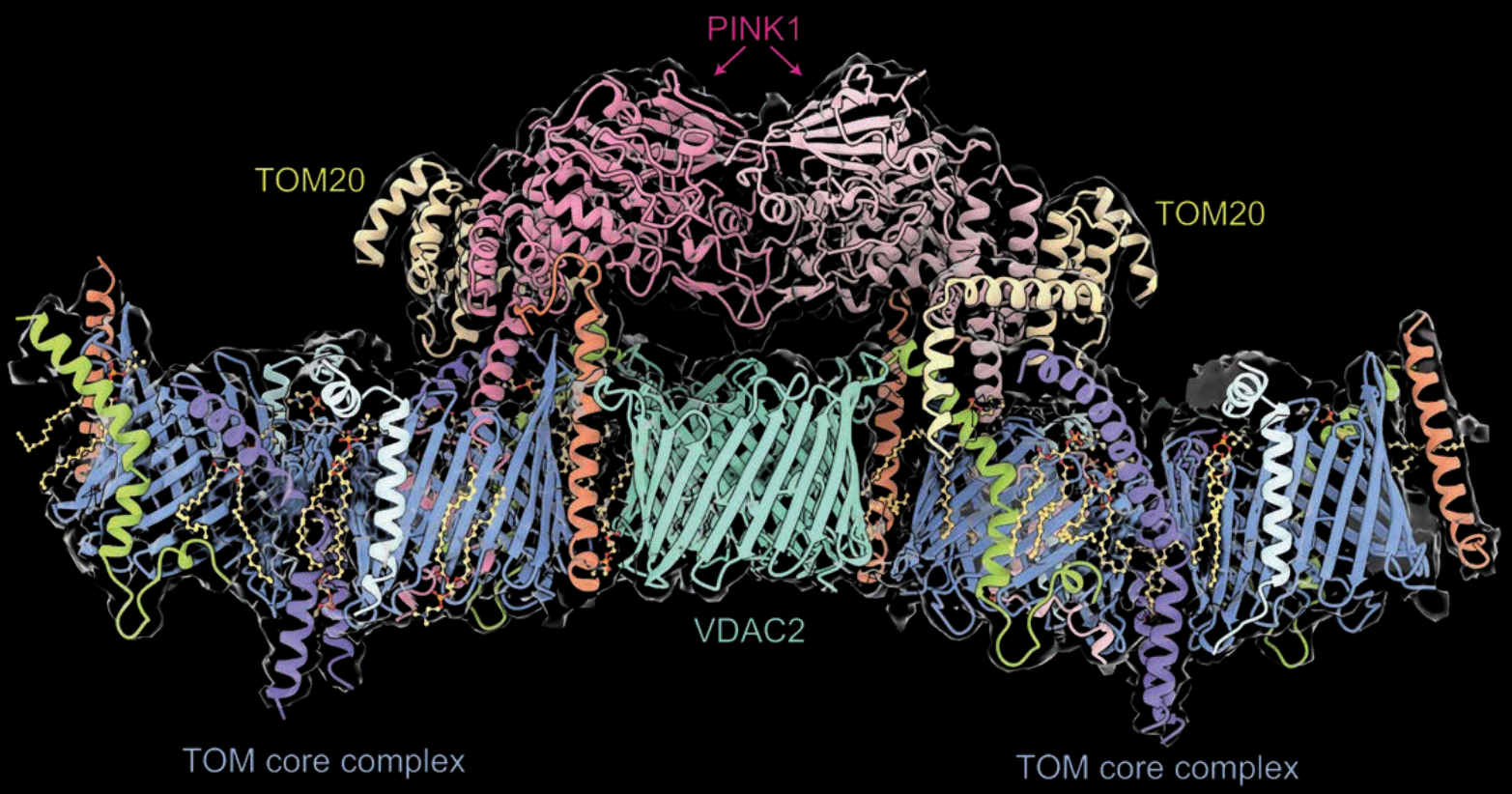
IUBMB NEWSLETTER

ISSUE NO. 19 • JUNE 2025



Structure of dimerised human PINK1, docked within a mitochondrial translocase array, comprising of two copies of the TOM complex and a central VDAC2 dimer (DOI: 10.1126/science.adu6445) Figure Courtesy of Sylvie Callegari

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Message from the President

Prof. Dario Alessi, President, IUBMB

Dear Colleagues,

It has been a tremendous privilege to serve as President of the IUBMB over the past eight months, a period during which we have continued to strengthen global engagement, promoted interdisciplinary collaboration, and reflected on the evolving opportunities and challenges facing the molecular biosciences.

A particular highlight was attending the 8th Congress of the Federation of African Societies for Biochemistry and Molecular Biology (FASBMB), hosted by Biochemistry and Biotechnology Professionals Society of Kenya (BBPSK) in Nairobi. The theme of the congress was *"Enhancing Interdisciplinary Partnerships in Biochemistry and Biotechnology Across Africa"* and emphasised the importance of collaboration across biochemistry, biotechnology, data science, AI, and public health to address critical issues including food security, disease, and innovation. The congress highlighted a wealth of impactful research being conducted across Africa aimed at advancing health, agriculture, and economic well-being. I was honoured to deliver a lecture and meet a dynamic cohort of African researchers, many of them early-career scientists conducting pioneering work in genome editing, biopesticide development, and synthetic biology. The congress affirmed the increasing prominence of Africa as a hub for molecular bioscience research.

Delegates at the 8th FASBMB Congress held in Nairobi, Kenya. From left to right: Prof. Edward Nguu, Patron of BBPSK; Dr. Patrick Okanya, Chairman, BBPSK; Prof. Abidemi Paul Kappo, Vice President, FASBMB; Dr. Nyarai D. Soko, Meetings Counsellor, FASBMB; Prof. Dario Alessi, President, IUBMB; Prof. Iqbal Parker, Secretary General, IUBMB; and Dr. Clarence Mangera, Committee Member, FASBMB.

Message from the President

Delegates at the 8th FASBMB Congress, Nairobi, Kenya | October 28–30, 2024

We are also taking important steps to advance scientific standards globally. One of the IUBMB's core missions is to foster effective scientific communication through a precise and logical vocabulary. For over 50 years, the IUBMB Nomenclature Committee has led efforts to standardise terminology across biochemistry and molecular biology. In 2025, we are revitalising the committee's structure to align with contemporary scientific practice. We are now inviting the community to propose new topic areas for nomenclature subcommittees and to nominate chairs and members. Subcommittee chairs will sit on a parent Nomenclature Committee, ensuring representation across career stage, geography, and gender. Applications to participate on the nomination committees or suggest a subcommittee proposal are due by June 30, 2025. These should include a CV, cover letter, and (if applicable) a subcommittee proposal (max. 3 pages). Please direct queries and submissions to Prof. James Murphy at jamesm@wehi.edu.au. Further details can be found on the IUBMB website: https://iubmb.org/about/committees/nomenclature/.

Several broader challenges also demand attention, among them, unstable research funding in some countries, the rapid integration of AI without fully developed ethical frameworks, and persistent gaps in interdisciplinary training. Yet despite these challenges we are also witnessing remarkable breakthroughs: AI-based structural prediction tools like AlphaFold3 promise to accelerate our understanding of biology and drug development dramatically; RNA-based therapies are expanding; and synthetic biology holds great promise to enable sustainable production of advanced materials and new medicines. A striking example of progress in structural biology relevant to neurodegeneration is featured on the cover of this newsletter. In a major advance, Callegari et al. (2024, DOI: 10.1126/science.adu6445) resolved the cryo-EM structure of human PINK1 bound to the mitochondrial translocase of the outer membrane (TOM) and voltage-dependent anion channels (VDACs). This work elucidates how PINK1, a ubiquitin kinase mutated in early-onset Parkinson's disease, is stabilized on damaged mitochondria. The study reveals how oxidation of PINK1

Message from the President

and its interactions with TOM and VDAC complexes form a preactive dimer ready to initiate mitophagy, offering critical insight into mitochondrial quality control and offer new avenues for therapeutic intervention.

I also take this opportunity to encourage you to consider submitting your research to one of the IUBMB-supported journals. Supporting these journals not only advances your field of research but also contributes to sustain the educational and fellowship programs that the IUBMB can provide globally. We like to think of this as ethical publishing. As part of our long-standing partnership with Trends in Biochemical Sciences (TIBS), founded by IUBMB Past President Bill Whelan, we are preparing to celebrate its 50th anniversary in 2026. Special issues will include "Scientific Life" articles reflecting the diversity and priorities of our global community. If you have suggestions of articles and/or would like to contribute to these celebrations, please do get in touch with Sannie Culbertson the Editor of TIBS (sculbertson@cell.com).

The IUBMB Trainee Initiative (TI), established in 2022, continues to expand, with its Leadership Committee now at its largest size to date, 19 enthusiastic members representing all four regional organizations (FEBS, FASBMB, FAOBMB, and PABMB). In 2025, the TI has already hosted two successful webinars organized by the PABMB and FEBS regions, drawing broad, international audiences and addressing diverse topics both within and beyond academia. Additional webinars led by the FAOBMB and FASBMB regions are planned for later this year. The TI is also working to launch a global resource database in July, aimed at providing trainees with information on international and national funding opportunities, and invites community contributions to help grow this platform. Looking ahead, the TI is organizing a special symposium featuring past IUBMB award recipients who will share insights into the application process and the research these awards have enabled. If you're interested in learning more about the IUBMB Trainee Initiative and how to get involved, we invite you to explore the TI website: https://iubmb.org/about/committees/iubmb-trainee-initiative/.

– Joan Guinovart, who served as Treasurer, President and Past President of the IUBMB, pictured in Barceloneta, April 2022.

I would also like to acknowledge the recent passing of Professor Joan Guinovart (1947–2025), an extraordinary biochemist and former IUBMB Treasurer, President, and Past President (2009–2021). Joan's visionary leadership, dedication to global education, and commitment to scientific excellence left a lasting legacy. Tributes to Joan have so far been published by Israel Pecht (https://network.febs.org/posts/joan-guinovart-a-colleague-friend-and-cultural-link), by Jordi and Matthew S. Gentry in TIBS (https://www.cell.com/trends/biochemical-sciences/fulltext/S0968-0004(25)00055-6), and in SEBBM by Gregory A. Petsko (https://sebbm.es/revista/dosier/recuerdos-de-joan/). We are planning a special IUBMB symposium in his honour to celebrate his contributions to research, education, and mentorship in glycogen metabolism and disease. Below is a photo of Joan that I took after memorable lunch on Sunday April 24, 2022, at the Barcelona Yacht Club, where he spoke passionately about the critical role that science plays in society and the importance of the IUBMB's mission.

Message from the President

The IUBMB continues to support the global biosciences community through a range of fellowships, lectureships, and educational initiatives. Wood-Whelan and Travel Fellowships are currently under review, while selections for PROBio-Africa and PROLAB are underway. Evaluation for new PROBio-LatAm and our Novonesis Fellowships is pending. Recent awardees include plenary lectureships to our past President Alexandra Newton as well as Francisco J. Quintana, and Luke O'Neill, and a Jubilee Award Lecture to Anne Bertolotti. The next major application deadline for IUBMB activities is June 15th, 2025. Please check the IUBMB homepage (https://iubmb.org/) for full details and updates and also refer to this newsletter for previously awarded programs and upcoming events.

To stay up to date with IUBMB activities, we encourage you to follow our LinkedIn page (https://www.linkedin.com/in/the-iubmb/), where we regularly share updates on funding deadlines, fellowship and travel opportunities, and highlight exciting new science communication content, such as our recent post on "Mitochondrial Transfer between Cells." Recordings of all our webinars and events are also freely available on our YouTube channel (https://www.youtube.com/@iubmb), including the popular session on "Career Paths in Science" (https://www.youtube.com/watch?v=Javp-c6oeOY). In addition, our communications team is developing a new educational course focused on promoting sustainability in science, reflecting our commitment to global scientific responsibility and training.

Looking ahead, we are exploring how the IUBMB can further support regional publishing, expand online training, and offer virtual internships to improve access to scientific careers, particularly in the Global South. I am deeply grateful to all our committee members, regional organisations, and staff for their continued dedication. As always, I welcome your input as we build the next chapter of the IUBMB together. Please do get in touch with me (d.r.alessi@dundee.ac.uk) regarding any ideas and suggestions that you may have.

Best wishes,

Dario Alessi
President, IUBMB

Message from our Communications Officer

Continuing to Innovate, Continuing to Grow

A Personal Message

Patrick Penndorf

The last six months have been truly exciting.

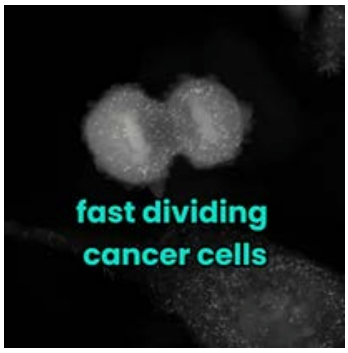
As the Communications Officer, it is my goal to bring you the most interesting and exciting content from the world of science.

I guess, it worked — because we were able to celebrate successes in several areas:

Taking over Social Media

Can you pour Gatorade into your cell culture medium? And why do the speckles on your banana fluoresce? You can find the answer to all these questions on LinkedIn, Instagram, X, Bluesky, and YouTube.

People truly enjoy our Science Communication. By January 2025, we had more than tripled our social media following, collecting over 10 million views across platforms.



Still, we decided to keep experimenting. In some of our pieces, we switched to a slightly longer format, telling stories in more detail.

The result? Another 3 million clicks and significant growth on our YouTube channel.

Will we take the step into long-form content on YouTube? It's tempting — but only time will tell.

Message from our Communications Officer

Continuing to Innovate, Continuing to Grow

Helping Students Find Their Way

Thanks to the outstanding support of the IUBMB Trainee Initiative — and I especially want to highlight the efforts of Simon, Rocío, Julia, and Sophie — we were able to pull off something few manage to do.

We organized a webinar featuring four scientists who successfully transitioned into industry — from R&D to advisory and editorial roles. We received more than 800 registrations for the event — enough to upgrade our Zoom account to accommodate the high demand.

The event itself was a great success, and we received a lot of positive feedback from participants. Of course, we hear the call — and we'll continue to support career development for both junior and senior scientists.

Giving you a Monthly Update

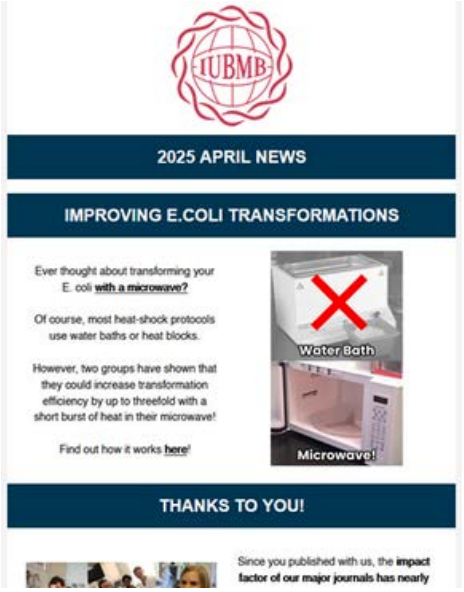
Part of our communications work includes taking over the Monthly Newsletter — our way of bringing you the latest from research, exciting opportunities, and updates on our scholarships and fellowships.

We've welcomed many new subscribers, and we're happy to see increases in our open and click rates.

Sure, we all get countless emails every day, therefore, it's exciting to see that a couple of thousand people each month take the time to read what we share.

And the content we post in our newsletter reaches more than 100,000 eyes on LinkedIn!

With all that said, let me thank you for your support — and I give you my word: you will hear, see, and read from me!



IUBMB Trainee Initiative

The 2025 IUBMB Trainee Initiative Leadership Committee

Our current 2025 leadership committee is the largest group of trainees that we've had since the start of the Trainee Initiative in 2022! Each member belongs to one of the four regions: FEBS (Europe), FASBMB (Africa), FAOBMB (Asian and Oceania), or PABMB (North and South America), with certain members having specific regional or social media roles.

We are supported by the IUBMB and its Executive Committee, currently led by Dr. Dario Alessi and Dr. Alexandra Newton as the TI Advisor, and Charysse Austria as the TI Secretariat.

The TI currently focuses on holding region-specific events to address academic and post-academia topics in Biochemistry. We also provide a variety of resources for students and post-doctoral fellows which helps support growth of the international scientific community. Read more about us here: https://iubmb.org/about/committees/iubmb-trainee-initiative/

If you are looking to contribute to the IUBMB network and the research ecosystem, take the opportunity to reach out to us here [https://docs.google.com/forms/d/e/1FAIpQLSeQ7Ssj2cGCdHWqgTWAlTFUohuPOrA3qiALW-GMl_HqTsI2rw/viewform] or via email/social media to join our leadership committee in 2026!

IUBMB Trainee Initiative

Explore the Awards, Fellowships and Opportunities Database!

The IUBMB Trainee Initiative has created an opportunities database to help trainees in biochemistry and molecular biology discover valuable awards, fellowships, and funding opportunities to fuel their academic and professional growth. Whether you're an undergraduate, graduate student, or early-career researcher, our database is constantly growing and strives to have something for everyone. Stay tuned to view our current opportunities.

We also encourage the community to contribute—if you know of an award or fellowship that isn't listed, please add it to help expand this valuable resource for everyone. Together, we can build a more connected and well-supported research community for trainees!

IUBMB Trainee Initiative

an Update on the IUBMB TI Quarterly Events

Alternative Career Paths in Life Sciences

Hosted by the 2025 FEBS Region: Patrick Penndorf, Rocío Núñez-Vazquez, Sophie Strich, Simon Tang, Julia Meier

On April 10th 2025, the European section of the **IUBMB Trainee Initiative** successfully hosted the international webinar **"Alternative Career Paths in Science"**, an event designed to support early-career scientists in exploring diverse professional opportunities beyond traditional academic tracks.

The event addressed an increasingly important topic: the reality that only a small fraction of PhD graduates remain in academia long-term. Recognizing the need for broader career guidance, the webinar showcased alternative paths where scientific training can lead to meaningful, impactful careers. Four outstanding panelists shared their personal journeys and insights from careers in science policy, pharmaceutical research and development, scientific communication, and publishing.

Each speaker provided an overview of their daily work, the skills critical to their success, and how they transitioned beyond academia. Their diverse experiences offered attendees valuable perspectives on how scientists can continue contributing to the research community and society in different ways. The webinar concluded with an interactive Q&A session, where participants could directly engage with the panelists on practical career-related questions.

The response to the event clearly demonstrated the global need for this kind of career support:

- **More than 850 participants registered,** representing countries across Europe, North America, South America, Asia, Africa, and Oceania.
- Attendance included a dynamic mix of students, postdoctoral researchers, and early-career scientists.

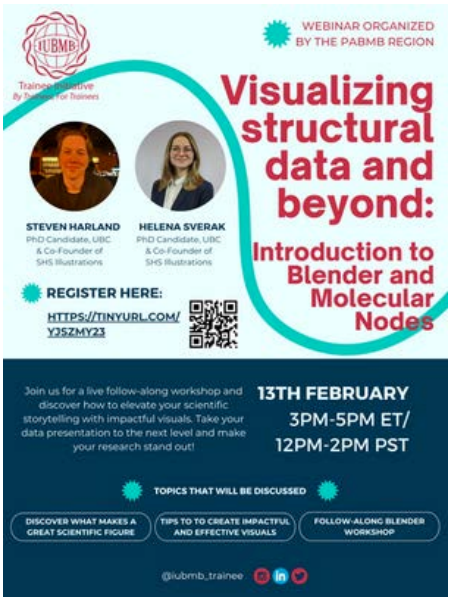
This webinar was part of the broader mission of the **IUBMB Trainee Initiative**: to provide meaningful, accessible career development opportunities for the next generation of researchers, with a strong focus on global reach and inclusivity. A recording of the event is available here for those who could not attend live, ensuring continued access and visibility for this important resource.

IUBMB Trainee Initiative

an Update on the IUBMB TI Quarterly Events

Visualizing structural data and beyond: Introduction to Blender and Molecular Nodes

Hosted by the 2025 PABMB Region: Rocío Meinero, María Elisa Vázquez, Tiara Mulder, Sana Ahmed



On February 13, 2025, the PABMB region of the **IUBMB Trainee Initiative** held a global online event titled "**Visualizing structural data and beyond: Introduction to Blender and Molecular Nodes"**. The webinar aimed to explore the latest programs and tools for scientific visualization, learn what makes a good scientific figure, and gain practical tips and tricks for creating effective visuals. Our brilliant speakers were Steven Harland and Helena Sverak.

Helena Sverak, a PhD researcher in β-lactam antibiotic resistance at the University of British Columbia, opened the webinar with an overview of how to tailor figures to different data types. She explained that choosing the right style—whether it's a flowchart, schematic, or graph—helps audiences grasp key results more easily. Helena then dived into the use of Adobe Illustrator for scientific illustrations, offering practical guidance on setting up multiple artboards for different figure panels or supplementary data to enable efficient workflows, as well as strategies for organizing complex figures into layers to maintain clarity. She also discussed advanced features such as using vector shapes, custom color palettes, and alignment tools to produce professional graphics. To expand on molecular and structural data visualization, Helena also covered ChimeraX for 3D molecular rendering and ChemDraw for creating chemical structures. Her demonstrations highlighted how these specialized tools can seamlessly integrate with Illustrator, ensuring a consistent look and feel across all figures in a manuscript or presentation.

Next, Steven Harland, a PhD candidate studying protein-protein interactions in photoreceptors at the University of British Columbia, showcased the power of Blender for scientific visualization. Steven provided a step-by-step tour of Blender's key features, including modeling and texturing to build accurate 3D representations of molecular or cellular structures, techniques to animate processes like enzyme-substrate interactions, and lighting and rendering best practices to create visually compelling scenes. He emphasized that while 3D software can seem daunting at first, a methodical approach—starting with basic shapes, mastering navigation, and gradually adding detail—makes Blender an invaluable tool for creating visual narratives in research. Both speakers stressed that these techniques and software solutions serve the same purpose: making complex scientific concepts more accessible and engaging.

The session concluded with an interactive Q&A, where participants sought advice on everything from file formats to the most efficient ways of collaborating with co-authors on figure design. Helena and Steven encouraged attendees to keep experimenting with new digital tools, reminding everyone that effective scientific visualization ultimately amplifies the impact of one's research. For those who didn't get a chance to attend, the recording is now live!

Your Monthly Minutes

- IUBMB Trainee Initiative-

Trainee Initiative

Get to know: Dario Alessi

- President of the IUBMB until 2027
- Group Leader at the University of Dundee, Scotland
- Working on Signal Transduction in Diseases

I feel a lifelong fascination for understanding the human body, the molecular basis of diseases, and translating that knowledge into improved diagnostics and treatments.

I find great joy in mentoring the next generation of scientists. Seeing the people we have trained become successful scientists themselves is incredibly fulfilling!

The discoveries I am most proud of are the Eureka moments in identifying key substrates of disease-relevant protein kinases such as PDK1, WNK1, LKB1, and LRRK2.

About Science

During my PhD, I worked on understanding the "power stroke" of muscle contraction by designing specialized spin-labelled ATP probes. After three years of painstaking synthesis, I travelled to Minneapolis to use a state-of-the-art electron spin resonance instrument. Yet, in just 20 minutes, the data revealed the ATP probes didn't bind rigidly enough to the myosin head—rendering years of work inconclusive.

That was, of course, disappointing. But this is science. You learn that things don't always work out. You must be resilient, learn from failure, and adapt your approach. Some projects succeed immediately; others take time, new ideas, and different methods

The key skill I learned was to set up a robust assay. Once you have a quantitative, sensitive, and reliable assay, you can achieve anything. This is as true today as it was then.

Still, I feel the rapid progress made possible by cutting-edge technologies in MS, CRISPR, and AI -what used to take years can now be achieved in weeks or even days.

With all these advances, new challenges for our scientific system have emerged. We are drowning in data and information. Extracting what is useful and determining what is reliable, has become a major challenge. Companies report that up to 70% of published data cannot be reproduced. Meanwhile, instruments generate petabytes of data, making storage, retrieval, and analysis costly and difficult.

The way we do science is always changing. Nowadays, every year we are able to accomplish more in the same amount of time. We used to know some pathways in great detail, but for young people, learning how to retrieve, use, and conceptualize information will probably be more essential.

Of all the activities we support, the Trainee Initiative is among the most important. I hope that tomorrow's leaders will participate in the TI to develop themselves and form lifelong connections through it.

I certainly welcome new ideas and encourage trainees to contribute to the IUBMB's mission. I would love to hear from the Trainee Initiative about what we can implement to further support young scientists. I am sure, their success will drive the future of science.

I believe independence, curiosity, and ownership of ideas is important. Initially, you follow your supervisor. But as you progress, you need to become an expert in your topic. I always enjoy it when students surprise me with successful experiments after I doubted it would work. To my mind, it is a sign they are ready to graduate.

Editors Note: I really enjoyed this one! Looking forward to an exciting 2025 with all of you, sharing the most inspiring ideas from the next generation of outstanding scientists!

Graphics by UxWing

Trainee Initiative

Your Monthly Minutes

- IUBMB Trainee Initiative-

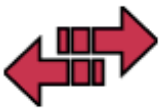
Trainee Initiative

Get to know: Sana Ahmed

- Soon To Be IUBMB Trainee Initiative Chair
- PhD Student in Vancouver, Canda
- Working On Targeted Protein Degradation In Cancer

I found my love for science during Grade 8, after an experiment in Biology class. Our teacher said something along the lines of, "We have not even explored 1% of the science out there." My curiosity was ignited.

This sentence reminds me that the possibilities of discovery are endless! The idea of having an open plate in front of you and choosing what you want to put onto it is fascinating to me.



Therefore, I would advise to read scientific magazines, listen to podcasts or talk to your peers and colleagues—just surround yourself with science. This is the easiest way to dive in and find inspiration.

About Science

In India, pursuing a career in science does not hold the same prestige as becoming an engineer or a medical doctor. But moving to Canada during my childhood taught me otherwise. Then, in my undergraduate studies in Biochemistry, I became excited about research through my honours thesis project using super-resolution microscopy. This further inspired me to start a PhD at the University of British Columbia!

Currently, I use Cryo-EM to investigate proteins involved in cancer. Through structure-guided drug design, we aim to target proteins for degradation—in short, from DNA to structure to therapeutics!

As a PhD student, you start to really narrow down on a particular topic. But even then, there are so many unexplored questions and various techniques to try. Just follow the journey!

Expertise in super-resolution Microscopy and Cryo-EM as well as a broad range of Biochemical assays

Growing With The Struggle

Especially in grad school, you will often be expected to swim on your own. Choosing projects and targets, as well as designing your experiments yourself. Especially in the beginning that can be overwhelming, therefore, just go with the flow and learn along the way.

Of course, when things don't work out or you need to change your topic, it will hurt. Don't try to suppress the disappointment. Embrace it—this is human nature. Live through it, and then get back on your feet! Also, having two projects from the start can be a good idea so you always have one to fall back on.

Finding a project in a new group can be challenging at times. My tip: Find a common perspective with your PI. His/Her priorities might differ from yours. Therefore, talk to senior postdocs—they can often help you understand your PI's perspective.

Nevertheless, make sure to discuss the skills you want to develop before you graduate. This is a conversation that will help you pinpoint essential features of your work.

It's okay to be uncomfortable. We all have to deal with uncertainty and setbacks all the time. You might see your peers getting data and making progress while you're not even sure what your next step is. The key is to become comfortable even when you feel uncomfortable or uncertain.

Editors Note: I believe Sana is right—embrace your pain, disappointment, and fear instead of suppressing them. Initially, it will be frightening, but it will resolve them in the long run.

Graphics by UxWing

IUBMB Trainee Initiative

February 2025 - PABMB

Your Monthly Minutes

- IUBMB Trainee Initiative-

Trainee Initiative

Get to know: Kundai Matinyarare

- Member of FASBMB (Africa)
- Bachelor Student at the University of Zimbabwe
- Working on Antibacterial Properties of Natural Compounds

I had initially planned to study Medicine. As places have been limited, I chose Biochemistry as an alternative. Honestly, I didn't have a clear idea of what Biochemistry was all about.

I was attending classes rather than truly engaging with science. That changed when I met Tatenda Murigo*. She introduced me to the fundamentals of Biochemistry and all the opportunities ahead.

Therefore, I would advise all students to dive into their subject as deeply as possible, without comparing themselves to more popular and well recognized fields like Medicine.

About Science

Realizing that we are investigating the basic building blocks of life excites me. It is these units where all life originated! To me this also means that every experiment we do gives us the power to understand the fundamentals of life.

I am currently working on the green synthesis of silver nanoparticles using a plant with known antimicrobial activities for the decontamination of biomedical waste. The goal is to solve the problem of infectious and multiresistant strains that grow in biohazardous waste when it is left before processing in labs, hospitals, or incineration facilities.

As a Bachelor's student, I am currently exploring what captivates me most— exploring the fundamentals genetics, or applied research—while preparing for my next position in a medical lab.

Experiences in chemical extractions from plants and microbiological assays (e.g., Minimum Inhibitory Concentration Assays).

*Editor's Note: A former member of the IUBMB TI, who passed away in a car accident last year.

Look Ahead

Especially for younger students, it is important to actively shape their expectations about the work you will be doing in the future. What kinds of exciting positions are out there? What do they entail? And how can you get one of them?

Although it initially might seem intimidating, in the end, it's just about browsing the web and social media to find opportunities. But make sure the sources, opportunities, and scholarships you come across are not scams. A quick message to the organization or verifying them through their LinkedIn or Instagram profile by checking for real people and a consistent publishing history is often an effective strategy.

Embrace Opportunities

During your studies, don't just attend lectures and courses to get through university. Understand what Biochemistry means to you and what excites you! There are countless opportunities out there and a multitude of topics and labs you can explore. So, embrace these opportunities openly and take full advantage of them!

As scientists, we have a responsibility to share our passion for science. This applies not only to the public who need to understand the importance of science, but also to our duty to inspire the next generation of scientists. Knowledge is power, and science holds the potential to empower others. The passion with which you ignite the scientific spirit in others is what will drive their own passion forward!

Editors Note: Kundai's fresh perspective is something that might help all of us – don't just check off the chores, rather, go deeper to find the meaning that excites you!

Graphics by UxWing

Trainee Initiative

Your Monthly Minutes

- IUBMB Trainee Initiative-

Trainee Initiative

Get to know: Sophie Strich

- Member of the FEBS region (Europe)
- PhD Student at the Medical University of Innsbruck
- Working on and with kinase reporters

My journey into science began during a 10th-grade internship.
Something clicked when I got to hold a pipette in my hands and assisted with analyzing yeast-based diseases.

My inspiration mostly arises from the vast unknown in science. The virtually never-ending possibilities for discovering new insights are what keep me motivated and curious to do research.

But beyond curiosity, I'm motivated by the idea of improving treatments, especially in the context of personalized medicine - making treatments more effective by tailoring them individually!

About Science

I am part of a kinase-focused lab, where we track kinase conformation and activity using kinase reporters. My PhD research focuses on analyzing the role of kinases in mitophagy in a disease contexts. So far, I worked on projects involving the PINK-Parkin pathway, PKB and testing kinase inhibitors to evaluate their effects on mitochondrial respiration—both the intended effects and any off-target impacts.

One of the most exciting techniques I work with is a kinase conformation reporter called KinCon, which allows us to observe how kinase conformation changes in response to protein-protein interactions, mutations, or small molecule treatments

One of the best opportunities in science is the chance to go abroad to learn new techniques, meet scientists from different backgrounds, and experience how research is done in different places.

Experiences in Biochemical assays (Focus Kinases), cell culture, and High-resolution respirometry.

Look Ahead

I now supervise two Bachelor's students, and I've learned that patience is key. You can't overwhelm them with everything at once. Instead, I take it step by step—starting with just one experiment at a time. Letting them make mistakes is part of the process. At their stage, they're still undecided about their future, so my goal is to help them see what they could do in science.

When I think back, I would also advise to never say "never" when it comes to exploring research opportunities. Take it step by step—focus on one thing, and then figure out what comes next.

Enhancing Applications

When applying for scholarships, clearly communicate what you want to learn. Make it easy for the reader—especially the PI of a lab—to understand what your goals are and why your research is valuable. Tell them the expected results and why they matter. When writing papers, keep sentences short and concise. Clarity is key.

As scientists, we tend to overload our schedules, staying long in order to finish all we can think of. Planning too many experiments, rushing through them and making mistakes... Now, I focus on doing one proper experiment rather than two rushed ones. Taking a break can refresh one's mind, helping you return to the bench with focus & clarity.

Editors Note: Whether teaching students or performing our experiments, it always feels like faster is better – but in the end, not rushing often performs better in the long run.

Trainee Initiative

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Your Monthly Minutes

- IUBMB Trainee Initiative-

Trainee Initiative

Get to know: Ben Krinkel

- Member of the FAOBMB region (Asia & Oceania)
- PhD Student at the University of Auckland, New Zealand
- Working on structurally guided dug design

My interest in science was really sparked by one exceptional biology teacher. Their passion really stood out compared to others, making me realize how exciting science could be.

Early on, I just knew I wanted to do something related to biology. Then I came across a paper about drug development—how you can take a drug and improve it—and that really caught my attention.

It was a paper that nudged me toward biochemistry - where structure-guided drug design and cancer research became my biggest interests. And this is what I am still working on now in my PhD.

About Science

Today, I'm a PhD candidate at the School of Biological Sciences at the University of Auckland. My research focuses on malic enzymes—proteins that are upregulated in the altered metabolism of cancer cells. These enzymes play a role in the TCA cycle, and understanding them better could open up new therapeutic options.

I work on developing new drugs by improving inhibitors through structure-guided drug design. We still use many applied methods as software such as AlphaFold still struggles with conformational changes and membrane-bound domains.

Put Your Name in the Hat! Don't be afraid, even if you feel you don't have all the data or experience. Perseverance is key—you don't need to be perfect, success often comes to those who keep showing up.

Protein expression and purification in bacteria and yeast, X-ray Crystallography, ITC, BioSAXS

How to Successfully Start in the Lab

When you first transition into a real research lab, it can be a shock. Unlike undergraduate labs where experiments are designed to work, research labs are full of trial and error. I made the mistake early on of trying brute force—doing the same thing over and over—thinking I was the problem.

My tip: ask a lot of questions. Senior students are usually happy to help if you approach them respectfully.

Make personal connections. Introduce yourself, join them for lunch, and build some rapport. It's much easier to ask for help when you already have a friendly relationship.

A Tip For Presentations

Adding some story telling elements in your presentations can enable you to truly engage people. I would advise to give your audience sufficiently much background before you present results. Then, package your results in a way that reflects the story of your research journey - meaning share why you made each step, not just what you did.

If people can follow your logic, they will feel much more connected to your work and engage better.

When reading scientific papers, slow down for the abstract. Take the time to make sense of it in your mind—you'll get a clear idea of whether the paper is valuable for your needs. If the abstract resonates, you can dive deeper, focusing on the discussion section to see how relevant the findings are for your own work.

Editors Note: Yes, put your name in the hat, and don't be afraid of failing. Of course, make sure you are truly passionate about the opportunity, but never let yourself be intimidated!

Your Monthly Minutes

- IUBMB Trainee Initiative-

Trainee Initiative

Get to know: Tiara Mulder

- Member of the PABMB region (Americas)
- PhD student at the Dalhousie University, Canada
- Working on muscle damaga and repair in Drosophila

In fact, I did not start my studies in science. I began as a history major. But in my humanities program, we had to choose a science course—and I picked biology. To my surprise, I really enjoyed it.

I was drawn to the idea that everything seems to have a purpose, yet at the same time, we still don't know the purpose behind so many things. That mystery, the unknown, was incredibly exciting to me.

I eventually decided to do a double major in mathematics and biology, with a minor in history. Science went from being a requirement to something I genuinely wanted to pursue.

About Science

What fascinates me the most is that proteins can respond to mechanical input. You learn the Krebs cycle in textbooks, but it's easy to forget that all of these processes are happening at the same time inside a living system.

I now study Filamin, a protein involved in muscle repair. During muscle contractions, Filamin undergoes conformational changes that expose binding sites for signaling proteins—an essential step in the repair process. We use genetic tools in fruit flies to investigate how these conformational changes contribute to muscle repair process.

No one really teaches you how to learn from failure. In school, setbacks often feel like dead ends. But in research, they're part of the process. The key is to turn frustration into fuel and learn to see the hidden patterns.

Well versed in Biochemical methods, special expertise in Drosophila as a model organism

How to Successfully Start in the Lab

One of the biggest challenges for me is to convince people that fruit flies are a valid and powerful model system. Flies can be seen as "less serious" even compared to cell culture. Still, flies have enormous advantages: genetic balancing, fewer chromosomes, and strong conservation across species. In fact, the gene that contributes to jet lag in humans was first found in fruit flies!

In grants, I include full paragraph to outline why flies are the best model for my question. Be explicit: explain why other models won't work. And when talking to the public, find relatable examples that help make the science accessible.

Don't Compare Yourself to the Wrong People

In science, it's easy to fall into the trap of comparison. Someone might seem to work super fast, but if most of their work is computational you cannot compare it to workflows requiring caring for and crossing flies.

One TED Talk helped me reframe this: it described that "void" where nothing makes sense and no experiments work. But then, something finally clicks—and you're back in it. That rollercoaster is normal. You just have to hang on!

There's a philosophical side to science that I love. Philosophers often approach science with a sense of wonder, while scientists can sometimes treat projects as tasks with clear endings. But science is never truly finished. A mentor once told me: "You'll complete a piece of work, but the project itself will continue."

Editors Note: Learning how to learn is crucial, especially at the start of a project, when most experiments fail. The right mindset and finding patterns in the chaos will guide you best.

IUBMB Trainee Initiative

Graphics by UxWing

June 2025 - PABMB

3rd FEBS-IUBMB-ENABLE Conference

ARTIFICIAL INTELLIGENCE: Reshaping biomedical and healthcare research

4-6 December 2024 • Lee Kong Chian School of Medicine • Singapore

Report by James Murphy, Executive Committee Member for Publications and Nomenclature (Australia)

The Scientific and Local Organising Committees of the Singapore ENABLE meeting

The first FEBS-IUBMB-ENABLE Conference outside of Europe was hosted in December by the Lee Kong Chian School of Medicine (LKCMedicine) at Nanyang Technological University (NTU) in Singapore. ENABLE conferences are organized by an international team of students and postdoctoral fellows for other trainees from around the world featuring scientific talks from world leaders, vibrant poster sessions and discussions, and fora for professional development and raising awareness of the career opportunities afforded by advanced scientific training. This year's event attracted more than 260 researchers from 22 countries, representing 36 different nationalities. The meeting attracted a diverse group of scientists: more than half were women, a third were students, a third were postdocs and, for the first time, around 1 in 20 were clinicians.

The ENABLE (the European Academy for Biomedical Science) conferences first arose in 2020 as a collaboration between IRB (Barcelona, Spain), RIMLS (Nijmegen, Netherlands), NNF CPR (Copenhagen, Denmark), SEMM (Milan, Italy) and the science communication agency, Scienseed, with the support of the European Union Horizon 2020 initiative. When initial funding lapsed, the IUBMB and FEBS partnered to continue to support the conference from 2022 onward. Both IUBMB and FEBS saw the immense value in this initiative as a training opportunity for a talented and dedicated group of students and postdoctoral fellows who team up to organise the entire event for their peers' benefit.

5th FEBS-IUBMB-ENABLE Conference

ARTIFICIAL INTELLIGENCE: Reshaping biomedical and healthcare research

4-6 December 2024 • Lee Kong Chian School of Medicine • Singapore

The organizing of the conference commenced 18 months prior to the event and was the product of two major committees. The Scientific Organizing Committee comprises representatives from the original four collaborating European institutions – IRB, RIMLS, NNF CPR and SEMM – as well as representatives from the IUBMB and FEBS. The Local Organizing Committee is assembled from host organization representatives, who provide important logistical support on the ground and important insights for outreach and social activity planning.

Activities and Scientific Symposium

On the evening before the formal start to the meeting, many delegates participated in fun activities that allowed visitors to explore the offerings of Singapore. Organized by the Local Organizing Committee, delegates toured the LKC Natural History Museum to view the unique local collection showcasing the biodiversity and ancient history of Southeast Asia before a walking tour of University Town at the National University of Singapore (NUS), in part reflecting the contributions of the other esteemed Singapore organizations, NUS and A*STAR, to the Local Organizing Committee and meeting overall. The evening concluded with a Trivia Night at the bar adjacent to LKCMedicine, allowing delegates to mingle and meet one another ahead of the scientific program.

The Scientific Organising Committee enjoy one of the many culinary treats offered during the meeting

DAY 1

Following the formal opening by co-chairs, Kaustuv Ghosh (IRB Barcelona) and Dayang Asyiqin (LKCMedicine), IUBMB (Prof. James Murphy, WEHI, Australia) and FEBS (Dr Vlastimil Kulda, Charles University, Czech Republic) representatives, the program commenced with a Keynote lecture from the Dean of LKCMedicine, Prof. Joseph Sun, who led off the **Artificial Intelligence in Biomedical Research** session, which included three keynote presentations. Prof. Sun noted, as many of us had realised by then, that there are two seasons in Singapore – searing heat outside and refrigerated indoors. Prof. Sun presented vividly on aspects of how Artificial Intelligence can contribute to knowledge advancement and innovations in healthcare as well as the underlying ethical considerations: very much

5th FEBS-IUBMB-ENABLE Conference

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setting the scene for an exciting two day program at the cutting edge of contemporary science. This session continued with two further dynamic keynote presentations from Dr Jingmei Li (Genomic Institute of Singapore) and Prof. Reiko Tanaka (Imperial College, UK) who discussed cutting edge approaches to using AI in research, diagnostics and treatments. Following a highly engaged panel discussion with the three opening keynote speakers around the role of AI in Biomedicine and Health, four flash talks and two short talks were presented on Metabolic Diseases Population and Global Health. Following a lunch buffet of many tasty Singapore dishes and a vibrant poster session, a further 2 sessions followed in which a keynote speaker was followed by four flash talks to prime the audience for the poster session and two short talks. Prof. Namkug Kim (University of Ulsan College of Medicine, South Korea) and A/Prof. Xiaotao Shen (LKCMedicine, Singapore) presented invited lectures to lead off each of the Respiratory and Infectious Diseases sessions.

A group photo with the original ENABLE flag on day 1 of the meeting

5th FEBS-IUBMB-ENABLE Conference

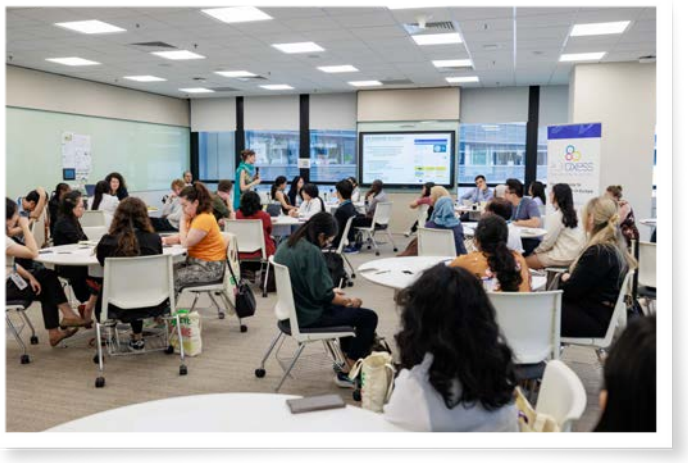
ARTIFICIAL INTELLIGENCE: Reshaping biomedical and healthcare research

4-6 December 2024 • Lee Kong Chian School of Medicine • Singapore

DAY 2

Saw the same program structure continue with two morning and two afternoon sessions each led by an invited speaker and complemented with four flash talks and two short talks from trainees. The first session focused on Skin Disease and Wound Repair and featured Prof. Zonguan Ge (Monash University, Australia). Prof. Jason Pitt (Cancer Science Institute of Singapore) led off the second session focused on Metabolic Diseases in Population and Global Health. After another impressive buffet – this time introducing many of us to the delights of Bee Hoon noodle soup – and another vibrant poster session, our afternoon program of two sessions focused on AI in Neurobiology commenced led off by invited presentations by Prof. Woo-Young Ahn (Seoul National University, South Korea) and Prof. Parul Verma (IIT Madras, India). After the program concluded, we were invited to the upper levels of LKCMedicine for a banquet dinner featuring an iconic assemble-your-own Singapore laksa, a generous and inspiring welcome by the Vice Dean (Research), Assoc. Prof. Sanjay Chotirmall, and encouragement to visit the building's library to view the spectacular lights of Singapore at night.

DAY 3



One of the Day 3 professional development workshops

The third and final day was soon upon us. After day 3 opened with an FEBS Breakout Lecture from Assoc. Prof. Chen Jinmiao (Duke-NUS Medical School, Singapore) on the role of AI in analysing spatial Omics data, we departed from the structure of the previous 2 days of scientific presentations to focus on careers. Parallel workshops allowed delegates to hear from presenters on a wide range of topics ranging from personal development, well-being, multidisciplinarity and differing career paths, before we concluded the program with a stimulating and vibrant panel discussion on the nexus between academic discovery and industry translation. The meeting closed with 11 short talk, flash talk and poster prizes for delegates, including those sponsored by the IUBMB journal, BioFactors, the FEBS journal, FEBS Open Bio. With the meeting's closing, all eyes are looking ahead to the next FEBS-IUBMB-ENABLE meeting to be held at the Scotland Institute in Glasgow, UK, in September 2025. Planning has been under way for months already for this event and no doubt it promises to be as enjoyable. It is fair to say that a high bar has been maintained with the Singapore meeting and, finally, we thank the organising teams for their unwavering dedication to building an amazing event that was enjoyed by all.

5th FEBS-IUBMB-ENABLE Conference

ARTIFICIAL INTELLIGENCE:
Reshaping biomedical and healthcare research

4-6 December 2024 • Lee Kong Chian School of Medicine • Singapore

The ENABLE flag is passed from the Singapore organisers to the Scotland ENABLE delegation

2026 FEBS-IUBMB-ENABLE Conference

Following an open call, we are delighted to announce that the Faculty of Biochemistry, Biophysics and Biotechnology **at** Jagiellonian University in Kraków, Poland, has been selected to host the 5th FEBS-IUBMB-ENABLE International Molecular Biosciences PhD and Postdoc Conference in 2026. The FEBS-IUBMB-ENABLE conferences are interdisciplinary, three-day events organized by and for young researchers, featuring a scientific symposium, career day, and outreach activities. These conferences bring together up to 300 participants from around the world.

The Faculty of Biochemistry, Biophysics and Biotechnology at Jagiellonian University

Kraków, Poland

2030 IUBMB-FEBS-SEBBM Conference

to be held in Seville, Spain

A joint site visit for the 2030 IUBMB-FEBS-SEBBM Congress took place from March 3rd to 6th, 2025, in Madrid and Seville, Spain. The delegation included representatives from the International Union of Biochemistry and Molecular Biology (IUBMB), the Federation of European Biochemical Societies (FEBS), and the Spanish Society for Biochemistry and Molecular Biology (SEBBM).

The participants were:

- Loredano Pollegioni, Treasurer, IUBMB
- Ilona Concha Grabinger, Executive Committee Member for Congresses and Focused Meetings, IUBMB
- Miguel Ángel de la Rosa, Secretary General, FEBS
- Piotr Laidler, Congress Counsellor, FEBS
- Irene Díaz-Moreno, Chair, Careers of Young Scientists Committee, FEBS
- Tom Kingsnorth, Chief Administrator, FEBS
- Marta Reyes, Manager of Careers of Young Scientists, FEBS
- Isabel Varela Nieto, Former Vice-President, SEBBM
- Antonio Ferrer, President, SEBBM

Based on the findings of this site visit, the Executive Committees of both IUBMB and FEBS met on April 1st and 3rd, 2025, respectively, and unanimously selected Seville as the host city for the 2030 IUBMB-FEBS-SEBBM Congress, to be held in **September 2030**.

The 2030 Congress will also hold special significance, as it will commemorate the 75th anniversary of the IUBMB, established during the Third International Congress of Biochemistry in Brussels in 1955. The event in Seville promises to be a landmark celebration of international collaboration, scientific progress, and the rich legacy of biochemistry and molecular biology.

Madrid

Seville

2030 IUBMB-FEBS-SEBBM Conference

to be held in Seville, Spain

Seville

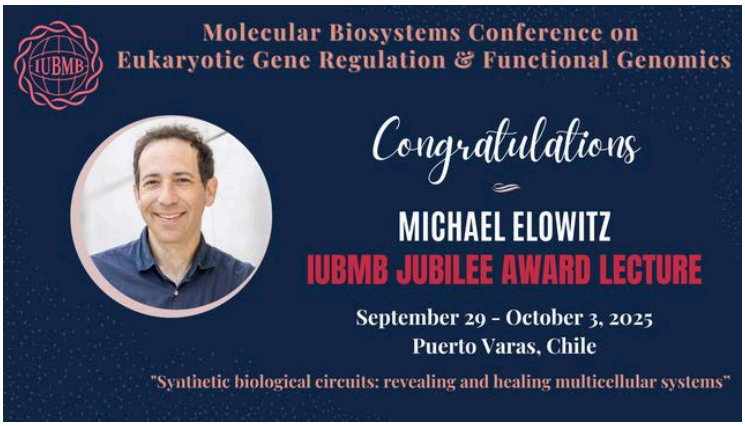
Seville

Palacio de Congresos in Seville

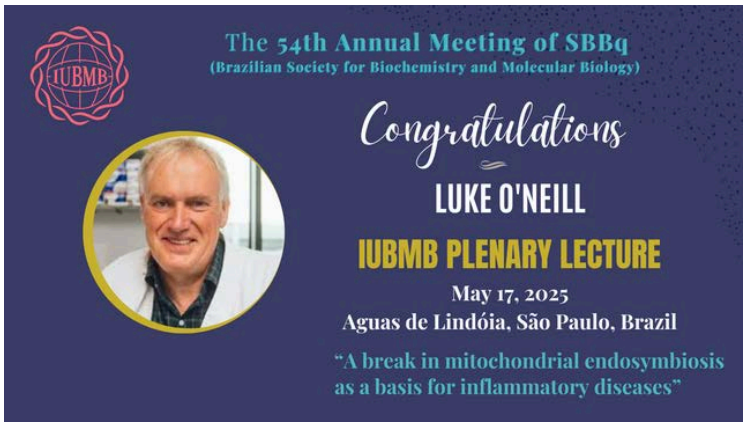
Palacio de Congresos in Seville

Congratulations

IUBMB Lectures



Congratulations to Professor Michael Elowitz from the California Institute of Technology & HHMI, USA, who will be presenting the IUBMB Jubilee Award Lecture at the IV Molecular Biosystems Conference on Eukaryotic Gene Regulation & Functional Genomics in Puerto Varas, Chile, from September 29 – October 3, 2025, on *"Synthetic biological circuits: revealing and healing multicellular systems"*. He is honored for his outstanding contributions to the fields of synthetic biology and systems biology.



Congratulations to Professor Luke O'Neill from Trinity College Dublin, Ireland, who presented the IUBMB Plenary Lecture at the 54th Annual Meeting of SBBq, in Aguas de Lindóia, São Paulo, Brazil, from May 17 – 20, 2025, on *"A break in mitochondrial endosymbiosis as a basis for inflammatory diseases"*.

Congratulations to Professor Alexandra Newton from the University of California San Diego (UCSD), USA, who will be presenting the IUBMB Plenary Lecture at the 47th SEBBM Congress, in Cáceres, Spain, from September 2 – 5, 2025, on *"Protein Kinase C Signaling in Health and Disease"*.

Congratulations to Professor Francisco J. Quintana from Ann Romney Center for Neurologic Diseases, Harvard Medical School, Brigham and Women's Hospital, Boston, MA, USA and Broad Institute of MIT and Harvard, Cambridge, MA, USA, who will be presenting the IUBMB Plenary Lecture at the 61st SAIB Annual Meeting, in Córdoba, Argentina, from October 27 – 30, 2025, on *"Astrocyte control of the immune response in the CNS"*.

IUBMB Journals

IUBMB Journals

We are excited to highlight new research from the IUBMB Journals

Please also consider submitting your own research to the IUBMB Journals. You can expect to work with **distinguished Editorial Board** members and benefit from **worldwide circulation and readership** through our publishing partnership with Wiley. For more information about the journal and submissions, feel free to peruse the IUBMB journals website.

For now, please enjoy highlights of our recent content. Happy reading!

Did you know? Wiley and Jisc just signed an agreement that allows UK authors to publish Open Access in the IUBMB Journals at no cost to them.

Thanks to a partnership our publisher Wiley has signed with Jisc, certain UK institutions now have full access to journals published by Wiley, including the IUBMB Journals. Further, the partnership enables authors at participating UK institutions to publish open access at no cost **to them** in the IUBMB Journals. Payment of the associated Article Publication Charges (APC) would be covered via the partnership, and authors will not need to cover the APCs from their own pockets.

Wiley has also signed similar agreements with universities in Germany, the Netherlands, Austria, Norway, Hungary, Finland, Sweden, and with the US-based OhioLink And VIVA.

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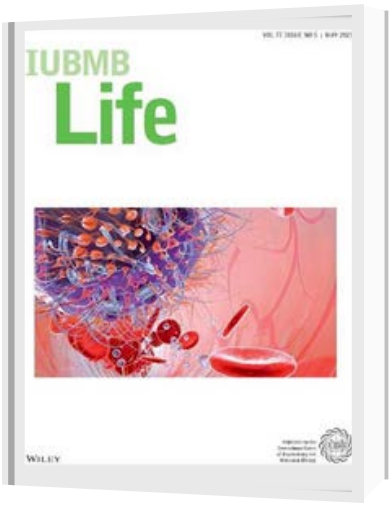
IUBMB Journal Highlights



New Issue: Volume 77, Issue 5

Follow the IUBMB Life account on Twitter @IUBMB_Life for the journal's latest news and updates.

Issue Highlights (Open Access)

Therapeutic Potentialof Translational Readthrough at Disease-Associated PrematureTermination Codons From Tumor Suppressor Genes

Torices, L., Nunes-Xavier, C.E. and Pulido, R.

First published: 2 May 2025

Tumor suppressor genes are frequently targeted by mutations introducing premature termination codons (PTC) in the protein coding sequence, both in sporadic cancers and in the germline of patients with cancer predisposition syndromes. These mutations have a high pathogenic impact since they generate C-terminal truncated proteins with altered stability and function. In addition, PTC mutations trigger transcript degradation by nonsense-mediated mRNA decay. Here, the authors review the recent advances in small molecule pharmacological induction of translational readthrough of disease-associated PTC from tumor suppressor genes, and discuss the therapeutic potential of translational readthrough in specific groups of patients with hereditary syndromic cancers.

Hermansky-Pudlak Syndrome: From Molecular Pathogenesis to Targeted Therapies

Tondi, F., Cirsmaru, R.A., Conti, C., Follenzi, A., Gresele, P., Olgasi, C. and Bury, L.

First published: 19 May 2025

Hermansky-Pudlak syndrome (HPS) is a rare inherited disorder caused by defects in lysosome-related organelles (LROs) in various tissues,including platelets, melanocytes, and endothelial cells.Key features of HPS include oculocutaneous albinism, bleeding tendency, and, in some cases, pulmonary fibrosis, granulomatous colitis, and immunodeficiency. The condition is linked to mutations in 11 genes involved in the formation of LROs. Currently, treatment options for HPS are limited and often ineffective. In this review, the authors focus on the genetics and molecular mechanisms of HPS, on its clinical manifestations and current therapeutic approaches, highlighting the need for further research into the disease mechanisms and potential innovative therapies.

Special Issues Open for Submission

- The Role of Human Gut Microbiota in Health and Disease
  - Deadline for Submission: 30 June 2025

- Special Issue on Computational Biology in Identification of Potential Biomarkers for Cancer Immunotherapy
  - Deadline for Submissions: 31 July 2025

Call for Papers - Special Issues Proposals

IUBMB Life solicits proposals for special issues relevant to the mission of our journal in the field of Biochemistry, Molecular Biology, Cell Biology, Structural Biology and Molecular Medicine and pertinent areas. This is **an open call for Special Issue Proposals**, and all submissions will be reviewed in a timely manner. We will provide streamlined editorial support and assistance to the special issue guest editors.

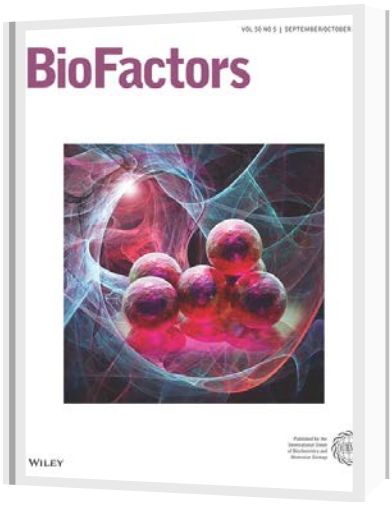
APPLICATION PROCESS

Prospective guest editor(s) need to complete the Special Issue Proposal Form available online and submit it to mchoudhary@wiley.com, together with the CV(s) of the proposed guest editor(s). Please state “IUBMB - SI proposal submission” in the subject line of your submission email.

A special issue proposal should include the following content:

- A short title that can clearly describe the scope of special issue;
- A short introduction about the significance of the special issue;
- Basic information and CV of Lead Guest Editor and Co-Guest Editors;
- List of potential authors and their tentative article titles;
- The estimated number of submissions;
- Proposed timeline.

Please visit the journal homepage for more information.



New Issue: Volume 51, Issue 3

Follow the BioFactors account on Twitter @WileyBiomedical for the journal's latest news and updates.

Issue Highlights (Open Access)

UPS and Kinases—Gatekeepers of the G1/S Transition

Roy, S., Saha, G. and Ghosh, M.K.

First published: 30 April 2025

The G1/S transition is a highly regulated and pivotal checkpoint in the cell cycle, where the cell decides whether to commit to DNA replication and subsequent division or enter a non-dividing state. This checkpoint serves as a critical controlpoint for preventing uncontrolled cell proliferation and maintaining genomic stability. The major driving force underlying the G1/S transition is the sequential activation of Cyclin-dependent kinases (CDKs), which is regulated by the coordinated binding of Cyclin partners, as well as the phosphorylation and ubiquitin-mediated degradation of both Cyclin partners and Cyclin- dependent kinase inhibitors (CKIs). The authors explore the evolution of three distinct models describing the G1/S transition, highlighting how the traditional linear model is being challenged by recent paradigm shifts and conflicting findings. These advances reveal emerging complexity and unresolved questions in the field, particularly regarding how the latest insights into coordinated phosphorylation and ubiquitination-dependent degradation integrate into contemporary models of the G1/S transition.

The Potential Role of Matrix Metalloproteinase in Polycystic Ovary Syndrome: Implications for Extracellular Matrix Remodeling

Nikanfar, S. and Amorim,C.A.

First published: 30 May 2025

Polycystic ovary syndrome (PCOS) is a prevalent endocrine disorder and a leading cause of infertility primarily due to impaired folliculogenesis and anovulation. Central to ovarian function and follicular development is the extracellular matrix (ECM), which undergoes significant remodeling facilitated by matrix metalloproteinases (MMPs). In PCOS, the ovarian cortex becomes thickened and collagen-rich, creating a rigid environment that disrupts normal follicular growth and oocyte maturation. This review aims to explore the intricate roles of ECM and MMP alterations in PCOS pathogenesis, highlighting their impact on folliculogenesis and steroidogenesis. Understanding MMP/TIMP dynamics offers insights into potential therapeutic targets to restore normal ovarian function and improve fertility outcomes for women with PCOS.

BioFactors Editor's Choice Virtual Issue: Highlighting Top Papers from 2023-2024

BioFactors has recently launched a virtual issue - Editor's Choice (2023-2024) - featuring a curated selection of high-interest papers published during 2023-2024. **Explore these noteworthy contributions today!**

CALL FOR PAPERS

- The Role of Human Gut Microbiota in Health and Disease
  - Deadline for submission: 30 June 2025
- Unlocking the Secrets of Lipocalins: Navigating Their Role in Cell Communication and Signalling
  - Deadline for submission: 31 July 2025
- The Role of Fermented Foods in Nutrition and Health
  - Deadline for submission: 31 July 2025

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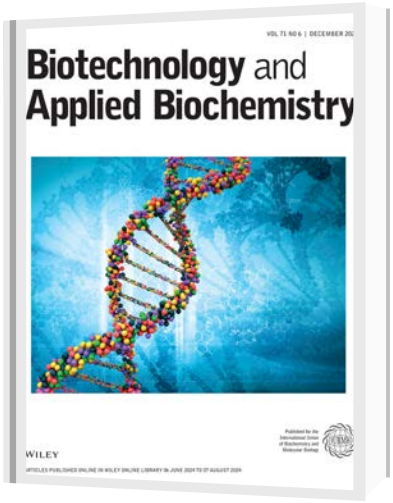


New Issue: Volume 72, Issue 2

Follow the Biotechnology and Applied Biochemistry account on Twitter @WileyBiomedical for the journal's latest news and updates.

Issue Highlights (Open Access)

Identification of dilated cardiomyopathy-linked key genes by bioinformatics methodsand evaluating the impact of tannic acid and monosodium glutamate in rats

Karadas H, Tosun H, Ceylan H.

First published: 25 September 2024

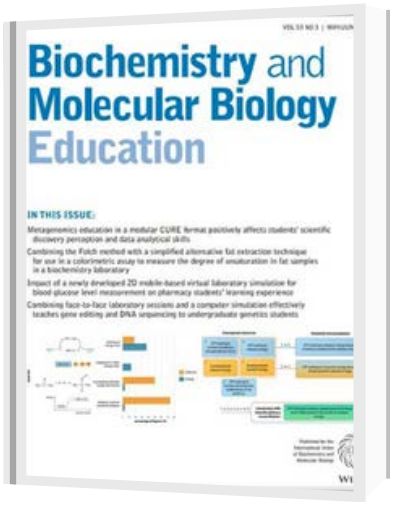
Dilated cardiomyopathy (DCM) is the most common type of myocardial dysfunction, affecting mostly young adults, but its therapeutic diagnosis and biomarkers for prognosis are lacking. This study aimed to investigate the possible effect of the common food additive monosodium glutamate (MSG) and tannic acid (TA), a phenolic compound, on the key molecular actors responsible for DCM. The authors results provide new insights into critical molecular mechanisms that should be focused on in future DCM studies. Moreover, MSG may play a critical role in DCM formation, and TA may be used as a promising therapeutic agent in DCM.

Escherichia coli in the production of biopharmaceuticals

İncir İ, Kaplan Ö.

First published: 8 September 2025

Escherichia coli has shouldered a massive workloadwith the discovery of recombinant DNA technology. A new era began in the biopharmaceutical industry with the production of insulin, the first recombinant protein, in E. coli and its use in treating diabetes. After insulin, many biopharmaceuticals produced from E. coli have been approved by the US Food and Drug Administration and the European Medicines Agency to treat various human diseases. Although E. coli has some disadvantages, such as lackof post- translational modifications and toxicity, it is an important host with advantages such as being a well-known bacterium in recombinant protein production, cheap, simple production system, and high yield. This study examined biopharmaceuticals produced and approved in E. coli under the headings of peptides, hormones, enzymes, fusion proteins, antibody fragments, vaccines, and other pharmaceuticals. The topics on which these biopharmaceuticals were approved for treating human diseases, when and by which company they were produced, and their use and development in the field are included.



New Issue:
Volume 53, Issue 3

Follow the Biotechnology and Applied Biochemistry account on Twitter @WileyBiomedical for the journal's latest news and updates.

Issue Highlights (Open Access)

Visual representations of energy and chemical bondingin biology and chemistry textbooks: A case study of ATP hydrolysis

Yang M, Armpriest BC, Wright LK, Newman DL.

First published: 18 March 2025

Energy is a crosscutting concept in science,but college studentsoften perceive a mismatch betweenhow their biology and chemistry courses discuss the topic. The challenge of reconciling these disciplinary differences can promote faulty reasoning—for example, biology students often develop the incorrect idea that breaking bonds is exothermic and releases energy. The authors hypothesize that one source of this perceived mismatch is that biology and chemistry textbooks use different visual representations of bond breaking and formation. The authors hypothesize that these visual inconsistencies may be a contributing factor to student struggles in constructing a coherent mental model of energy and bonding.

Combining face-to-face laboratory sessions and a computer simulation effectively teaches gene editing and DNA sequencing to undergraduate genetics students

Vedova CD, Denyer G, Costabile M.

First published: 15 MarchSeptember 2025

Innovative approaches to teaching genetics are essential for improving student engagement and comprehension in this challenging field. Laboratory-based instruction enhances engagement with the subject while fostering the development of practical competencies and deepening comprehension of theoretical concepts. However, constraints on time and financial resources limit the feasibility of conducting extended laboratory sessions that incorporate cutting-edge genetic techniques. This study evaluated a hybrid teaching method that combined face-to-face (F-2-F) laboratory sessions with an online simulation to instruct undergraduates on gene editing and DNA sequencing. The authors findings demonstrate the potential of integrating simulations with F-2-F instruction to enhance undergraduate education in genetics and molecular biology.

Trends in Biochemical Sciences Turns 50 in 2026!

We're excited to celebrate *Trends in Biochemical Sciences'* 50th anniversary in 2026—and we want our global biochemistry community to join the festivities!

Keep an eye on our social media channels and the journal website for upcoming activities, including a special call for cover art submissions. We also welcome your suggestions for articles—whether traditional reviews or pieces exploring the everyday life of scientists. Help us shape this milestone celebration with your ideas!

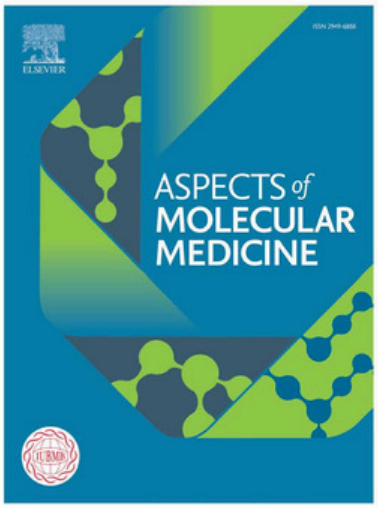
Stay tuned and celebrate 50 years of groundbreaking biochemistry with us!

Sannie Culbertson, PhD
Senior Editor, Trends in Biochemical Sciences – Cell Press

TIBS social: @TrendsBiochem | @cp-trendsbiochem.bsky.social
TIBS website: https://www.cell.com/trends/biochemical-sciences/home
Editor social: @sanniejculbertson.bsky.social | https://www.linkedin.com/in/sanniejculbertson/

Aspects of Molecular Medicine

Official Journal of the International Union of Biochemistry and Molecular Biology (IUBMB) and companion to Molecular Aspects of Medicine



NEW OPEN ACCESS JOURNAL

Editor-in-Chief
Angelo Azzi, MD, PhD

Submit your paper before December 31, 2025, to benefit from a 50% discount on the Article Processing Charge (APC).

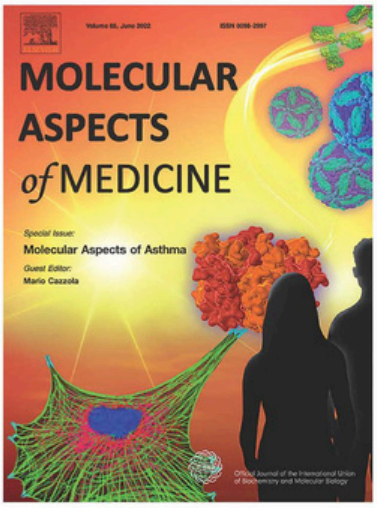
With a mission to provide a clinical foundation for basic scientists and a rationalization of disease for the clinician.

Find out more

sciencedirect.com/journal/aspects-of-molecular-medicine

Molecular Aspects of Medicine

Official Journal of the International Union of Biochemistry and Molecular Biology (IUBMB) and companion to Aspects of Molecular Medicine



Editor-in-Chief
Angelo Azzi, MD, PhD

Find out more

Impact Factor: **8.7**

Cite Score: **18.2**

A review journal for physicians and biomedical scientists

sciencedirect.com/journal/molecular-aspects-of-medicine

ELSEVIER

IUBMB

Editorial Reflection: A Year of Progress in Molecular Medicine

As we close another remarkable year in the ever-evolving landscape of molecular medicine, I'm proud to reflect on the progress, impact, and vision that continue to define our journals: *Molecular Aspects of Medicine* and its companion journal *Aspects of Molecular Medicine*.

Molecular Aspects of Medicine: Upholding Excellence and Vision

Established as a premier review journal, *Molecular Aspects of Medicine (MAM)* continues to serve as a leading voice for comprehensive, state-of-the-art reviews in the field. In 2024, we have:

- Published 8 themed issues, curated by leading guest editors, covering cutting-edge topics such as molecular mechanisms of aging, epigenetics in inflammation, RNA-based therapeutics, and metabolic control in disease.
- Seen a 15% increase in citations, reflecting the depth, utility, and scholarly impact of our content.
- Received over 300 proposals for review topics, highlighting growing interest from researchers wishing to contribute high-impact perspectives.

We remain committed to publishing reviews that not only synthesize but shape the trajectory of molecular medicine research. Our editorial board has grown to include new global experts, further enhancing our reach and rigor.

Aspects of Molecular Medicine: Nurturing Discovery and Innovation

Launched to complement MAM, *Aspects of Molecular Medicine (AMolM)* was envisioned as an open-access, peer-reviewed platform for original research, offering a rigorous, rapid, and accessible home for novel findings.

In our first full year of publication:

- Published over 60 original articles, many of which bridged molecular findings with translational insights.
- Maintained an average time to first decision of 21 days, underscoring our commitment to the timely communication of science.
- Articles have already begun accumulating citations and Altmetrics attention, indicating real-time engagement from the global research community. The calculated impact factor from the database Scopus is already higher than 5.

We are especially encouraged by the interdisciplinary nature of submissions, spanning molecular oncology, rare diseases, systems biology, and immunometabolism.

Thematic Trends in 2024

Throughout 2024, both journals have showcased research reflecting the evolving landscape of molecular medicine, including:

- Immunometabolism: Exploring metabolic-immune system interactions, especially in trained immunity and inflammation.
- Autophagy and Cell Death: Investigating roles of autophagy and ferroptosis in disease mechanisms and therapies.
- Gene Regulation: Focusing on non-coding RNAs and epigenetic regulation of gene expression.
- Therapeutic Innovations: Advancing novel treatments for cancer and neurodegenerative diseases.

Notable Publications and Citation Highlights

Most Cited Articles (All-Time Highlights):

- *Medicinal plants: Traditions of yesterday and drugs of tomorrow* – 1,269 citations
- *Regulation of Glutathione Synthesis* – 1,261 citations
- *The Real-Time Polymerase Chain Reaction* – 1,107 citations

These landmark reviews have significantly advanced our understanding of natural product pharmacology, redox biology, and molecular diagnostics.

Notable 2024 Publications – Molecular Aspects of Medicine:

- *Immunometabolic Control of Trained Immunity* – 13 citations
- *NK Cells and ILCs in Tumor Immunotherapy* – 10 citations
- *Targeting O-GlcNAcylation to Develop Novel Therapeutics* – 10 citations

Notable 2024 Publications – Aspects of Molecular Medicine:

- *ELAVL1 is Transcriptionally Activated by FOXC1 and Promotes Ferroptosis in Myocardial Ischemia/Reperfusion Injury by Regulating Autophagy* – 5 citations
- *Novel Targeted Therapies for Parkinson's Disease* – 4 citations
- *Long Non-Coding RNA CIR Inhibits Chondrogenic Differentiation of Mesenchymal Stem Cells by Epigenetically Suppressing ATOH8 via Methyltransferase EZH2* – 4 citations

Shared Mission and 2025 Outlook

Together, *MAM* and *AMolM* form a complementary ecosystem:

- MAM provides in-depth reviews that consolidate knowledge and chart future directions.
- AMolM serves as a dynamic platform for original discoveries and methodological innovations.

Looking ahead to 2025, we will focus on:

- Increasing diversity and inclusion among authors, reviewers, and editorial leadership.
- Hosting joint special issues and cross-journal thematic collections.
- Enhancing data transparency and reproducibility standards.
- Expanding our global contributor base, with special emphasis on early-career scientists.

Closing Remarks

On behalf of our editorial teams, I extend deep gratitude to our authors, reviewers, and readers. Your dedication fuels our mission to advance molecular medicine. Here's to another year of discovery, dialogue, and impact.

Angelo Azzi

Editor-in-Chief
Molecular Aspects of Medicine & Aspects of Molecular Medicine

UPCOMING IUBMB DEADLINES

Dear researchers,

We are pleased to announce the **4th FEBS-IUBMB-ENABLE Conference**, taking place this year in **Glasgow** and titled **"Bridging Minds: Interdisciplinary Research for the Future of Life Sciences,"** scheduled to take place from **10–12 September 2025** at the James McCune Learning Hub, University of Glasgow, UK.

The **FEBS-IUBMB-ENABLE Conference** is an annual international event designed **by and for early-career researchers** in molecular life sciences. It brings together **PhD students and postdocs from around the world** for three days of **scientific exchange**, **career development**, and **interdisciplinary collaboration**. Each edition is hosted by a different research institute and supported by FEBS and IUBMB, ensuring a **dynamic and inclusive environment** for young scientists to connect, share ideas, and explore diverse scientific and professional pathways.

Scientific Symposium

Present your research and engage directly with experts across diverse disciplines, including tissue engineering, oncology, biochemistry, computational biology, click-chemistry, immunotherapy, epigenetics, microbiome research, virology, and technological advancements.

Career Day

Expand your professional network and career opportunities through a full day of targeted workshops, one-on-one mentoring sessions, and interactive career panels featuring leading professionals from academia, industry, and beyond. Gain valuable insights into career planning, transferable skills, and emerging trends in the life sciences job market.

Outreach Activities

Contribute to meaningful science outreach initiatives designed to bridge the gap between researchers and the broader public. Take part in engaging events that promote scientific literacy, encourage public dialogue, and foster a culture of inclusion and transparency in science communication.

The event will feature **keynote lectures by renowned scientists**, **poster sessions**, **short presentations**, and extensive **networking opportunities**, designed specifically to **empower the next generation of life scientists**. **Registration now open.**

We look forward to welcoming you to Glasgow in September 2025.

Register by August 1

Kind regards,
FEBS-IUBMB-ENABLE 2025 Organizing Committee

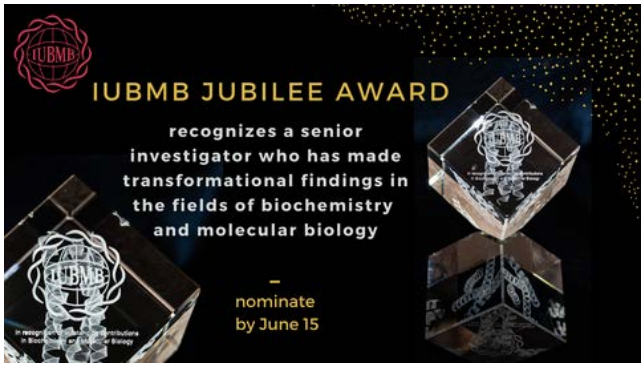
UPCOMING IUBMB DEADLINES

The IUBMB Wood-Whelan Research Fellowships supports up to 4 months in a lab and up to a maximum of US $5,000 for travel expenses.

NEW Deadline:
March 15 & September 15 @ 11:59 pm PST

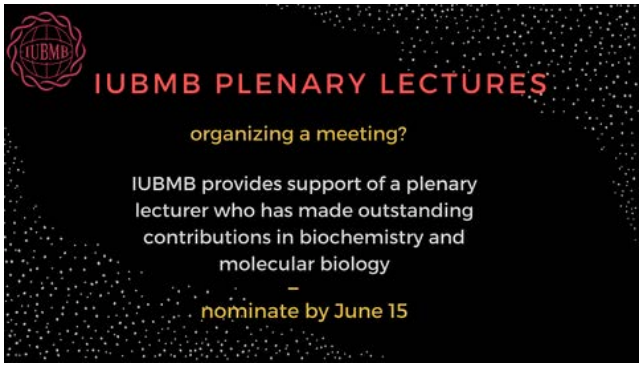
The IUBMB Travel Fellowships are designed to support up to US $2,500 to travel to meetings for trainees in the IUBMB region.

NEW Deadlines: March 15, June 15, September 15, and December 15 @ 11:59 pm PST



Organizing a meeting? Consider nominating the Plenary Lecturer for the IUBMB Jubilee Award. Our most prestigious honor recognizes a senior investigator who has made transformational findings in the fields of biochemistry & molecular biology.

Deadline: December 15 @ 11:59 pm PST



Organizing a meeting? IUBMB provides support of a plenary lecturer who has made outstanding contributions in biochemistry and molecular biology.

Deadline: December 15 @ 11:59 pm PST

IUBMB EMERGING LEADER

The IUBMB Emerging Leader Award was established to recognize exceptional and talented early career investigators in biochemistry and molecular biology from underdeveloped countries.

New

Deadline: December 15 @ 11:59 pm PST

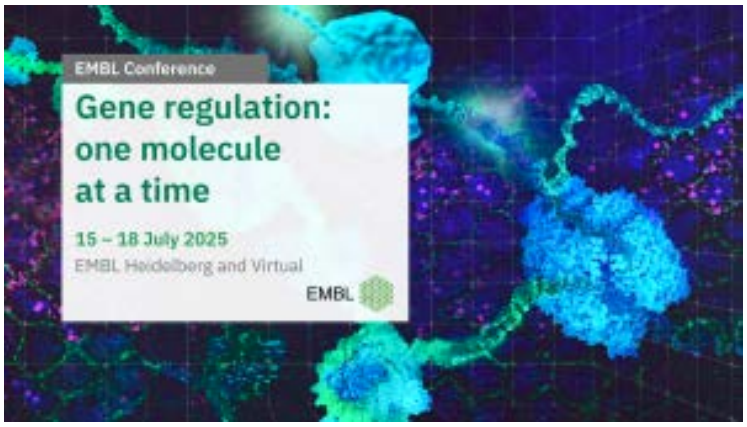
IUBMB FOCUSED MEETINGS

EXPLORING THE FRONTIERS OF SCIENCE

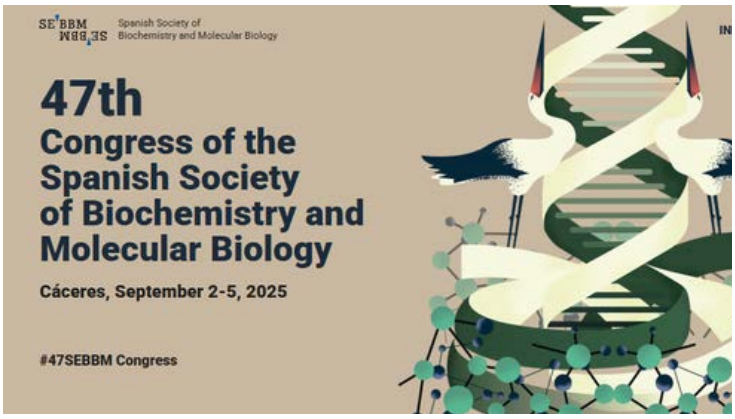
CALL FOR PROPOSALS FOR 2026 & 2027

DEADLINE EXTENDED TO DECEMBER 15, 2025

UPCOMING MEETINGS 2025



JUL 8: Virtual Registration
Online poster | Meeting link



Featuring IUBMB Plenary Lecture: Alexandra Newton
Online poster | Meeting link

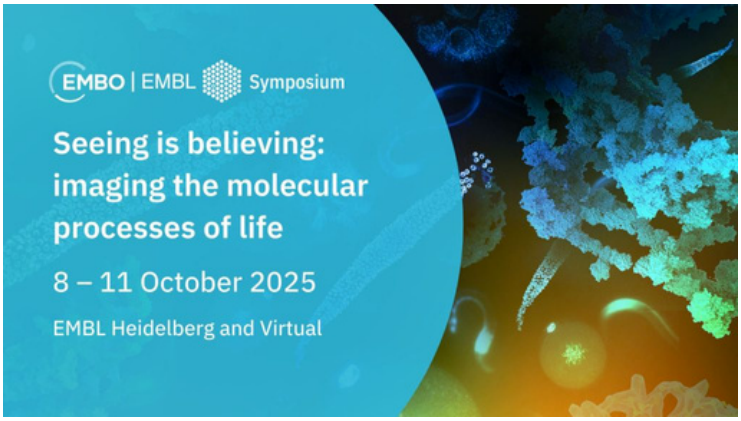
JUL 23: On-site Registration | **AUG 27**: Virtual Registration
Online poster | Meeting link

JUL 29: On-site Registration | **SEPT 2**: Virtual Registration
Online poster | Meeting link

AUG 5: On-site Registration | **SEPT 9**: Virtual Registration
Online poster | Meeting link

Featuring IUBMB Jubilee Award Lecture: Michael Elowitz
Meeting link

UPCOMING MEETINGS 2025



JULY 2: Abstract submission
AUG 27: On-site Registration **|** **OCT 1**: Virtual Registration
Online poster **|** Meeting link

JUL 8: On-site Registration **|** **SEP 2**: Virtual Registration
Online poster **|** Meeting link

JULY 16: Abstract submission
SEPT 10: On-site Registration **|** **OCT 15**: Virtual Registration
Meeting link

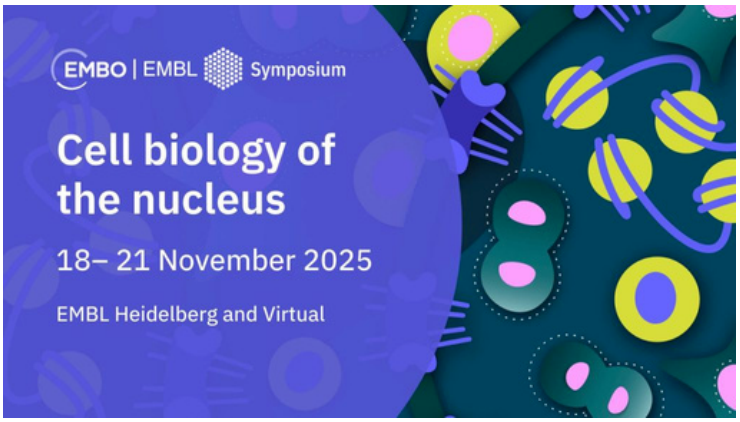
Featuring IUBMB Plenary Lecture: Michael Elowitz
Meeting link

AUG 5: Abstract submission
SEP 16: On-site Registration **|** **OCT 13**: Virtual Registration
Online poster **|** Meeting link

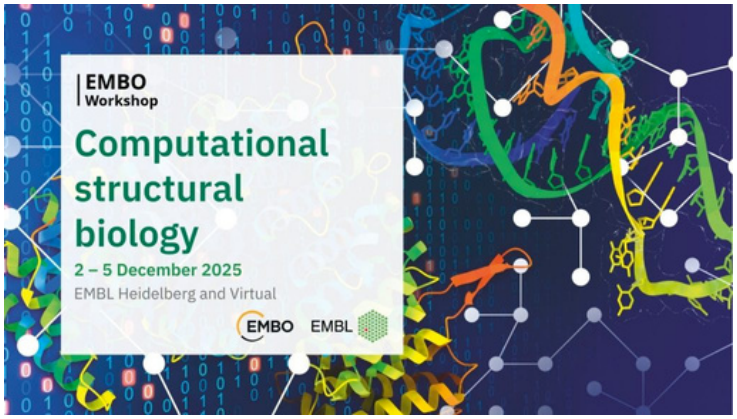
JULY 29: Abstract submission
SEPT 23: On-site Registration **|** **OCT 28**: Virtual Registration
Online poster **|** Meeting link

UPCOMING MEETINGS 2025

JUL 13: Abstract submission
SEPT 30: On-site Registration **|** **NOV 4**: Virtual Registration
Online poster | Meeting link



AUG 26: Abstract submission
OCT 7: On-site Registration **|** **NOV 4**: Virtual Registration
Online poster **|** Meeting link



AUG 26: Abstract submission
OCT 21: On-site Registration **|** **NOV 25**: Virtual Registration
Online poster **|** Meeting link

Emerging Roles of (Pseudo)Kinases in Signal Transduction

International Union of Biochemistry and Molecular Biology
Special Focussed Meeting
Queenstown, New Zealand
18–22 August 2025

KEYNOTE SPEAKERS:
Alexandra Newton
(University of California, San Diego)
Kevan Shokat
(University of California, San Fransisco)

INVITED SPEAKERS:
Dario Alessi
(MRC, Protein phosphorylation unit)
Robert Bauer
(Columbia University)
Moitrayee Bhattacharyya
(Yale University)
John Burke
(University of Victoria)
Arvin Dar
(Sloan Kettering Institute)
Roger Daly
(Monash University)
Smita Yadav
(University of Washington)
Pat Eyers
(University of Liverpool)
Grace Gong
(Cambridge University)
Ylva Ivarsson
(Uppsala University)
Jared Johnson
(Dana-Farber Cancer Institute)
Natarajan Kannan
(University of Georgia)
Karen Keeshan
(University of Glasgow)
Sharissa Latham
(Garvan Institute of Medical Research)
Diane Lidke
(University of New Mexico)
Isabelle Lucet
(Walter and Eliza Hall Institute)
Pierre Maisonneuve
(Institut Européen de Chimie et Biologie)
Deborah Morrison
(National Institute of Health, Bethesda)
Takuro Nakamura
(Tokyo Medical University)
Janni Petersen
(Flinders University)
Michael Reese
(University of Texas, Southwestern)
John W Scott
(Monash Institute of Pharmaceutical Sciences)
Peter Shepherd
(University of Auckland)
Vincent Tagliabracci
(University of Texas, Southwestern)
Susan Taylor
(University of California, San Diego)
Marc Therrien
(Université de Montréal)
Daniela Ungureanu
(University of Helsinki)
Sandhya Visweswariah
(Indian Institute of Science)

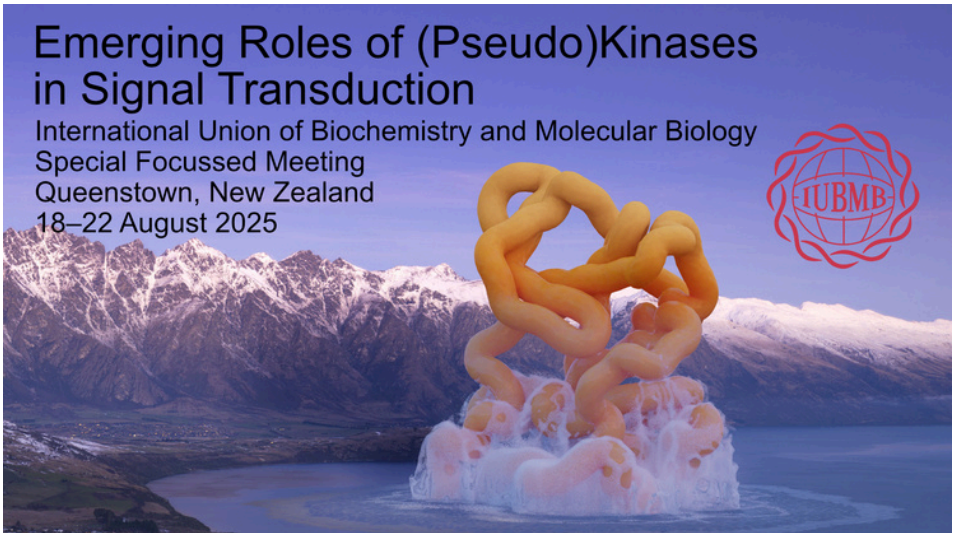
CHAIRS:
Peter Mace (New Zealand),
Natalia Jura (USA),
James Murphy (Australia)

https://www.ivvy.com.au/event/ERPKST25/

Image credit: www.QueenstownNZ.co.nz

PHOSPHO biomedical animation

UPCOMING MEETINGS 2025



Registration and abstract submission are still open for the IUBMB Focused Meeting “The Emerging Roles of (Pseudo)Kinases in Signal Transduction”, taking place in Queenstown, New Zealand, from 18–22 August 2025. Oral presentation slots are now full, but poster abstracts and registrations are welcome. Don’t miss this exceptional international meeting in a stunning location, featuring the IUBMB Jubilee Award Lecture by Professor Kevan Shokat and a stellar lineup of speakers. More info: https://www.ivvy.com.au/event/IUBMB25

IUBMB Education Symposium 2025

"Challenges and Way Forward in Science Education"

International Meeting - 49th Annual Conference of the **Malaysian Society for Biochemistry and Molecular Biology**

Venue: **M World Hotel**
Petaling Jaya, Malaysia

PLENARY LECTURES

Education for a Connected World: Navigating Complexity in the Ever-changing World

PROF. DR. LIM YANG MOOI
IUBMB

Sustainable Science Education for a Resilient Future: Navigating Challenges in Southeast Asia

DR. HIROMICHI
UNESCO

Collaborative Pedagogy: Enhancing Learning through Co-Teaching, Peer Assessment, and Co-Creation

AP. DR. NIRMA SAMARAWIKREMA
FAOBMB

IUBMB Education Symposium

REGISTRATION
through the 35th MCAB & 49th MSBMB Conference

INVITED SPEAKERS

Bridging Skills and Industry: Advancing TVET Policy and Curriculum Development in Malaysia

PROF. DR. MOHAMMAD SATAR BIN RASUL
UKM, MALAYSIA

From Theory to Practice: Analyzing Literature and Current Learning Trends in Science Education

PROF. DR. ZHEN LI
TSINGHUA UNIVERSITY, CHINA

WORKSHOPS

AP. DR. NIRMA SAMARAWIKREMA
MONASH UNIVERSITY
AUSTRALIA

AP. DR. KOK YIH YIH
IMU UNIVERSITY
MALAYSIA

DR. HIROMICHI
UNESCO

LearnSci

AP. DR. YAP WEI HSUM
TAYLOR'S UNIVERSITY
MALAYSIA

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The 11th International Symposium on Autophagy

11th ISA

16 - 20 November 2025
Lorne, Victoria, Australia

Register here: www.isa11.org

Invited Speakers

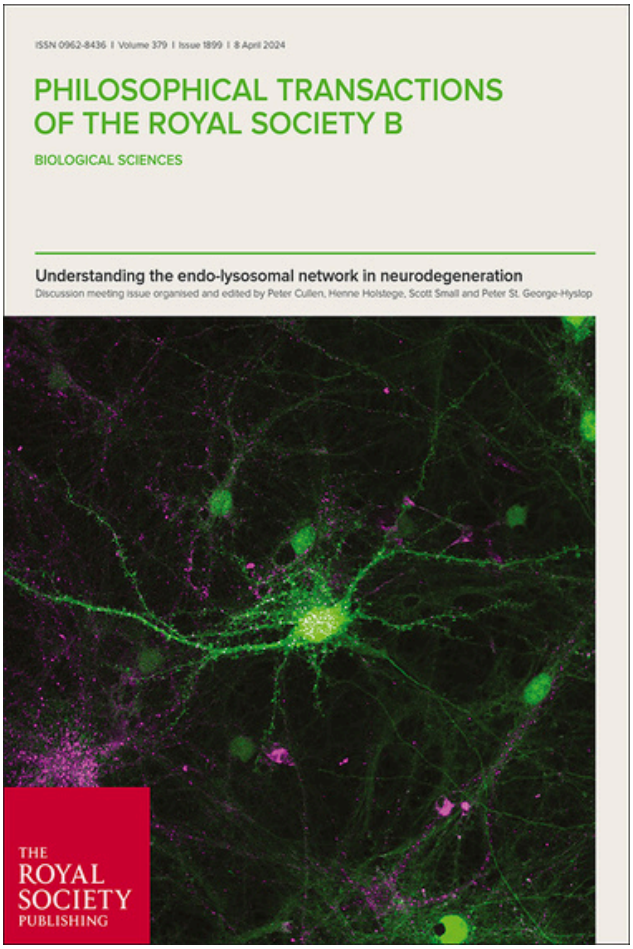
Alexandra Stolz
Anne Simonsen
Christian Behrends
Congcong He
David Rubinsztein
Erika Holzbaur
Erinna Lee
Guang-Chao Chen
Hong Zhang
Hui Jiang
Ivan Dikic
James Hurley
Julia Pagan
Maho Hamasaki
Masaaki Komatsu
Meagan McGrath
Nathan Pavlos
Noboru Mizushima
Richard Youle
Rushika Perera
Sascha Martens
Sharad Kumar
Sharon Tooze
Terje Johansen
Timothy Sargeant
Vassiliki Nikoletopoulou
Xiaochen Wang
Yan Zhao
Zvulun Elazar

Art&Science

LORNE UBIQUITIN

LORNE UBIQUITIN is being organized in partnership with 11th ISA and will be held 20-23 Nov. More info on www.lorneubiquitin.org.

ANNOUNCEMENTS



THE ROYAL SOCIETY PUBLISHING

Royal Society Publishing has recently published a special Open Access issue of *Philosophical Transactions B* entitled **Understanding the endo-lysosomal network in neurodegeneration** organised and edited by Peter Cullen, Henne Holstege, Scott Small and Peter St George-Hyslop and the articles are freely available online at www.bit.ly/PTB1899

Purchase the print issue at the reduced price of £40 by contacting sales@royalsociety.org.

For more information, please contact Felicity Davie at:

Felicity Davie
Royal Society Publishing
T: +44 20 7451 2647

The Royal Society
6-9 Carlton House Terrace
London SW1Y 5AG
E-mail: Felicity.Davie@royalsociety.org
http://royalsocietypublishing.org

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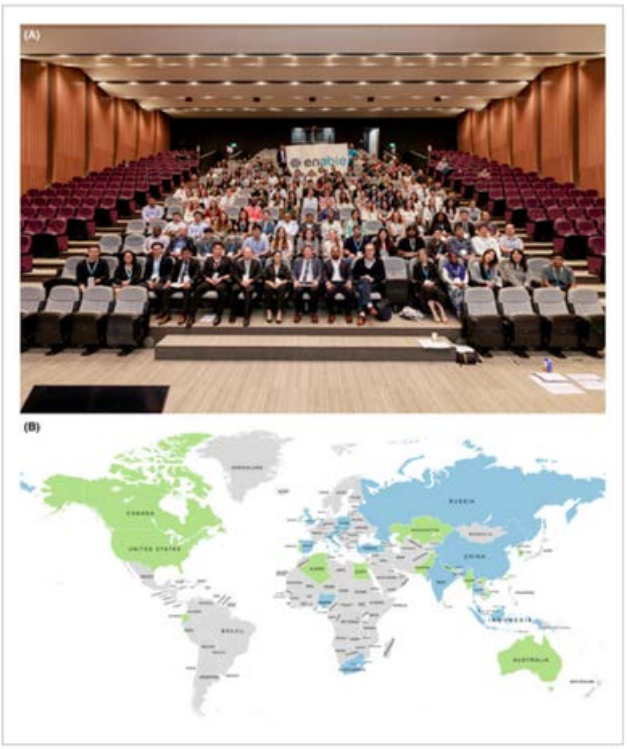
ANNOUNCEMENTS

Special Issue:
Volume 15, Supplement 1



FEBS-IUBMB-ENABLE 3rd International Molecular Biosciences PhD and Postdoc Conference, ARTIFICIAL INTELLIGENCE Reshaping biomedical and healthcare research, 4–6 December 2024, Lee Kong Chian School of Medicine (LKCMedicine), Nanyang Technological University, Singapore

Kaustuv Ghosh and Dayang Asyiqin
First published: 29 May 2025

The 3rd FEBS-IUBMB-ENABLE International Molecular Biosciences PhD and Postdoc Conference was held for the first time outside Europe, in South East Asia. On 4–6 December 2024, the Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, hosted over 260 participants from all around the world. The theme of this year's conference was “Artificial Intelligence – Reshaping biomedical and healthcare research”. The conference included a 2-day scientific symposium subdivided into four sessions: “AI in metabolic diseases, population and global health”, “AI in neuroscience and mental health”, “AI in respiratory and infectious diseases” and “AI in skin diseases and wound repair”. Ten global experts working at the forefront of expanding these horizons using AI were hosted. Through over 40 talks and 80 poster presentations, the participants at the conference, mostly young scientists at the doctoral and postdoctoral levels, had the chance to exhibit their research, fostering scientific exchange and collaboration. The last day of the conference included a career day dedicated to workshops, career sharing sessions and a panel discussion, where the focus was on career development, personal well-being, and translating academic research into industry innovations and startups. Pre-conference activities aimed towards fostering camaraderie and creating lasting memories made it a ‘must-to-attend’ event. The legacy of this conference will be carried forward by the next edition of FEBS-IUBMB-ENABLE titled “Bridging minds – Interdisciplinary research for the future of life sciences”, that will be hosted by Cancer Research UK (CRUK) Scotland Institute in Glasgow, UK, on 10–12 September 2025.

Link to Abstracts

IUBMB Programs and Benefits of Membership

Vision. Enhancing pedagogy and discipline-based knowledge in biochemistry and molecular biology through international collaboration.

The IUBMB is committed to improving education in biochemistry and molecular biology at all levels. The IUBMB Committee on Education and Training provides sponsorship for a range of activities which contribute to this goal. The Committee considers applications from all IUBMB Adhering Bodies and Associated Adhering Bodies. When an activity is to take place at a meeting of one of the Regional Organizations (FAOBMB, FASBMB, FEBS and PABMB), it is often appropriate for the application to be made through that organization.

In addition to funding activities which are organized through these organizations, the Committee on Education and Training takes a lead in organizing specific IUBMB Education Workshops around themes which are seen to be of strategic importance for BMB education. Prior advice about these initiatives and their outcomes will be widely disseminated through this website and through IUBMB social media channels.

Providing opportunities for the next generation of biochemists and molecular biologists is a primary mission of the IUBMB. In addition to specific Education initiatives described below, the IUBMB supports trainees through Research Fellowships such as the Wood-Whelan and Mid-Career Fellowships, and by providing funds to Focused Meetings to be used for travel awards to trainees.

IUBMB Programs. The wide range of programs available to scientists resident in IUBMB member countries, include:

Congresses. are held triennially in countries that are members of the Union and have a record of being outstanding and memorable scientific events for the world community of biochemists and molecular biologists.

Focused Meetings. replaced Conferences and Symposia in 2017. One per year will be sponsored to a maximum of US $60,000.

Young Scientists' Programs. are competitive awards covering travel, accommodation and meals for participation in the YSP held in conjunction with Congresses and Focused Meetings.

Advanced Schools. provide advanced training of PhD students and young postdoctoral fellows in the field of biochemistry, molecular biology and cell biology. This competitive funding covers support for the school related to travel, accommodation and meals for successful applicants.

Educational Activities. The IUBMB is involved in a broad range of educational programs. The Union holds or sponsors symposia on education at regional biochemical meetings around the world.

It also cooperates with the editors of the journal Biochemistry and Molecular Biology Education in identifying timely topics for presentation at symposia and workshops.

Education Fellowships. The IUBMB Education Fellowships provide opportunities for the development of both biochemistry and molecular biology educational programs and educators with the specific aims of: increasing expertise and capability in biochemistry and molecular biology education, supporting engaged educators, promoting change/innovation in approaches to education, improving student learning experiences, outcomes, and engagement with biochemistry and molecular biology, building an evidence base on which to make future recommendations on biochemistry and molecular biology education and supporting biochemistry and molecular biology education in developing countries.

Wood-Whelan Research Fellowships. are competitive awards covering travel, incidental costs and living expenses for visits of 1-4 months to other laboratories in the IUBMB region for the purpose of carrying out experiments that require special techniques or for other forms of scientific collaboration or advanced training.

Early-Career Research Fellowships. were established in response to an increased demand for further training of mid-career biochemists in the Developing World. These are short-term Fellowships (1-2 months), covering travel and incidental costs to a maximum of US$5,000, to enable researchers to work in an established laboratory to learn state-of-the-art techniques that are not readily available in their own countries.

PROLAB Fellowships. This collaboration between the IUBMB, PABMB, and ASBMB allows Latin American graduate students and postdoctoral fellows to spend short stays (1-6 months) in the laboratory of a scientist affiliated with ASBMB, in order to develop part of his/her thesis research work.

Travel Fellowships. are available for young scientists in or from developing countries who wish to attend meetings in the IUBMB region.

MilliporeSigma ENABLE-Africa Fellowships. This collaboration between IUBMB and MilliporeSigma provides support to African trainees to attend the FEBS-IUBMB-ENABLE Conference.

Relocation Support for Displaced Trainees. This programme was established to allow IUBMB to respond rapidly to any natural disasters and acts of war that results in loss of infrastructure and resources at universities and research institutions. This program provides financial support of up to three months for trainees to relocate to a new host lab to continue their research.

IUBMB Programs and Benefits of Membership

Vision. Enhancing pedagogy and discipline-based knowledge in biochemistry and molecular biology through international collaboration.

PROBio-Africa Fellowships. This collaboration between the FASBMB, IUBMB, and FEBS allows African postdoctoral fellows and new researchers to spend short stays (1-6 months) in the laboratory of a scientist affiliated with FEBS to carry out experiments that require special techniques and expertise or to facilitate other forms of scientific collaboration or advanced training.

Trans-Continental Youth Travel Fellowships. This collaborative activity between the IUBMB and the Federation of European Biochemical Societies (FEBS) provides trans-continental Youth Travel Fellowships to FEBS Advanced Courses and is financed by IUBMB.

Plenary and Jubilee Award Lectures. At IUBMB Congresses, several endowed lectures feature prominently in the program: IUBMB Jubilee Award and Plenary Lectures are intended as important lectures at scientific meetings, in particular of the smaller Adhering Bodies or Associate Adhering Bodies for which the budget would normally allow only for local speakers.

FEBS-IUBMB Events. This collaboration between IUBMB and FEBS provides financial support for invited speakers at FEBS Advanced Lecture Courses, FEBS Workshops and FEBS Special Meetings. Up to 10 invited speakers are supported per annum (up to US$2,000 each) from outside Europe.

IUBMB Publications. Trends in Biochemical Sciences (TIBS), IUBMB Life, BioFactors, Biochemistry and Molecular Biology Education (BAMBEd), Biotechnology and Applied Biochemistry, Molecular Aspects of Medicine, Aspects of Medicine. In addition, the following books/pamphlets are produced by IUBMB: Wiley-IUBMB Book Series, Standards for Doctoral Degrees in the Molecular Biosciences, and Metabolic Pathways Maps and Animated Maps (Animaps) prepared by the late Don Nicholson, University of Leeds.

Biochemical Nomenclature. The International Union of Pure and Applied Chemistry (IUPAC) and the IUBMB have established the IUPAC-IUBMB Joint Commission on Biochemical Nomenclature (JCBN) and the Nomenclature Committee of the International Union of Biochemistry and Molecular Biology (NC-IUBMB).

In order to maintain and enhance these programs, IUBMB depends on the financial support of its Adhering Bodies. It is important to note that the annual dues have not been increased for many years. Rather, the Executive Committee has preferred to pursue additional sources of income. Publications represent the major source of income for IUBMB but, with the rapid changes occurring in the publication business, particularly with the advent of open access publishing, maintenance of this income at current levels is challenging. The Executive Committee is continuously working hard to develop alternative funding sources, but the Union is still very dependent on the support of its Adhering Bodies.

Adhering Body status in the IUBMB is an investment rather than an expense. The direct financial benefits from membership in the IUBMB surpass the actual cost, and there are many other associated non-monetary benefits. Finally, it is also important to note that IUBMB is an international organization that, in addition to providing opportunities to all member countries, emphasizes programs that support young scientists, particularly from developing countries. The Union's philosophy has always been that rich countries can afford to contribute more than poorer countries to this end. Of course, situations change over time and one of the roles of the Executive Committee is to keep track of such changes and, for example, encourage emerging economies to contribute in proportion to their capacity, and to recruit new members to the Union. The IUBMB is strongly committed to diversity and opposes any type of discrimination.

More details about the extensive list of IUBMB programs can be found on the Union's website: www.iubmb.org.

Social Media Links

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(from left to right) M. Iqbal Parker, Alexandra Newton, Dario Alessi, Charysse Austria (Secretariat), Sandhya Visweswariah, Ilona Concha Grabinger, Daniel Dries (Chair of Fellowships Committee), James Murphy, Yang Mooi Lim, and Loredano Pollegioni.