The weekly seminar – the Euro-BioImaging Virtual Pub – takes place online every Friday at 13:00 CET, offering latest updates on imaging technologies and an opportunity to meet the European Imaging community. An overview of upcoming webinars and trainings is available on https://www.eurobioimaging.eu/our-events/

Wondering how to get started? Check out www.eurobioimaging.eu/how-to-access/ for an overview of our application process and useful contact information.

Happy imaging!

Johanna Bischof, Euro-BioImaging ERIC
Georgina Fletcher, BioImagingUK and The Royal Microscopical Society
Alessandro Ciccarelli, The Francis Crick Institute
Dylan Herzog, King's College London,
Robert Lees, Science and Technology Facilities Council, Central Laser Facility
Marco Marcello, University of Liverpool
Peter O'Toole, University of York
Jessica Valli, Heriot-Watt University
Ann Wheeler, University of Edinburgh

The UK Node of Euro-BioImaging

Just a sample of the advanced imaging technologies available at the UK Node of Euro-BioImaging

The UK Node of Euro-BioImaging comprises 7 different sites across Scotland and England and offers access to more than 25 different technologies, workflows and services. Here we highlight just one or two from each site, with detailed information available here: https://www.eurobioimaging-access.eu/nodes/uk-node

ESRIC

ESPRIC is a consortium focusing on super-resolution imaging techniques between the University of Edinburgh and Heriot-Watt University). The Leica SP8 STED is capable of multicolour, 3D stimulated emission depletion (STED) microscopy, with time- or lifetime-based gating options. The 50nm resolution capabilities of this system have enabled characterisation of dendritic spine morphology, synaptic protein expression, cancer-associated changes in actin regulatory proteins, and much more.

Francis Crick Institute

The Crick Advanced Light Microscopy Facility offers a wide range of microscopes for mesoscopic imaging. Three types of lightsheet and High Resolution Episcopic Microscopy (HREM) microscopes that allow imaging of live, fixed and cleared biological samples (organoids, embryos, whole organs and organisms). In addition, an image analysis service for biological samples is offered.

King's College London

The Nikon SoRa Spinning Disk is a fast, high-resolution system for live-cell imaging, which offers super-resolution (up to 2x enhanced in xy) through pixel reassignment. It is fully equipped with an environmental chamber and dual cameras, making it ideal for high-speed fluorescence imaging of dynamic cellular processes. The Nikon N-STORM system is a dedicated super-resolution system which can achieve resolutions down to 20-50 nm. Additionally, it can be used in TIRF mode, ideal for the investigation of the mechanisms and dynamics of many of the proteins involved in cell-cell interactions close to the coverslip.

Liverpool University

Alongside state-of-the-art high-throughput and super-resolution platforms, Liverpool hosts a unique set of instruments. These have, for instance, in a recent project on biomimetic materials enabled researchers using a magnetic field with a strength of 9.4 T to orient peptide fibres and study their alignment with cross-polarization microscopy (Bianco et al. (2024) Nature Synthesis). Another unique correlative system is a hybrid confocal-Atomic Force Microscope, which combines mechanical control at the nanoscale with real-time monitoring of cell responses via fluorescent reporters, which can be used to study cell adhesion and biofilm formation.

OCTOPUS, Research Campus at Harwell

As well as the MINFLUX microscope, Octopus possesses strong capabilities in fluorescence lifetime imaging across two specialised microscope systems. This enables the observation of intracellular environments, such as plasma membrane tension or DNA compaction.

Oxford Brookes University

Brookes focuses on volumeEM and CLEM workflows, including dual axis serial section cellular electron tomography and serial block face-scanning electron microscopy (SBF-SEM). They work with fixed or high-pressure frozen samples and have extensive expertise in eukaryotic parasite work and insect vectors (including the necessary CATII facilities and SAPO licence to support these projects).

York University

At York a broad range of light and electron microscopy supported by a team of 8 with deep expertise in most life science sample types is available. Beyond standard confocal, slide scanning and super-resolution offerings, the lab also has more niche equipment and expertise is label-free QPI, laser-trapping, in situ volume electron microscopy, and imaging cytometry. The lab also dovetails with genomics, mass spec and other labs to give a complete set of capabilities to support user projects.

I am not a microscopist

'I am not a microscopist' is a phrase that we hear from many biologists who use microscopy in their research but who do not consider themselves to be experts. This mindset has contributed to a disconnect between those developing new methods for imaging and image analysis and the 'end-users' (aka biologists) who could benefit from the latest methods to answer their biological questions.

Bringing together all stakeholders in the imaging community was our main aim when we set up our online microscopy community site, FocalPlane (https://focalplane.biologists.com/). Since its launch in 2020, the site has grown with regards to its user base and the types of content hosted on the site. This year, we've been continuing to work on how we can best serve the imaging community as a whole.

FocalPlane aspires to be an informal setting where you can hear about the latest advances in imaging technology, alongside pioneering life science research that uses microscopy. On the site, you can find a host of useful resources (see figure), such as 'How to' posts for various bioimage analysis tools, updates on the latest probes, and fortnightly preprint lists. We hope this means that you can stay up to date without having to scroll through all the specialist journals where these advances are published. Although we are excited to host high-quality content on FocalPlane, we also see ourselves place to signpost the fantastic resources that already exist within the imaging community. With this in mind, we are delighted to announce that the MicroList resource database is now live on FocalPlane. MicroList was first created by Jennifer Waters and Talley Lambert at Harvard Medical School, USA, where they collated resources created by the imaging community. These resources are divided into community resources, educational resources and tools. The database is fully searchable via our search bar, or you can use our filtering system to identify the resources that you are looking for. We invite our users to continue adding their resources to the database and we also welcome recommendations for resources that you find useful in your research as we aim to keep the database up to date.

FocalPlane is also about community. In 2021, we added the FocalPlane Network to the site in an attempt to foster interactions within the community. The Network, which now contains over 400 members, is a database of researchers with expertise in microscopy and can be used to search for collaborators, reviewers, speakers and panellists. In addition to criteria such as location, scientific field and area of expertise, the database is also searchable by aspects of diversity (such as gender, race/ethnicity, LGBTQ+ status and disability status), which members can choose to add. We invite members of the imaging community to add themselves into the Network, which is open to researchers from all career stages and geographical locations. We also have an interview category where we highlight microscopists from all career stages across the community, including our very popular Latin American Microscopist series. In addition, we've been highlighting core facilities from around the globe in our 'Imaging with…' series; we'd love to have recommendations for this series so please get in touch if you'd like your core facility to be featured.

Last year, we teamed up with MicropscopyDB to upgrade our events calendar and jobs board, providing a one-stop shop for anyone looking for microscopy-based conferences, courses or positions within the community. It's free and easy to post your microscopy-related jobs and events on MicroscopyDB – the listing will then appear on FocalPlane as well as on the other partner sites across the world.

Given that FocalPlane is hosted by *Journal of Cell Science* (JCS), we also wanted to look at different ways that we can better support the cell biology community alongside the imaging community. One way we have done this is to introduce a cell biology jobs board to run alongside our microscopy-specific jobs board. The jobs on our cell biology board do not have to have a microscopy component

to them, so whether you're looking for a PhD programme, a post-doc position or a tenure-track position in the field of cell biology – or if you're looking to hire someone in one of these positions – please do check it out! In parallel, we have also added a cell biology events calendar to the site, so that you can find meetings, courses and conferences in the field, or tell the community about your upcoming event. Again, it's easy and free to post a cell biology job or event – you just need to register with FocalPlane, and if you run into any problems, we'll be available to help. Finally, we recognise the importance of microscopy training for cell biologists so, earlier this year, we launched our JCS–FocalPlane Training Grant programme (https://www.biologists.com/grants/jcs-focalplane-training-grants/). These grants are aimed at early-career researchers, working in an area covered by JCS, who would like to attend a microscopy training course. JCS, together with its not-for profit publisher, The Company of Biologists, has been providing funding for the community for years (in the form of Travelling Fellowships, Meeting Grants and meeting sponsorships) so we are delighted to be able to extend this support to the imaging community.

In line with our aim of bringing the imaging and cell biology communities together, we also recently hosted webinars that were targeted to cell biologists and life scientists more broadly. These webinars, which were part of our 'FocalPlane features…' webinar series, focused on topics such as data management and reproducibility. If you missed the webinars, you can view the recordings, some useful links and additional Q&As on the site. If you have ideas for future webinars that you think would be useful for the community, please do send us your suggestions.

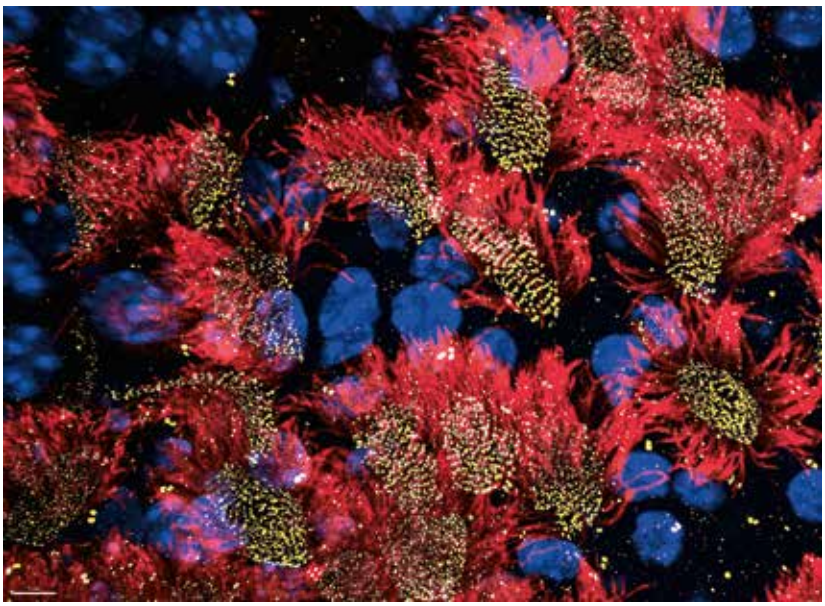
Finally, we are delighted to announce that Pablo Saez (University Medical Center Hamburg, Eppendorf, Germany) has been appointed to our Scientific Advisory Board. Pablo has a career-long involvement in both cell biology and microscopy, and we are working with him and other members of our Scientific Advisory Board to look at further developing our cell biology corner.

We hope that these upgrades to FocalPlane will prove to be useful to you – our community. If you want to get involved with FocalPlane, please check out the site and sign up for our newsletter to receive the latest news. If you have any feedback or any requests, you can contact us using our contact form or at focalplane@biologists.com. We're always happy to hear from you.

Seema Grewal, Helen L Zenner

BSCB GenSoc UK Cilia Network e-Symposia Series

The BSCB GenSoc UK Cilia Network e-Symposia Series has been running since the COVID pandemic, so that the series is approaching its 50th symposium at the time of going to press. Professor Pleasantine Mill, of the MRC Human Genetics Unit at the University of Edinburgh, has been organiser and chair of the series since its inception. We asked Pleasantine for her views.



Above: :
Wholemount confocal image of adult mouse trachea stained for centrioles (FOP, yellow) and cilia (acetylated tubulin, red). (Image credit: Dr Emma Hall)

What is the current format of the e-Symposia?
The series was initiated in April 2020 when it became clear that our in-person UK Cilia Network meeting in Edinburgh was not going to happen. Coupling that with other in-person conferences I was organizing like EMBO Cilia 2020 (Cologne, DE) and GRC Cilia 2021 (Barga, IT) that would also be cancelled, it struck me how much of an impact this would have on the progression of ECRs and new PIs especially, without key podium talks on their CVs.

So we moved it all online to Zoom, initially once every two weeks, inviting late-breaking talks and emerging talent to start, but moving out to volunteers too. We tried to balance each session, structuring it to mix of topics, career stages and geographies. We are very egalitarian- everyone gets a 15-minute talk and 5 minutes of questions, whether you are a postdoc, student or founder of the field. Questions are typed into the Q&A function which I read out and what we can't get through in time, the speakers have the opportunity to answer afterwards offline. It means everyone feels comfortable asking their questions- no one person can dominate. We run five to six talks in a webinar format, followed by a 'breakout' panel discussion which all audience members can join. The panel discussion remains my favorite part.

We have dropped the frequency to four times a year but kept the format. Free and open to all, we have a registration list just shy of 1500 researchers from across the globe. At our last session on the 12/11/2024, we had 352 people watch live and 120 watch the recording, with audience members joining from Taiwan to Turkey, from across the UK to Uruguay. It is a massive reach. It is inclusive- no visa issues, no prohibitive fees or crippling carbon footprints. It remains very much about building communities, raising profiles of our research and researchers and connecting people. As such it is quite unique- we would see it continuing in parallel to the traditional in-person meetings which run in the cilia and centrosome space.

What are the key things that you need do as organiser?
Ear to the ground- I am always scanning for what are the most exciting preprints, talks or stories I come across that would be of interest to the community. Some of the content is curated- invited talks- whilst others are volunteers, and others -supervisors or collaborators- somewhat arm-twisted into presenting. As a line-up is evolving, I will look to balance out topics so we always cover the range across cell biology, structural biology and genetics. It is important to create a line-up that has something for everyone.

Other things include always have a question ready for when there is a lag from the audience. Plus, creating spaces for people to speak up in group discussions.

What is your motivation for continuing the e-Symposia after the pandemic?
Connecting people. My list of e-symposia registrants is most quickly growing in India and China, but the key meetings in the field in Europe and the US have poor representation in terms of Asian speakers, presenters and attendees. How do we continue to evolve an international community engaging all researchers, championing collaborations and transformative open science? I see the series as a key element in a bigger piece of work connecting various players in our field, coming together to empower our research and creating stronger networks internationally.

What have been the main challenges for you in running online symposia?
Most definitely maintaining WiFi signal whilst running the e-symposia during the pandemic, in stealth competition with my three kids who were told not to game during the session. But honestly, the challenges are very few. Inclusivity in a live event with global reach is challenging- middle of the night for my Japanese panelists, with an early rise for our West Coast friends, means we just about get everyone online.

How does BSCB support help you with the e-Symposia?
In addition to financial support when we first started, the BSCB is key to help amplify our reach about the e-symposia on social media. The brand is also important to widen the appeal- the series is for everyone, beyond just those within the UK Cilia Network. The interdisciplinary nature of cilia and centrosome biology pulls from many spheres- by leveraging the gravitas of BSCB and Genetics Society UK we increase our reach.

What advice would you give anyone thinking about a similar initiative?
Just do it. In an age of open science, preprinting science before publication is a one key step. This type of open symposium builds on that to raise the profile of the authors, the prominence of the story and create an opportunity to gauge feedback from the field, including additional experiments, overlooked references and new collaborations, by sharing early. Within our list of 1,500 registrants, we have several journal editors, some funders and those on faculty search committees. The benefits for your community can only snowball through such a series. In our 49 sessions so far, we have showcased 276 speakers and it has become an institution.

URLs:
https://www.cilianetwork.org.uk/events/
https://www.cilialab.co.uk/ciliameetings
Register for the series: https://www.eventbrite.co.uk/e/122092125835?aff=oddtdtcreator

Meet the BSCB Committee

New Committee Member: Aymen al-Rawi (MRC LMB)

I am a new member of the Executive Committee of the British Society for Cell Biology (BSCB). I take the role of representing postdoctoral scientists who are members of the society. I started my scientific journey as a dentistry student in the Syrian capital, Damascus, after completing my high school in Jordan. My family and I had previously moved to Jordan to flee the civil conflict that broke out in 2006 in our home country, Iraq. Two and a half years into my dentistry degree, I found myself having to escape a similar war situation and move back to Jordan. Cell and molecular biology were always part of our curriculum, especially in the first two years of the school of dentistry. I very much enjoyed reading about the molecular explanations of why some people were more susceptible to dental infections than others, and how cells changed their morphology in oral tissues under different diseases. This is why I chose to do a degree in biomedical science when I moved to the UK as a student at Cardiff Metropolitan University in Wales. Learning the history of great scientific discoveries like DNA structure and protein phosphorylation, and getting a hint of how such complex problems were solved persuaded me to do a master's degree in the same department. There, my project focused on understanding how bone marrow stem cells make their fate decision of whether to differentiate into red blood cells or platelets. I then moved to the Wellcome Trust Centre for Cell Biology at the University of Edinburgh to do a PhD in cell and molecular biology with Dr Tony Ly, funded by the Darwin Trust. During my PhD, I developed expertise in mass spectrometry as my thesis project utilised this great technique to answer a simple question: How can a single enzyme induce the phosphorylation of specific sites at different stages of the cell division cycle? I consider myself lucky to also have had the chance to experience working in another amazing Scottish institution, the University of Dundee, to which my supervisor relocated the lab during my PhD. After a short postdoc at the University of Cambridge, I then joined the group of Dr John O'Neill at the MRC Laboratory of Molecular Biology (LMB) in Cambridge to be part of a multidisciplinary team that aims to understand the biology of circadian rhythms. These are (about) daily cellular cycles that underlie many aspects of health and disease but run independent of the cell division cycle.

Being part of the BSCB gives me the chance to serve scientists in the UK through representing fellow early career researchers in the society. It also allows me to take part in organising conferences that the society takes part in, like the Biologists@100 scheduled to take place in Liverpool in March 2025 and Dynamic Cell VI in 2026.

Meeting reports

UK Membrane Trafficking meeting 2025

16 December 2024. King's College London

What makes the holiday season even merrier? The answer is a one-day meeting sponsored by the British Society for Cell Biology, of course! This is certainly the case for both early career and established researchers alike who attend the UK Membrane Trafficking meeting held annually in December.

The UK Membrane Trafficking meeting features the most recent developments in our understanding of vesicular and non-vesicular membrane transport mechanisms and their vital roles in cell and tissue biology. Topics include trafficking along the secretory and endocytic pathways, autophagy, organelle biogenesis and homeostasis, membrane damage and repair, as well as membrane structural biology, modelling, and biophysics. Importantly, the UK Membrane Trafficking meetings are successful every year because they provide a forum for junior investigators (students, postdoctoral researchers, and new group leaders) to present their exciting (and often unpublished) research findings.

The 2024 UK Membrane Trafficking meeting, held at King's College London (with special thanks to co-organiser Jeremy Carlton), was a scientific treat once again. Katie Downes (Zanetti lab, Birkbeck/FCI) and Xiaohan Li (Miller lab, Dundee) provided a strong start to the meeting by presenting their findings on the in situ cryo-electron tomography ultrastructure of endoplasmic reticulum exit sites and the role of an intrinsically disordered region in the COPII subunit Sec24, respectively. Liz Lawrence (David Stephens lab, Bristol) clearly demonstrated specialised functions of distinct Tango1 isoforms in collagen secretion and skeletal development in zebrafish. Jurgen Denecke (Leeds) rounded up the session on the early secretory pathway by describing a thought-provoking model for protein retention in secretory compartments in plant cells. In ensuing sessions, there were several interesting talks on membrane organelle homeostasis and repair, as well as infection and immunity. Thibaud Martial (Milosevic lab, Oxford) revealed unprecedented roles of dynamin GTPase isoforms in regulating nuclear envelope morphology and genomic stability. Likewise, Blythe Wright (Bryant & MacDonald labs, York) revealed surprising, unconventional functions of the Vps45 protein in mitochondrial homeostasis with links to apoptosis and the progression of severe congenital neutropenia. Carmen Figueras Novoa (Beale lab, FCI) demonstrated that trafficking of the Influenza A virus M2 protein is regulated by caspase-mediated cleavage. Dylan Noone (Bubeck lab, Imperial) described the structure of CD59 and cellular defense mechanisms. Patrycja Kozik (MRC LMB) shared beautiful unpublished structural data shedding light on how Perforin-2 forms pores in endocytic compartments. Several talks highlighted how cutting-edge technological and inter-disciplinary approaches offer new insight and perspective in the membrane trafficking field. Carlos Anton Plagaro (Cullen lab, Bristol) presented recent work using proximity-based proteomics to identify additional components of the Retromer complex.

George Bates (Brodsky lab, UCL) described evolutionary and biochemical approaches to uncover and study an alternatively spliced version of the clathrin heavy chain involved in insulin-regulated glucose homeostasis. Shubhangi Sharma (Mayor lab, Warwick/NCBS) presented sophisticated experimental systems to elucidate how membrane mechano-transduction controls an ARF GTPase-dependent endocytic pathway. Jaime Agudo-Canalejo (UCL) shared results from computational modelling approaches to better understand the biophysics of membrane sculpting and scission events. The meeting was closed by Daniel St Johnston (Gurdon Inst, Cambridge) who described elegant, yet advanced, imaging experiments that illustrate the complexity of membrane trafficking pathways in polarised epithelial cells.

There were some special recognitions at the 2024 UK Membrane Trafficking meeting. Congratulations to the winners of best talk prizes sponsored by the Journal of Cell Science. The PhD student prize was awarded to Katy Yalci (Carroll lab, Bristol) who shared unpublished findings from cell biological experiments and molecular dynamics simulations to identify and study a novel lipid droplet protein. The postdoctoral researcher prize was awarded to Alex Van Vliet (Munro lab, MRC LMB) who presented unpublished findings from proteomic and structural modelling studies revealing new protein interactions of the Rab1 small GTPase during autophagy.

There were also some notable acknowledgments and tributes at the 2024 UK Membrane Trafficking meeting. Sadly, David Stephens passed away in 2024. David is dearly missed by his family, friends, and colleagues at the University of Bristol and UK Membrane Trafficking community.

As mentioned, the 2024 UK Membrane Trafficking meeting took place at King's College London which marked a new venue for this event. Traditionally, for more than two decades, the UK Membrane Trafficking meeting has been held at University College London and organised by Dan Cutler. We are immensely grateful to Dan for his dedication and tireless effort year after year to make this meeting thrive and become so successful today. Our annual conference began as a roundtable meeting among a handful of researchers more than 30 years ago. Due to Dan's commitment to the membrane trafficking field and community, the UK Membrane Trafficking meeting is now regularly attended by approximately 250 people every year and serves as a world-wide showcase for research excellence in molecular membrane biology. Thanks to Tom Nightingale for providing a thoughtful and entertaining recognition of Dan's many accomplishments (and features) over the years. Most of all, thank you, Dan Cutler!

The UK Membrane Trafficking community is truly grateful for continued sponsorship from the British Society for Cell Biology. It is through support from the British Society for Cell Biology, the Journal of Cell Science, as well as amazing people including Dan Cutler and countless speakers who present and promote brilliant science, that the UK Membrane Trafficking meetings have sustained such popularity, importance, and impact across several decades.

Dr Chris Stefan and Dr Jeremy Carlton

Actin 2024

15 December 2024. Watershed, Bristol

Actin 2024 took place in the harbourside Watershed complex in Bristol on the 15th December. This an annual one-day meeting joint funded by the BSCB and the Royal Microscopy Society and its main goal is to bring together the UK actin community for a day of informal talks and discussion.

The talks were given by post docs and PhD students and were 15 minutes with 5 minutes for questions. At lunch time there was a poster session, which was a nice way to make sure all attendees had the opportunity to network and discuss science. Prizes were awarded by the meeting organizer, Harry Mellor (whilst standing on a chair), for the best poster, talk and the best imaging. The joy of hearing talks on actin and the cytoskeleton is that you are more or less guaranteed some pretty breathtaking imaging (the actin waves on show by Joe Tyler, University of Sheffield, were particularly impressive).
One of the best things about this conference is the atmosphere, its very inclusive and non-confrontational discussions, and the wealth of questions after each talk. Each session was chaired by a PI with a strong interest in the subject. Actin is involved in so many diverse processes that the talks were really varied- topics covered included ECM deposition, cancer invasion and growth, mechanosensing, actin nucleation, organelle transport and cell migration. The costs for this conference were very reasonable (less than £40) so it's a really great opportunity to bring your whole lab. Overall a great conference and a really good way to get exposure for your research or perhaps to get an introduction to one of the most abundant (and important) proteins!
Tom Nightingale

Summer studentships

Investigating the role of Rab GTPases in paediatric brain cancer medulloblastoma

Evie Argent held a studentship with Professor Alistair Hume at the University of Nottingham

During the first two years of my Biochemistry and Molecular Medicine degree at the University of Nottingham, I developed a strong interest in how dysfunctional cellular mechanisms contribute to disease pathogenesis. I previously had opportunities to develop technical laboratory skills but had not had the chance to apply my skills to a scientific hypothesis. Therefore, I decided to apply for a BSCB summer studentship to get a feel for what it is like to work in a research lab, and to decide if a postgraduate research career is the right option for me. The BSCB funding was perfect, because it gave me a lot of flexibility in the research topic, and the eight-week period allowed me to learn and develop multiple techniques.

After meeting with Dr Hume, I felt that my interests were well aligned with his research group. The Hume lab focuses on the role of intracellular trafficking (in particular Rab GTPases) in disease. They are currently interested in the role of Rab GTPases in paediatric brain cancer medulloblastoma, which is the most common malignant paediatric brain tumour. The group previously identified that the Rab11A gene is upregulated in group 3 medulloblastoma. The group 3 subtype has the highest incidence of metastasis at diagnosis. CRISPR-Cas9 technology was used to disrupt the Rab11A gene to generate a stable Rab11A knockout in the group 3 medulloblastoma patient derived cell line, HD-MB03. Proteomic analysis revealed that mitochondrial metabolic pathways were downregulated in the Rab11A knockout, so we would expect these cells to have reduced mitochondrial activity compared to the CRISPR control.

The aim of my project was to investigate possible functional differences between the Rab11A knockout and CRISPR control cells. I began by using a resazurin cell viability assay and cell counting protocol to determine if there was a difference in the rate of proliferation between the Rab11A knockout and control cells. The Rab11A knockout cells displayed a slower rate of growth in both assays. Next, we stained the cells with fluorescent dyes which permeate and stain active mitochondria. We used confocal microscopy to distinguish if there was a visible difference in the mitochondria between the knockout and control cells. We could not detect a difference by eye, so we took the stained cells to flow cytometry to obtain quantitative results. There was no significant difference in mitochondrial mass or membrane potential between the knockout and control cells. I also carried out a western blot using a primary antibody against voltage-dependent anion-selective channel (VDAC), which is expressed on the outer mitochondrial membrane. The band for the knockout cells was visibly weaker, suggesting a lower VDAC expression which could be indicative of smaller or fewer mitochondria. If I had more time in the lab, I would have analysed the western blot quantitatively to determine if the difference in VDAC expression between the knockout and control cells was significant. From my preliminary experiments, we have identified a potential growth phenotype associated with Rab11A. The Hume group will continue to investigate mitochondrial metabolism in these cell lines and obtain further repeats of the growth assays, to determine if Rab11A is a regulator of mitochondrial metabolism and drives metastasis in group 3 medulloblastoma.

I found this experience challenging, and frustrating at times, for example when I'd spent several weeks optimising a staining protocol but did not obtain significant results from flow cytometry. HD-MB03 being a semi-adherent cell line presented several challenges with subculture and staining, but working with these cells has undoubtedly improved my precision. Once I was confident in tissue culture, I enjoyed working independently and found this very rewarding. I also enjoyed the opportunity to present my results to the group and gain insight from experienced researchers. Despite often working independently, I learnt how teamwork and collaboration between research groups is essential to develop new experiments. My confidence really grew throughout the project, and I am excited to continue my journey towards becoming a researcher. I feel very grateful to have contributed to the important work of the Hume group, and to have worked on medulloblastoma, which is responsible for 10% of paediatric cancer deaths. This experience has left me feeling inspired to pursue a career in biological research. I am looking forward to the final year of my degree, during which I will complete a lab-based research project on the role of STAT3 in glioblastoma. After my undergraduate degree, I hope to secure a PhD related to cancer biochemistry. I would like to thank Dr Hume, his senior technician, Deb Briggs, and everyone in the D13 lab for their support, as well as the BSCB for making this experience possible.

Using CRISPR and the waxmoth, *Galleria mellonella*, to understand the cellular basis of phagocytosis

Pippa Budgell joined Professor James Wakefield's group at the University of Exeter

Receiving a BSCB studentship this summer allowed me to spend eight weeks at the University of Exeter investigating the morphology of *Galleria mellonella* haemocytes and their phagocytic capability using confocal microscopy. By working with the *G. mellonella* Research Centre, I understood the possibility of using *G. mellonella* as an alternative model system in research, especially with its potential as an infection model as the larvae survive in 37°C incubation, mimicking the human environment yet with the cost and ethics of an insect model. However, as it is not as popular a model as *Drosophila;* for example, the understanding of haemocyte types, roles and activity is not as widely researched. Therefore, my project began with classifying cell types based on morphology to later quantify the population and compare the phagocytic capabilities of each type.

I loved working in the lab, learning how a research-grade *G. mellonella* colony is maintained, and practising using a confocal microscope independently. In this project, my laboratory skills were both tested and developed, and I now have increased confidence in my ability to learn new skills in a lab environment. Being in the academic environment also pushed me to discuss scientific concepts, and gave me the opportunity to present my work and results to a variety of academics, as well as being able to learn about the work going on elsewhere in the department and the field.

My experiments were successful in producing images of fixed *Galleria* haemocytes that could then be analysed and the data processed, but the original goal of using CRISPR on embryos was changed due to the life cycle of *G. mellonella* compared to the length of my project! Using a pre-established knockout line with a continuous supply of null larvae would have been ideal for the original project plan. Also, I needed to trial a variety of methods to fix and stain the haemocytes as there wasn't an obvious standard method in the literature; time restraints meant the sample size finally used was low, and didn't lead to statistical significance across the tested hypotheses. I was surprised by the amount of time and resources that one experiment can take, which gave me an appreciation for the process of allocating funding to research and advocating for promising research topics.

The BSCB studentship has given me experience in practical research for which I have only learnt the theory until this point, like immunofluorescence microscopy, and an appreciation for cell biology and microscopy. I would love to build a career where I can use some of these techniques and spend time in the lab. I am interested in clinical biochemistry or histopathology, where laboratory work can directly help patients and guide treatment, as well as keeping the door open for research opportunities. Gaining funding for this summer project has allowed me to focus on developing lab and research skills specific to my career plans, which has been so beneficial.

A live cell microscopy approach to decipher the role of the cytoskeleton in the mechanisms of Rab6-dependent membrane transport

Erin Shelton held a studentship with Professor Jeremy Simpson at University College Dublin

The research question for the project was based on exploring the motility of Rab6-dependent Golgi-to-ER tubules, with a focus on understanding the molecular machinery that dictate the directionality of the tubules. This project really stood out to me as this pathway is not completely understood, and I was interested in trying to add more information on this topic through my own experiments.

I gained many valuable new skills during this project and improved the skills I already had. The aspect I enjoyed the most about the research was the freedom to make my own decisions. I liked being able to apply my knowledge of cell biology to overcome any challenges I faced and come up with new ideas for the project. The most frustrating aspect of the project was the time wasted by failed experiments. However, as frustrating as it was in the moment, it was always a valuable learning experience.

The planned experiments worked for the most part, with only minor complications. The main issue was analysing the data to produce quantitative results. Live and fixed cell imaging of tubule interactions with both actin and tubulin revealed that tubules had little to no interaction with actin fibres, and instead were associated more closely with microtubules. Quantitative analysis showed that approximately 30% of a tubule was associated with the microtubules at a given time point. Motor protein validation using RNAi of BicD2, which links the cytoplasmic dynein motor complex to its cargo, showed a similar tubule formation profile to that of control cells, which could indicate that dynein is not involved in tubule transportation along microtubules and kinesin might be involved instead. In hindsight, one thing I would have done differently would be create a more robust method of tubule dynamics analysis. It is possible that the chosen analysis method was not sensitive enough and missed interactions that were visible in the fixed and live cell imaging.

This studentship has solidified my passion for research and has shown me that, despite the challenges and frustrations I faced during this project, I would love to continue research in the future. My goal is to pursue a PhD, and this studentship has been a valuable experience in improving my skills and preparing me for this career pathway.

Phenotypic analysis of late-stage Fbxo7 conditional knockout mice

Dan Harrison undertook a studentship with Professor Heike Laman at the University of Cambridge

The aim of this project was to examine the phenotypes that develop in late stage Fbxo7 conditional knockout mice, which serve as a model for Parkinson's disease (PD). Work up to 42 weeks had previously been published (Stott S. et al (2019) J. Pathol. 249:241-254) but there were mice who had been aged up to 69 weeks but not yet analysed, which were the basis for my project. This appealed to me as I had thoroughly enjoyed learning histopathology during the second year of my degree and was interested in exploring the methods utilised in tissue processing and how they could be applied in research.

Taking part in this project was a phenomenal experience and allowed me to experience what a career in research is like day to day. It was also an opportunity to expand my skillset in both the lab, by exploring new methods and techniques, as well as developing my academic writing abilities, as I subsequently wrote up my findings in the style of a research paper. This was also an opportunity to explore the mechanisms around PD in a greater depth than has been possible at any point previously in my education. While at times lab work and data analysis proved to be frustrating, especially when techniques did not work as they should, this is reflective of the real experiences of working in research and was negligible compared to the excitement of taking part in cutting-edge work.

The experiments themselves worked very well overall, with the only issues arising from one set of sections not taking up stain properly. This, while frustrating, was manageable as data could still be gathered although it would have been preferable to re-stain with fresh sections, this was unfortunately not possible due to time constraints. The overall results were very interesting and showed results consistent with the previously described phenotypes which mimic those seen in PD. However, two new phenotypes were observed in these sections at these later time points: a significant reduction in tyrosine hydroxylase positive dopaminergic neurons in the nucleus accumbens and the enlargement of the lateral ventricles. This could reflect pathological changes arising in the midbrain at later stages of PD, possibly helping to model the severe symptoms associated with late-stage PD.

The funding received from BSCB has been crucial for me to undertake this research placement because I would have otherwise been unable to support myself for the duration of the project. Following on from this project, I will be specialising in genetics in the final year of my degree. This project has proven to me that my passions lie in undertaking research and has given me a stronger sense of direction in the areas of research I would wish to explore later in a Masters and PhD. The skills I have developed during this project will also prove crucial to my future as they will be well employed in the project I will undertake in the final year of my degree.

Assessment of potential novel functional genes identified in medulloblastoma and neuroblastoma in cancer cell lines

Katie Elliott worked with Dr Gordon Strathdee at Newcastle University

My project at Newcastle University's Centre for Cancer focused on investigating the effects of siRNA knockdown of predicted candidate synthetic lethal genes on apoptosis and cell proliferation in medulloblastoma cell lines. I used two SHH cell lines (DAOY and UW228) and two Group 3 cell lines (D283 and MED8A), treated them with siRNAs targeting either the RRAGD gene (predicted synthetic lethal in group 3) or the CRIP2 gene (predicted synthetic lethal in SHH). My goal was to test whether selectively knocking down these genes would specifically kill cells only in the subtype in which the particular gene was predicted to be synthetically lethal.

The RRAGD knockdowns were highly successful in the SHH lines (98% reduction in expression in DAOY and 99% in UW228) but were less effective in D283 (59% reduction). However, XTT assays showed no significant impact on cell viability despite these knockdowns. Similarly, CRIP2 knockdowns in the SHH lines showed a strong reduction in expression (96% in DAOY and 97% in UW228), but again showed minimal effects on cell viability. If I had more time to investigate these issues further, I would prepare fresh stocks of XTT, use selectable markers, and compare results with those from a gene known to reliably induce cell death in these cell lines.

This placement provided me with invaluable experience of working independently in the lab, using laboratory equipment, following and interpreting protocols, and utilising scientific software. The opportunity to apply theories learnt at university to real life research scenarios allowed me to develop problem solving skills and gain confidence in my ability to contribute on ongoing scientific studies. Although the siRNAs failed to induce cancer cell death despite successful knockdowns, the trial-and-error process helped strengthen my resilience and inspired new strategies for further investigation. Overall, this placement has equipped me with essential laboratory and computational skills, and has prepared me for future challenges in the field of biomedical research.

Investigating the effect of hypoxia and HIF-1β depletion on the expression of ASF1 proteins

Fatima Naveed held a summer studentship with Professor Sonia Rocha, Institute of Systems, Molecular, and Integrative Biology at the University of Liverpool

I applied for the BSCB funding because I wanted to make the most of my long summer break, taking the opportunity to engage in laboratory work as well as developing my interpersonal and professional skills. The BSCB funding facilitated development of skills such as technical proficiency and adaptability while culturing and transfecting cells, using the hypoxia chamber and running Western blots.

The aim of my project was to investigate the effect of hypoxia and HIF-1β depletion on the expression of ASF1 proteins. ASF1 proteins are important histone chaperones, needed for chromatin assembly. To answer the research question, I cultured A549 cells and transfected them with HIF-1β siRNA. Then, I exposed the cells to hypoxia (1% oxygen) for 24 hours then carried out Western blots to analyse the impact on ASF1 proteins. I found that the ASF1A levels are consistently reduced in response to hypoxia treatment, although I found no change in ASF1B levels in response to hypoxia. However, I found ASF1B levels to go down in response to HIF-1β depletion in both normoxia and hypoxia. When a different HIF-1β siRNA was used during the transfection, ASF1B increases in response to HIF-1β depletion in normoxia and hypoxia. This indicates that further studies are needed to investigate HIF-dependency of hypoxia-induced repression of ASF1B.

I thoroughly enjoyed many aspects of the project such as learning how to effectively use the hypoxia chamber and culture and transfect A549 cells. This gave me invaluable experience to use laboratory equipment to carry out experiments effectively and skills such as aseptic technique and intricate steps of western blotting. My HIF-1β depletion experiments were unsuccessful in my first attempt which I found to be particularly frustrating. However, this challenge refined my problem-solving skills as I navigated the underlying cause of the experimental failure and repeated the experiment with necessary adjustments, ensuring effective transfection of HIF-1β siRNA in the remaining experiments.

The summer funding has made a difference to my career aspirations as I was initially unsure if I wanted to pursue a career in scientific research. However, the wonderful experience combined with the skills I have gained during this studentship reinforced my passion for scientific research as I gained a deeper understanding of the challenges and rewards of this field, motivating me to pursue a career in scientific research, particularly in cell signalling.

Identifying neuronal substrates for rhomboid intramembrane proteases

Stephanie Saunders joined Dr. Adam Grieve's lab at the University of Bristol

My project focused on the mammalian rhomboid intramembrane protease RHBDL2, which has previously been shown by the Grieve lab to cleave and downregulate Orai1, which was the first example of a multipass ion channel substrate for a rhomboid. The Grieve lab is interested in the control of cell signalling at the neuronal surface, and they hypothesised that RHBDL2 cleaves ion channels in neurons to control neuronal signalling. As RHBDL2 is expressed in neurons but its neuronal substrates are unknown, my project involved searching for new neuronal substrates by performing proteolysis assays on candidate transmembrane helices from different neuronal ion channels.

In the first part of the project, I cloned, purified and sequenced all the plasmids I needed. In this part of the project, I learned PCR, in-fusion

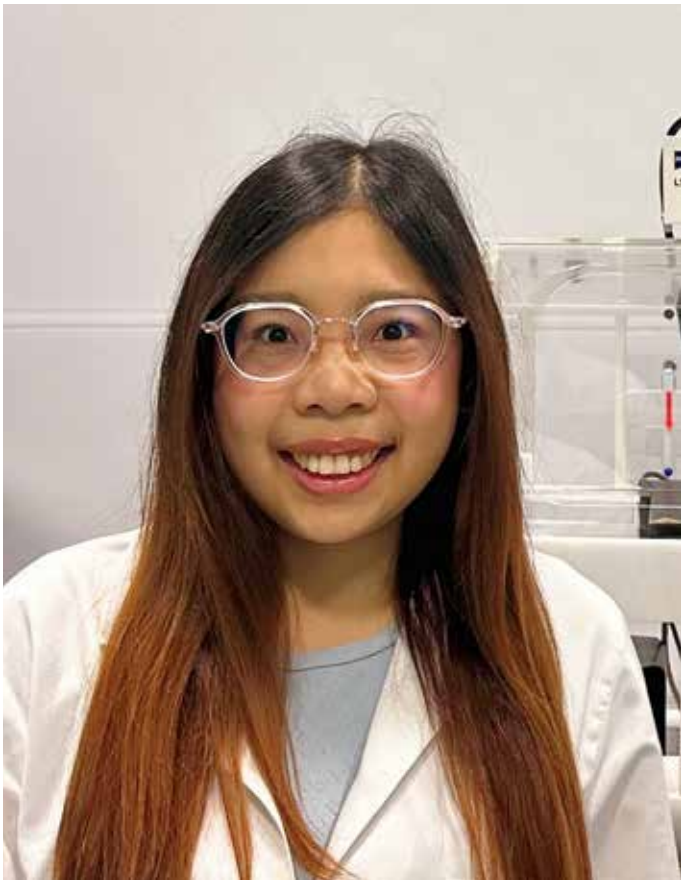
cloning, bacterial transformation and plating, picking colonies, and bacterial minipreps. I was also introduced to basic tissue culture, involving performing maintenance splits on a flask of HEK cells. This allowed me to get used to aseptic technique before moving on to the screen itself. The second part of my project involved performing the proteolysis assay. In this assay, alkaline phosphatase was fused onto the extracellular side of the transmembrane domains: if they are cleaved by RHBDL2, alkaline phosphatase is released into the media, where it can be detected via a colour change reaction. This was a four-day experiment. On the first day, I seeded HEK cells onto 24 well plates. On the second day, I transfected cells with the screen plasmids, along with either the DNA for wild type RHBDL2 or a mutant inactive form of RHBDL2 to act as the negative control. Orai1 was used as a positive control as it is a known substrate of RHBDL2. On the third day, the media on the cells was changed to accumulate the released alkaline phosphatase in an appropriate media for reading alkaline phosphatase activity. Finally, on the fourth day, the media was collected, and the cells were lysed. The amount of alkaline phosphatase in the media and the lysate was quantified to determine whether the candidate transmembrane helix was a RHBDL2 substrate.

By the end of the studentship, I managed to perform at least two replicate screens of the whole library I created; three replicates for some transmembrane domains. Excitingly, I discovered new substrates for RHBDL2! The results from the screen suggest that Orai1 is not the only ion channel substrate for RHBDL2, and that it is very specific as most transmembrane domains tested were uncleaved. The next step for the lab will be to confirm my findings with full-length endogenous ion channels, in a more physiological setting such as in primary neurons.

This project was a really fun experience: it was exciting learning new skills and experiencing work in a research group. Attending lab meetings, both within the Grieve lab and joint meetings including other labs in the School of Biochemistry, was also very interesting. I particularly enjoyed learning tissue culture, which I had never done before. I feel this project has given me a valuable insight into molecular cell biology research, and has also given me new technical skills which will be very useful in the remaining two years of my MSci degree. I would like to thank the BSCB for giving me the opportunity to do this project!

Links between impaired mitophagy and activation of the innate inflammatory pathway

Radasa Sathienkit held a studentship with Professor Michael Duchen at University College London



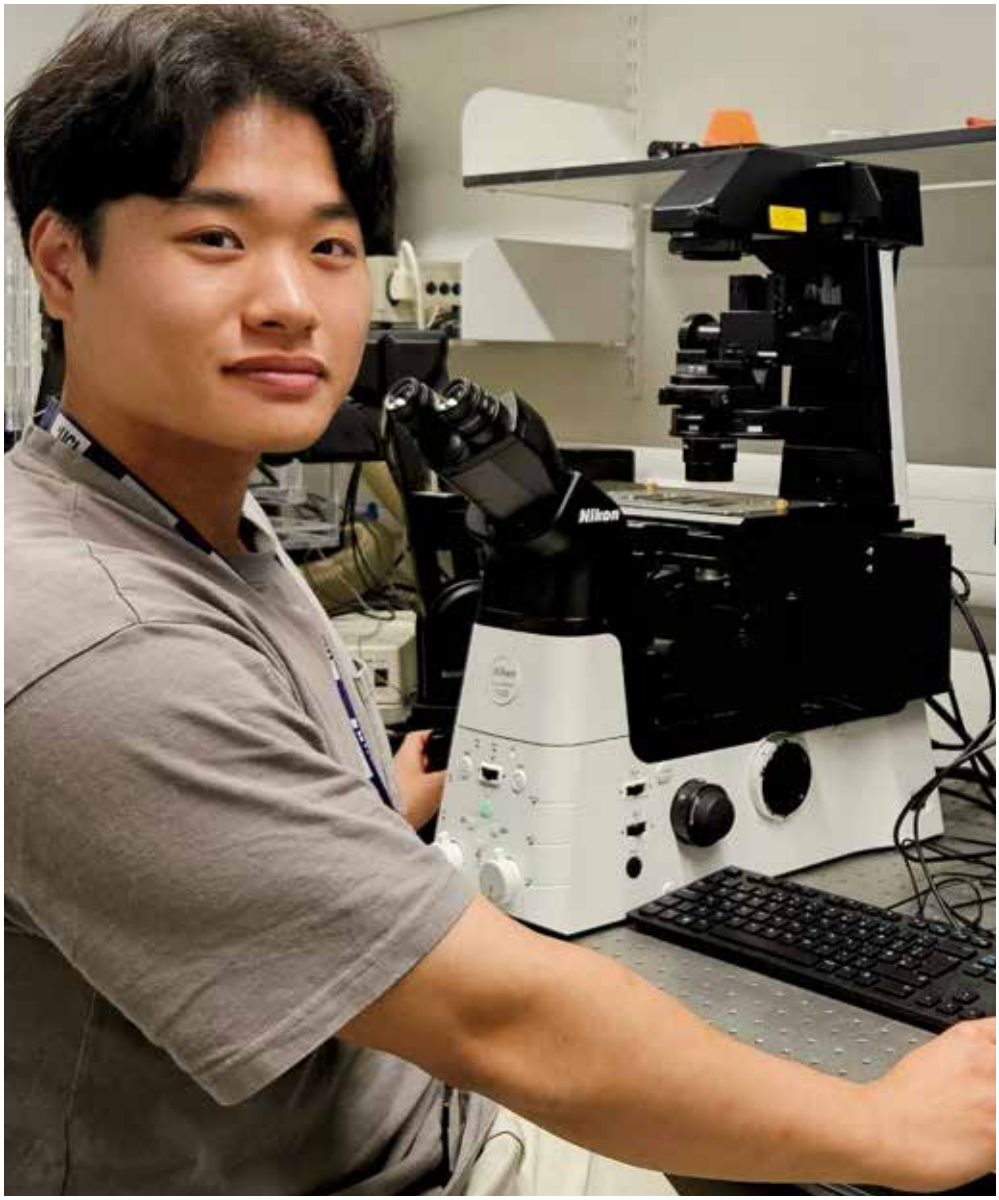
In my second year of university, I applied for a BSCB summer studentship to explore a potential career in academic research without the worry of financial constraints. The funding gave me the opportunity to fully dedicate myself to my research project. With a growing interest in cell biology and signaling pathways, I reached out to Professor Michael Duchen at University College London due to his expertise in mitochondrial biology and cellular signaling. Under his supervision, I carried out a research project focused on mitochondrial dysfunction associated with a severe multisystem disorder of childhood known as Vici syndrome, caused by mutations in the gene that encodes the EPG5 protein.

The aim of my project was to investigate the effects of next-generation mitochondrial permeability transition pore (mPTP) inhibitors on fibroblasts derived from patients with Vici Syndrome. The goal was to determine if the mPTP inhibitors could rescue and improve mitochondrial function in the affected cells, potentially offering a therapeutic approach for managing Vici syndrome and other mitochondrial diseases. The project involved culturing patient-derived fibroblasts, performing live-cell imaging using TMRM to monitor mitochondrial membrane potential, and running Seahorse respiratometry assays to measure cellular respiration. Although the results showed off-target effects of the inhibitors, I gained valuable experience in cell culture, live-cell imaging, and bioenergetics assays. This project provided an essential foundation for my future research career and introduced me to fundamental laboratory techniques.

I would like to thank Professor Michael Duchen and the BSCB for this opportunity. The experience not only allowed me to apply what I had learned during my university studies to a practical project but also helped me build the foundation for a career in research. Without this support, I would not have been able to complete the project or gain such valuable insights into academic research.

Investigating factors influencing chemotaxis efficiency through quantitative analysis of *Dictyostelium* cell movement

Naoto Sakurai worked in Professor Robert Insall's lab at University College London



During my second year at UCL, my long-standing passion for studying developmental biology deepened into a focused interest in cell motility and computational biology. Therefore, I reached out to Professor Robert Insall, drawn to his interdisciplinary approach that integrates computational and cell biology techniques. I believed his expertise would fulfil my research goals and aspirations to be trained in this field. When seeking funding for my project, I came across the BSCB summer studentship, which encourages students to pursue post-graduate research careers in cell biology. This opportunity aligned perfectly with my future scientific ambitions and hence was an ideal match.

The primary aim of my project was to quantitatively identify the parameters that determine chemotaxis efficiency by measuring and quantifying the migratory response of *Dictyostelium* cells to varied concentration gradients of cAMP. *Dictyostelium* is a robust model to study chemotaxis, as they become chemotactic to cAMP when starved. However, starving *Dictyostelium* cells also secrete cAMP and produce phosphodiesterase that degrades cAMP. This posed a great challenge to create a controlled, linear gradient to model and quantify the efficiency of chemotaxis solely based on external cues. To address this issue, we utilised a knockout cell line that had lost the adenylyl cyclase (ACA) that catalyses the synthesis of cAMP. As an attractant, we used a cAMP analog (Sp-cAMPS) that is more resistant to degradation, ensuring that the cells were responding exclusively to the gradient we prepared.

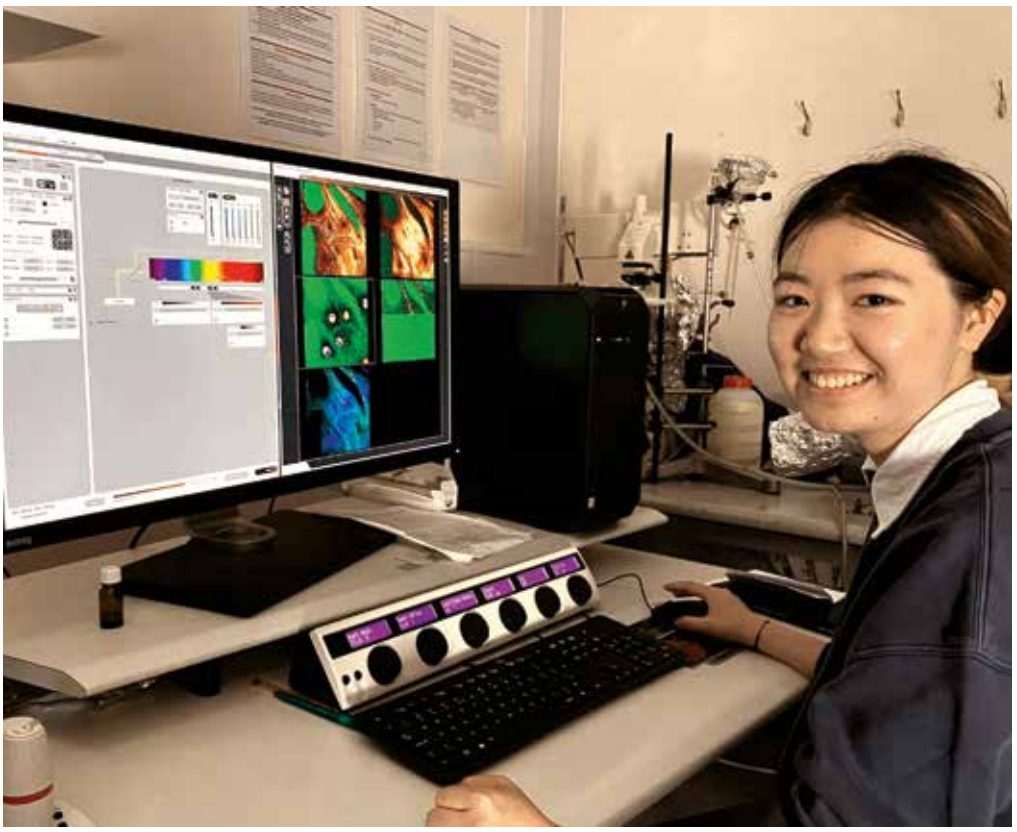
During this studentship, experimental success was never straightforward. Multiple optimisations were required including determining the ideal number of cells to seed, the assembly of the chemotaxis chamber, and finetuning the microscope's configurations to capture high-quality images. I overcame these challenges and succeeded in producing high quality time-lapse movies, so my troubleshooting ability and confidence in solving these issues has been greatly improved. The optimisations and methods I developed will also enhance the success of future experiments in the lab.

I identified the trends observed at higher concentrations of Sp-cAMPS coincided with theoretical predictions. Conversely, the trends at low levels of Sp-cAMPS contradicted the predictions, indicating a possible Sp-cAMPS degradation by cell-secreted phosphodiesterase. Given more time, I would introduce a phosphodiesterase inhibitor to determine if the predicted trend at low concentrations could be replicated.

These experiences have enhanced my understanding in a wide range of interdisciplinary research techniques and developed my confidence in performing them. Furthermore, it has solidified my passion for cell biology research, which resulted in me seeking a research placement in Japan to study tissue mechanics in kidney organogenesis. I am confident in the skills I have honed from this summer studentship, which has proved invaluable in shaping me as a young researcher and in pursuing my ambitions. I am very grateful to the Insall lab and the BSCB for making this opportunity possible and it will be one that I will never forget.

Arrhythmia in a dish – a model system for failing cardiomyocytes?

Bowen Zou pursued a summer studentship project with Professor Elisabeth Ehler at King's College London



I can clearly recall everything I saw when I looked into the lens of a confocal microscope at St Thomas hospital for the first time – the immunostained neonatal rat cardiomyocytes, with their myofibrils showing as green parallel stripes and the fine red line showing plakoglobin at intercalated disks, which, in my eyes, looked like stitches made be thin red threads, especially in the isoproterenol-treated arrhythmic cells, where they zig-zagged due to disorganised structure. This was the first task I undertook, throughout which I was guided by Professor Elisabeth Ehler. After that, I have done immunofluorescence staining with not only neonatal rat cells, but mouse heart sections and human heart sections, first with Elisabeth's help, then independently. The procedures were different, so as how their confocal images looked, but they looked fascinating to me all the same. To get familiar with the confocal microscope was not easy for me: the software, the buttons changing the exposures, the lasers…There are so many things to remember at the same time. But practice makes perfect: at the end of my sixth week into the project, I finally managed to finish my first completely independent confocal session without anybody reminding me of anything or helping me. I walked out of the room that day and felt like I have tamed an impossible beast. Eight weeks is not a short time, during which I have done the immunofluorescence staining for six times and western blots for so many times that I have given up counting them. I have experienced the frustration when after several days' work, I looked into the microscope only to find background but no real antibody signals, and I have also tasted the excitement when two distinctly different bands appeared on the blots on the computer screen. There are things I think I can do even in my dreams with my eyes closed, but there are also things I could never get the hang of it till the very end, such as cutting the nitrocellulose blot into different sections – my hand was still shaking out of nervousness when I held the razor for the last time in the lab.

I remember my first meeting with Elisabeth. It was set in the same week I sent out the email. On my phone screen she jokingly asked, 'So you are not scared off by the lab experience you already had?' 'No.' I smiled, 'And I hope to find out more.' And now, looking back, I think I can say I have done that. I have known what it would be like to do experiments in a lab, to wait for hours for incubations, to feel anxious and unsure until the final images appear on the screen before me, to sort out data and decide what will be the next step. And am I scared off now? I will have to say it is quite the contrary. My summer work is done now, and after some rest, I will have to start anew for my third-year project in the university, and then, look for a master's degree. The future still makes me feel intimidated sometimes, and sometimes I still feel unsure and out-of-control of things – after all one summer internship is not a magic pill to fix all. But because of it, I already feel more certain, like my feet are finally set on the firm earth of a future that I can partly foresee. To put it in one sentence, I would say, these eight weeks were not easy, but it is surely something that will influence me, and something I will not forget for a very, very long time.

Society Business

BSCB funding to support members throughout their careers

Full details of all schemes are on the BSCB website (https://bscb.org/).

The BSCB Honor Fell and Support Grants schemes continue to be popular and we ask that applications are uploaded at least 6 weeks ahead of time to allow for assessment and transfer of funds to successful applicants. We expect all successful applicants to acknowledge BSCB funding using our logos found on our website.

Honor Fell Travel Awards

Sponsored by the Company of Biologists, the Honor Fell Travel Awards provide financial support for BSCB members at the beginning of their research careers to attend meetings and courses. Applications are considered for any meeting or course relevant to cell biology.

BSCB members may apply for funds for both an online and in-person conference in the same calendar year (these together will count as 1 travel award only). The amount of the award depends on the location of the meeting or course. Awards will be up to £500 for travel within the UK (except for BSCB Spring Meeting for which the full registration and accommodation costs will be made), up to £700 for travel within European and up to £1000 for meetings and courses in the rest of the world.

The application form and complete information about the scheme are available at https://bscb.org/competitions-awardsgrants/travel-bursaries/honor-fell-company-of-biologists-travel-awards/

Company of Biologists Support Grants

These grants are available for independent group leaders/PIs with no current funds for travel to attend meetings, conferences, workshops, practical courses, PI laboratory management courses and courses to re-train. BSCB will also consider applications to attend virtual and online scientific meetings, conferences, workshops and courses.

For detailed information and to apply please see https://bscb.org/competitions-awardsgrants/cob-support-grants/

Childcare Award

The BSCB now accepts applications to provide financial help with childcare or care for dependents when the applicant is presenting at a scientific meeting. For example, these claims can be for:

- Home-based childcare/dependent care expenses incurred because of meeting attendance (funds may not be applied to normal ongoing expenses).
- Travel of a relative or other care provider to your home to care for your child(ren) or dependent while attending a meeting.
- Travel of a care provider to the meeting with you to care for your child(ren).

For more information and to apply please see: https://bscb.org/competitions-awardsgrants/travel-bursaries/childcare-award/

BSCB Imaging competition

THE BSCB runs an annual competition to shows the best of your research images.

Prizes: 1st Prize £200; 2nd Prize £100; 3rd Prize £50. Winners will be published on BSCB webpages and will also be used in the Magazine and other promotional material. Copyright will remain with the creator- if you do not agree that the images may be used as stated, you must state this on the entry form.

Submission: Entrants must supply their name, address, email address, and BSCB membership number on entry. Entries must be sent by email (10 x 11.96 cm 300 dpi) to stephen.robinson@quadram.ac.uk). Only one entry per person is allowed. The subject matter of competition entries is flexible but must reflect current research in cell biology.

Further details are at: https://bscb.org/competitions-awardsgrants/image-competition/image-competition-rules/

BSCB Science Writing Prize

The BSCB Science Writing Prize aims to encourage writing skill development in young researchers on topics of key relevance to cell biology. Entrants have either communicated their own research projects or science stories in the literature, in a clear and concise way aimed at a non-specialist audience, or written essays that were not be limited to research per se, but tackled a bioethical or science policy issue. The winner receives a prize of £500 and has their winning entry published in the BSCB magazine and online (both on the BSCB website and, subject to editorial acceptance, on the excellent www.lablit.com website).

Each year shortlisted entries are judged by an external expert. In previous years we have enlisted the kind help of Tim Radford (Writer and former Science Editor at The Guardian), Viv Parry (Science Writer and Columnist), Tania Hershman (Science writer, former science journalist and writer-in-residence at Bristol University), Dr. Jenny Rohn (a cell biologist at UCL, who is also a science writer, novelist, blogger, broadcaster, the editor of LabLit.com and the founder and chair of Science is Vital) and Barbara Melville (science writer, former writer-in-residence at the MRC Centre for Regenerative Medicine and board member with the Association of British Science Writers).

Remember: You must be a BSCB member to enter. The full rules and how to enter can be found at https://bscb.org/competitions-awardsgrants/science-writing-prize/

The British Society for Cell Biology

Statement of Financial Activities for the Year to 31 December 2023

	Unrestricted Funds	Restricted Funds	Total 2023	Unrestricted Funds	Restricted Funds	Total 2022
Income from:	£	£	£	£	£	£
Grants	35,000	40,000	75,000	35,000	–	35,000
Investments	255	-	255	453		453
Charitable activities						
Subscriptions	26,610	-	26,610	33,016	–	33,016
Other income	1,715	-	1,715	–	–	–
Total income	**63,580**	**40,000**	**103,580**	**68,469**	**–**	**68,469**
Expenditure on:						
Charitable activities						
Grants payable:						
CoB	-	47,500	47,500	7,964	42,854	50,818
Other grants	871	-	871	5,723	–	5,723
Studentships	34,320	-	34,320	35,055	–	35,055
Costs of meetings	2,707	-	2,707	2,899	–	2,899
Website expenses	1,873	-	1,873	5,816	–	5,816
Newsletter costs	4,734	-	4,734	4,033	–	4,033
Membership fulfilment services	34,198	-	34,198	25,654	–	25,654
Examiner's remuneration	3,516	-	3,516	3,119	–	3,119
Miscellaneous	354	-	354	323	–	323
Subscriptions	242	-	242	705	–	705
Insurance	575	-	575	1,641	–	1,641
Total expenditure	**83,390**	**47,500**	**130,890**	**92,932**	**42,854**	**135,786**
Net (expenditure)/income	(19,810)	(7,500)	(27,310)	(24,463)	(42,854)	(67,317)
Transfer between funds	–	–	–	–	–	–
Net movement in funds	(19,810)	(7,500)	(27,310)	(24,463)	(42,854)	(67,317)
Funds brought forward at 1 January 2021	228,052	35,522	263,574	252,515	78,376	330,891
Funds carried forward at 31 December 2023	**208,242**	**28,022**	**236,264**	**228,052**	**35,522**	**263,574**

BSCB Committee 2025

The Society is run by a Committee of unpaid volunteers elected by the Members. The Officers of the Society, who are all members of the Committee, are directly elected by the Members. The BSCB committee is comprised of office-holders (President, Secretary, Treasurer, Meetings Secretary, Membership Secretary, Magazine Editor, Award Co-ordinators and Web Co-ordinator) and up to 12 other ordinary members, including one PhD student representative, one postdoc representative and a schools liaison officer, who are coopted onto the committee.

The committee is always interested in hearing from cell biologists who wish to contribute to the society's activities. Members of the society are encouraged to nominate candidates for the committee or officers positions at any time. Formal nominations should be seconded by another member of the society. The committee is also happy to receive un-seconded informal nominations. Nominations should be sent to the BSCB Secretary.

The committee generally meets twice a year, at the spring meeting and in the autumn in London. Additional meetings are arranged from time to time. Items for consideration by the committee should be submitted to the Secretary prior to the meetings. The BSCB has charitable status (registered charity no. 265816). The BSCB AGM is held every year at the Spring Meeting.

President: Professor Laura Machesky
Department of Biochemistry
University of Cambridge
Sanger Building, Old Addenbroke's Site
Tennis Court Road
Cambridge, CB2 1GA
lmm202@cam.ac.uk

Secretary: Dr Simon Allison
School of Applied Sciences
University of Huddersfield
Queensgate
Huddersfield HD1 3DH
secretary@bscb.org
S.Allison@hud.ac.uk

Treasurer: Professor Giampietro Schiavo
UCL-Institute of Neurology
Queen Square House
Queen Square
London WC1N 3BG
giampietro.schiavo@ucl.ac.uk

Meetings Secretary:
Professor Viji M. Draviam
Center for Cell Dynamics
School of Biological and Chemical Sciences
Queen Mary University of London
v.draviam@qmul.ac.uk

Honor Fell/COB Coordinators: Dr Daniel Booth and Dr Tom MacVicar
Dr Daniel Booth
Biodiscovery Institute-Room C208
School of Medicine
University of Nottingham
Science Road
Nottingham NG7 2RD
Daniel.Booth@nottingham.ac.uk

Dr Tom MacVicar
Cancer Research UK Scotland Institute
Garscube Estate
Switchback Road
Bearsden
Glasgow G61 1BD
Thomas.MacVicar@glasgow.ac.uk

Membership Secretary: Dr Nathalie Signoret
Department of Biology and Hull York Medical School
University of York
Wentworth Way
York YO10 5DD
nathalie.signoret@york.ac.uk

Science Advocacy Officer: Dr Darius Koester
Centre for Mechanochemical Cell Biology
Warwick Medical School
Division of Biomedical Sciences
Coventry CV4 7AL
d.koester@warwick.ac.uk

Magazine Editors: Dr Tom Nightingale and Professor Ciaran Morrison
Dr Tom Nightingale
Centre for Microvascular Research
William Harvey Research Institute
Barts and The London School of Medicine and Dentistry, Queen Mary University of London
London EC1M 6BQ
t.nightingale@qmul.ac.uk

Professor Ciaran Morrison
Centre for Chromosome Biology
University of Galway, Biomedical Sciences
Dangan, Galway H91 W2TY, Ireland
ciaran.morrison@universityofgalway.ie

Web and Social Media Officers: Dr Helen Matthews and Dr Stephen Robinson
Dr Helen Matthews
School of Biosciences
University of Sheffield
Florey Building
Western Bank
Sheffield S10 2TN
h.k.matthews@sheffield.ac.uk

Dr Stephen Robinson
Quadram Institute Bioscience
Norwich Research Park
Norwich NR4 7AU
stephen.robinson@quadram.ac.uk

Postdoc Representative: Dr Aymen al-Rawi
Cell Biology Division
MRC Laboratory of Molecular Biology
Francis Crick Avenue
Cambridge CB2 0QH
aalrawi@mrc-lmb.cam.ac.uk

PhD Student Representative: Harriet Smith
The Francis Crick Institute
1 Midland Road
London NW1 1AT
harriet.smith@crick.ac.uk

Summer Studentship Coordinator: Professor Liz Miller
Division of Molecular Cell and Developmental Biology
School of Life Sciences
University of Dundee
emiller003@dundee.ac.uk

Irish Area Representative: Professor Ciaran Morrison

Dr James Brown
Department of Biological Sciences
University of Limerick,
Limerick V94 T9PX
Ireland
James.Brown@ul.ie

Professor Victoria Cowling
Cancer Research UK Scotland Institute
School of Cancer Sciences
University of Glasgow
Glasgow G61 1BD
Victoria.Cowling@glasgow.ac.uk

Dr Mattea Finelli
University of Nottingham
Biodiscovery Institute
University Park,
Nottingham NG7 2RD
Mattea.Finelli@nottingham.ac.uk

Emily Lucas
School of Biological Sciences
University of Southampton
E.R.Lucas@soton.ac.uk

Professor Tobias Zech
Institute of Translational Medicine
Cellular and Molecular Physiology
University of Liverpool
Liverpool L69 3BX
T.Zech@liverpool.ac.uk

BSCB Ambassadors 2025

The BSCB Ambassadors – the society's advocates in the UK cell biology community – should be your first point of call for information about what the society can do for you and also how you can get involved. They should also be the people readily available to ask about sponsoring you for membership. Anyone who wishes to volunteer to become a BSCB ambassador at any Institutes not represented in the list below please contact the BSCB.

Babraham Institute	Ian McGough	ian.mcgough@babraham.ac.uk
Barts Cancer Institute, Queen Mary University London	Susana Godhino	s.godinho@qmul.ac.uk
Bournemouth University	Paul Hartley	phartley@bournemouth.ac.uk
Cardiff University	Catherine Hogan	hoganc@cardiff.ac.uk
CRUK Manchester Research Institute	Iain Hagan	iain.hagan@manchester.ac.uk
CRUK Scotland Institute (formerly Beatson Institute)	Vicky Cowling	victoria.cowling@glasgow.ac.uk
European Bioinformatics Institute (EBI) Cambridge	Sheriff Rahuman	sheriff@ebi.ac.uk
Gurdon Institute	Emma Rawlins	e.rawlins@gurdon.cam.ac.uk
Imperial College London	Alexis Barr	a.barr@lms.mrc.ac.uk
Keele University	Stuart Jenkins	s.i.jenkins@keele.ac.uk
King's College London	Simon Hughes	simon.hughes@kcl.ac.uk
King's College London	Claire Wells	claire.wells@kcl.ac.uk
MRC Laboratory of Molecular Biology	Liz Miller	emiller@mrc-lmb.cam.ac.uk
Newcastle University	Jonathan Higgins	jonathan.higgins@newcastle.ac.uk
Nottingham Trent University	Mark Turner	mark.turner@ntu.ac.uk
Plymouth University	Claudia Barros	claudia.barros@plymouth.ac.uk
Queen Mary University of London	Tom Nightingale	t.nightingale@qmul.ac.uk
Sheffield Hallam	Nik Georgopoulos	n.georgopoulos@shu.ac.uk
St George's University of London	Ferran Valderrama	fvalderr@sgul.ac.uk
Swansea University Medical School	James Murray	j.t.murray@swansea.ac.uk
The Royal Veterinary College	Steve Allen	sallen@rvc.ac.uk
University College Dublin	Jeremy Simpson	jeremy.simpson@ucd.ie
University College London	Chris Stefan	c.stefan@ucl.ac.uk
University of Aberdeen	Riko Hatakeyama	riko.hatakeyama@abdn.ac.uk
University of Birmingham	Vicki Smith	v.e.Smith@bham.ac.uk
University of Bristol	Mark Dodding	mark.dodding@bristol.ac.uk
University of Bristol	Helen Weavers	helen.weavers@bristol.ac.uk
University of Cambridge, Institute for Cancer Research	Jon Pines	jon.pines@icr.ac.uk
University of Dundee	Carine De Marcos Lousa	cdemarcoslousa001@dundee.ac.uk
University of Dundee	Inke Nathke	i.s.nathke@dundee.ac.uk
University of Dundee (School of Life Science)	David Murray	d.h.murray@dundee.ac.uk
University of Durham	Tim Davies	timothy.r.davies@durham.ac.uk
University of East Anglia	Stephen Robinson	stephen.robinson@uea.ac.uk
University of East Anglia	Grant Wheeler	grant.wheeler@uea.ac.uk
University of Edinburgh	Ian Chambers	i.chambers@ed.ac.uk
University of Edinburgh (School of Biosciences)	Julie Welburn	julie.welburn@ed.ac.uk
University of Exeter (Biosciences)	Joseph Costello	j.costello@exeter.ac.uk
University of Exeter (Medical School)	Asami Oguro-Ando	a.oguro-ando@exeter.ac.uk
University of Galway	Ciaran Morrison	ciaran.morrison@universityofgalway.ie
University of Huddersfield	Simon Allison	s.allison@hud.ac.uk
University of Hull	Francisco Rivero	francisco.rivero@hyms.ac.uk
University of Kent	Fani Papagiannouli	f.papagiannouli-227@kent.ac.uk
University of Lancaster	Nikki Copeland	n.copeland@lancaster.ac.uk
University of Leeds	Takashi Ochi	t.ochi@leeds.ac.uk
University of Leeds	Ruth Hughes	r.e.hughes@leeds.ac.uk
University of Leicester	Rob Mahen	rm722@leicester.ac.uk
University of Liverpool	Sylvie Urbe	urbe@liverpool.ac.uk
University of Manchester	Martin Lowe	martin.p.lowe@manchester.ac.uk
University of Nottingham	Alistair Hume	alistair.hume@nottingham.ac.uk
University of Nottingham	Bill Wickstead	bill.wickstead@nottingham.ac.uk
University of Oxford	Jordan Raff	jordan.raff@path.ox.ac.uk
University of Reading	Jonathan Gibbins	j.m.gibbins@reading.ac.uk
University of Roehampton	Yolanda Calle-Patino	yolanda.calle-patino@roehampton.ac.uk
University of Sheffield	Andy Grierson	a.j.grierson@sheffield.ac.uk
University of Sheffield	Jason King	jason.king@sheffield.ac.uk
University of Sheffield	Liz Smythe	e.smythe@sheffield.ac.uk
University of Southampton	David Tumbarello	d.a.tumbarello@soton.ac.uk
University of St Andrews	Judith Sleeman	jes14@st-andrews.ac.uk
University of the West of England (UWE Bristol)	Alexander Greenhough	alexander.greenhough@uwe.ac.uk
University of Warwick	Darius Koester	d.koester@warwick.ac.uk
University of York	Chris MacDonald	chris.macdonald@york.ac.uk

The BSCB Magazine is published once a year in winter in hard copy. News is updated frequently through our website and BSCB Twitter feed. Follow us at @Official_BSCB

Submission

If you have an idea for an article please e-mail the editors a brief outline first. It is preferable to send all articles, reports and images by e-mail (though alternatives can be arranged after contacting the editor). Attachments for text can be in txt, rtf or doc format. Please send images as 300dpi JPEG, TIFF or PSD files. Submission of articles and images should be made to Dr Tom Nightingale (t.nightingale@qmul.ac.uk) and/ or to Professor Ciaran Morrison (ciaran.morrison@universityofgalway.ie).

Advertising Information

Single advertisement: Back cover £600
Inside front cover £450 colour/ £300 b/w
Full inside page £240
1/2 Inside page £120
1/4 Inside page £60

Advertisements can by supplied on CD or by email. Please send as JPG, TIF or PSD at 300dpi, or as PDF (with fonts embedded). Page size A4: 210x297mm. There is no charge to advertise a scientific or educational meeting. Please contact the editor with details of any meeting you wish to advertise. For more information contact Dr Tom Nightingale (t.nightingale@qmul.ac.uk) and/ or Professor Ciaran Morrison (ciaran.morrison@universityofgalway.ie).

BSCB Subscription information

The online application form can be found at www.bscb.org. The annual fees are:

BSCB Individual Full £45.
BSCB Individual direct debit £35.
BSCB Student £50 (3-year membership) or £70 (4-year membership).

Membership runs from January – December. If you join after October 31st you will not be asked to renew until the January after next. Eligibility for some funding schemes requires 1 year membership or 1 membership renewal – whichever comes sooner.

Membership enquiries

To become a BSCB member please go to: https://bscb.org/members/become-a-member/

If any of your personal details have changed please login to the BSCB members area online and update your information. bscb.org/members/become-a-member/

Please email HG3 to report any difficulties with the membership page: bscb@hg3.co.uk

Invoices

Send to: Professor Giampietro Schiavo, UCL-Institute of Neurology, Queen Square House, Queen Square, London WC1N 3BG
giampietro.schiavo@ucl.ac.uk

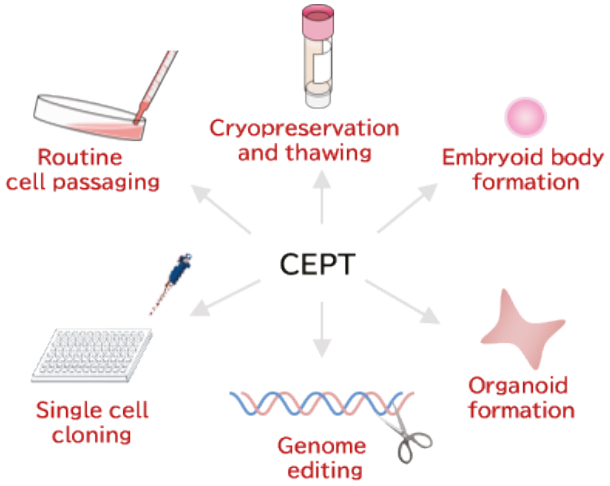
Journals

BSCB members are entitled to a range of discounts from journal and book publishers. Members should check www.bscb.org for the latest information.

CEPT | The Perfect Cocktail for Every Application

CEPT is a ready to use solution that combines the benefits of a selection of small molecules. This solution has been identified to significantly improve the viability of human pluripotent stem cells (hPSCs). CEPT has shown to maintain a normal circularity of nuclei in iPSC cell lines and when differentiated iPSCs such as cardiomyocytes, hepatocytes and motor neurons are cryopreserved with CEPT, a superior increase in cell survival is seen when compared to other small molecules. This is achieved through the blocking stress mechanisms which compromise the cell structure. Similarly, when human embryonic stem cells (hESCs) were plated with CEPT, a mass of embryoid bodies were formed with minimal cellular debris present.[1]

CEPT's cost effective price and unique characteristics have provided an advancement in various stem cell applications represented below.



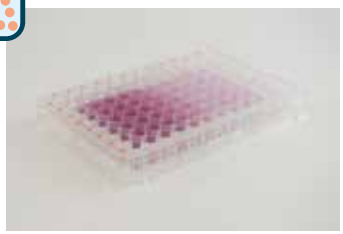
Whether cell adhesion is required or not, our surface treated microplates by Brand® are perfect for your stem cell applications. These sterile plates are available in a choice of well formats, shapes and colours.

Each plate is manufactured to BIO-CERT Quality Levels – Cleanroom manufacture to ISO 14644-1. Free of DNA (human and bacterial), RNase, DNase, and pyrogens. These plates conform with ISO 11137 and are free of cytotoxic substances according to ISO 10993-5.

For more information about CEPT and to purchase visit: **alphalabs.co.uk/CEPT**

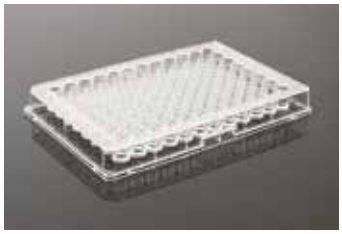
Specialised Surfaces for Your Cell Culture Requirements

Cell Adhesion



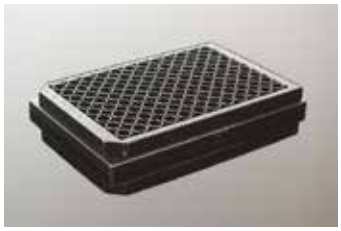
inertGrade™

Plates optimised for reduced cell adhesion and protein adsorption, minimsing cellular activation



cellGrade™

Surface treated plates with freely accessible carboxyl and hydroxyl groups that enable easy cell adhesion.



cellGrade plus™

Along with freely accessible carboxyl and hydroxyl group, these plates are equipped with free amino groups, to promote faster cell adhesion.

cellGrade premium™

Plates with a poly-D-lysine-equivalent surface, optimal for the serum free cultivation of cells.

Scan the QR Code to view the microplates brochure here

To view our full range of microplates and to purchase visit: **alphalabs.co.uk/microplates**