IUBMB NEWSLETTER

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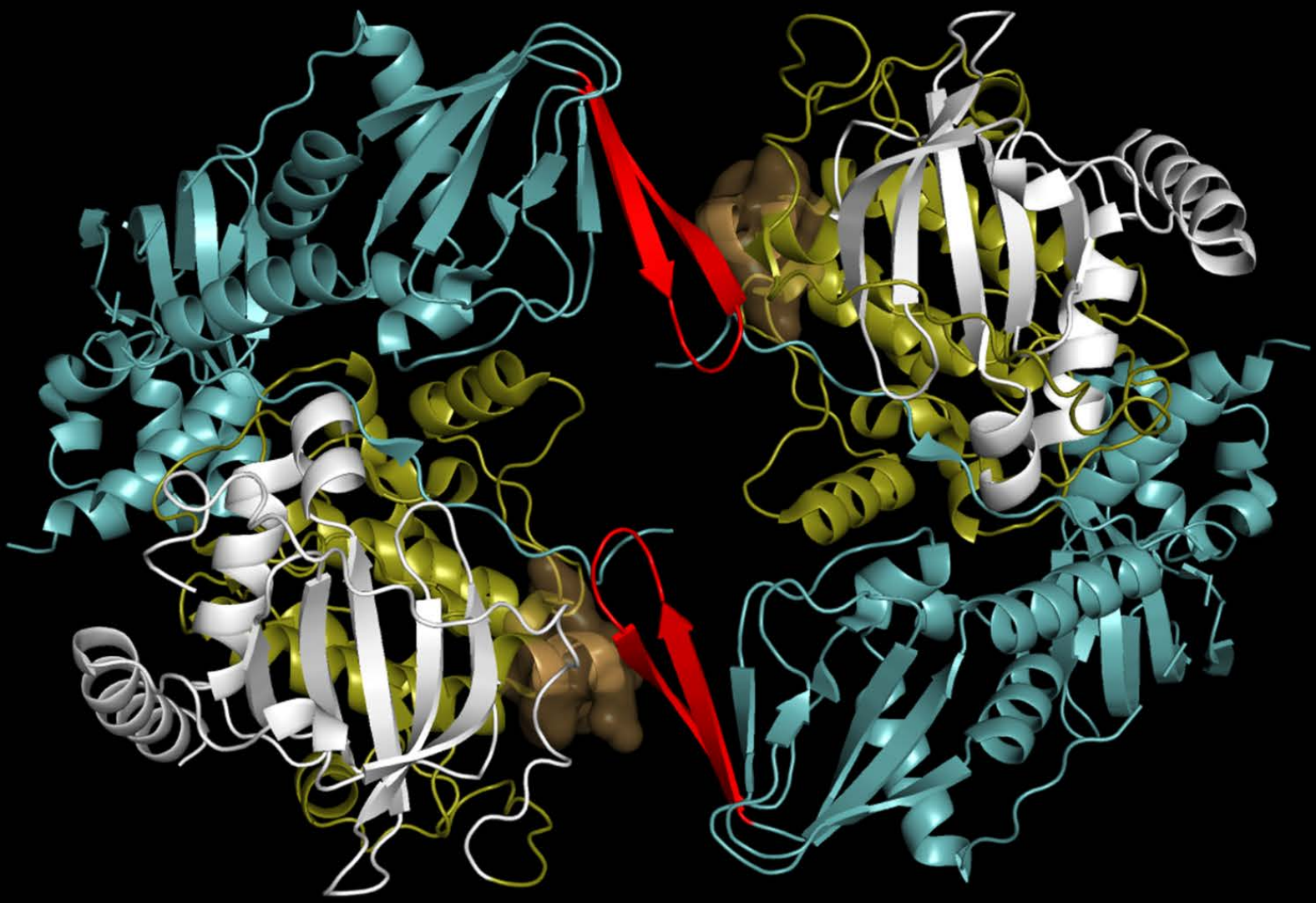
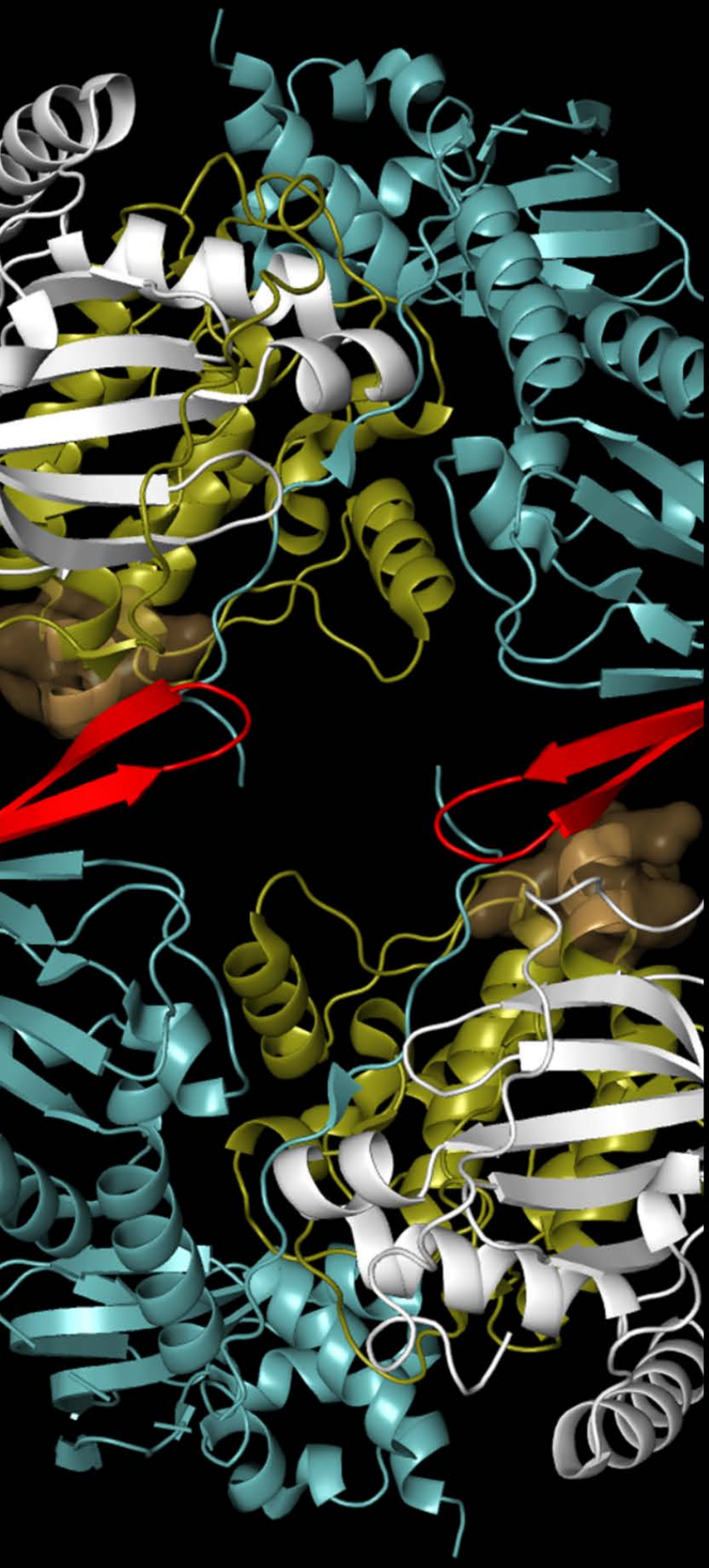


Image: *Structure of the Protein Kinase A:RIIb Tetrameric Holoenzyme solved by Ping Zhang and colleagues in the lab of Susan Taylor.*
Reference: *Science 2012 Feb 10;335(6069):712-6. doi: 10.1126/science.1213979*



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Message from the President

Alexandra Newton

Dear Friends of IUBMB,

What an exciting year 2022 has been for the IUBMB – our pandemic-postponed and long-awaited 25th triennial Congress finally took place, Focused Meetings and Advanced Lecture courses were back in person, and we put in place new initiatives for trainees, with special focus on Africa.

We made history in Lisbon in July, where our first tripartite Congress took place – a collaboration between IUBMB and two regional societies, FEBS and PABMB. This collaboration was possible because Portugal is a member of both FEBS and of PABMB, and a key reason this beautiful country was selected for the Congress. Lisbon was ideally situated for this tripartite event as its port faces west wards towards the Americas, and inland towards Europe. The Congress, attended by scientists from 62 countries, celebrated the collaborative nature of international science with four days of outstanding talks, posters, and workshops. The Congress was preceded by the Young Scientists Forum (YSF) in Vimeiro, Portugal, where IUBMB, FEBS, and PABMB sponsored students from 33 countries to attend a meeting focused on trainees. I enjoyed reaching out to so many students and postdoctoral fellows to find out how we can help in their training. Their passion, questions, and interest in biomolecular sciences was inspirational. I thank all who attended for making this meeting a success.

At the YSF, our inaugural Whelan Young Investigator Award was presented to Élyse Fischer, who gave a superb talk on her graduate research at Cambridge University. You can read about her work in a review she has written for our flagship journal, IUBMB Life, which will appear in a Special Issue dedicated to biochemist Eddy Fischer (who also happened to be her grandfather), who received the Nobel Prize for his co-discovery of reversible protein phosphorylation. This issue is planned for release in March 2023, to coincide with a special ASBMB-IUBMB Symposium entitled Tribute to Eddy Fischer: Reversible Phosphorylation; this will take place in Seattle, USA as part of the annual ASBMB meeting, this year called DiscoverBMB. The IUBMB Executive Committee will be meeting there, and we hope to see many of you there.

At the 2022 Congress in Lisbon, President elect Dario Alessi and I met with two remarkable trainees from Africa, John Teibo and Olorunfemi Molehin, to find out more about how the IUBMB can help to provide opportunities to trainees on the continent.

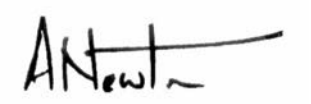
This conversation was inspirational in the creation of the IUBMB Africa Initiative. This initiative is dedicated to providing research and training opportunities to the enormous talent in Africa. Our first initiative has been to commit funds to send five trainees from Africa to the FEBS-IUBMB-ENABLE conference. We awarded fellowships to trainees from Morocco, Nigeria, South Africa, and Tanzania to attend the meeting in Seville, Spain in November. Second, we are working with colleagues in FEBS to put in place a program to allow students from Africa to visit labs in Europe for up to six months, a program we plan to launch in early 2023. Third, we hope to commit to sending five trainees from Africa to the Young Scientists Program at the IUBMB triennial Congress and the Youngs Scientists Forum at the annual FEBS meetings moving forward. Providing opportunities to the enormous talent in African is a major priority of the IUBMB for the coming year.

We have also put in place a new program, Relocation Support for Displaced Trainees, to support graduate students and postdoctoral fellows displaced from their labs because of natural disasters, war, or other events beyond their control that interrupt their training.

Our new programs, the Africa Initiative and the Relocation Support for Displaced Trainees, require us to secure new funding and we are exploring obtaining support from companies or philanthropists, especially to help Africa. You can also help: we have put in place a donation platform on our website. Here you can make charitable donations to the IUBMB (either as US or Europe tax deduction) with 100% of your funds going directly to our programs. This is because the leadership of the IUBMB is 100% on a volunteer basis, so any donation is directed straight to the activities the donor is interested in.

Lastly, it has been a year of remarkable achievements by our IUBMB Trainee Initiative, which was just established in January of this year. They did not lose any time - their first event (hosted by the FEBS team) was held in March 2021 – a huge success by any standards, attended by trainees in 31 countries. Entitled *The Fun Side of Structural Biology*, it covered protein folding and the game Foldit – with Brian Koepnick even putting a special IUBMB protein folding puzzle on the Foldit website. The FASBMB team organized *Africa's The Great Decode*, the FAOBMB team organized *The Graduate School Road Map*, and the PABMB team organized *Advancing Access: Open Access Publishing & Preprints in the Biomolecular Sciences* with Randy Schekman, founding editor of eLife, and Richard Sever, co-founder of BioRxiv. Additionally, led by Chair Élyse Fischer (USA) and members Bri Bibel (USA), Hannah Pletcher (USA), Zainab Rafat (India), and Victoria Patten (South Africa), the group will be presenting a workshop at the ASBMB DiscoverBMB meeting entitled *Empowering trainees: A roundtable with the IUBMB Trainee Initiative*. We are so proud of their accomplishments and look forward to what Year Two of the Initiative holds for biochemists around the world. Trainees are our future!

It's been an exciting year, with many new initiatives, new collaborations, and new opportunities. I look forward to continuing to work with my friends and colleagues on the IUBMB leadership team, our partners in other societies, and our trainees to provide opportunities to promote biochemistry and molecular biology around the world. And as always, I welcome suggestions from the global community of biochemists and molecular biologists on how the IUBMB can better serve you.



Alexandra Newton, PhD
President, IUBMB

IUBMB TRAINEE INITIATIVE

An Update on the IUBMB TI

Starting from scratch last year, the IUBMB trainee initiative (TI) has made good progress. Since the last IUBMB newsletter we have hosted two events to promote trainees. In July our FAOBMB team led a roundtable discussion "The Graduate School Roadmap" and in October our PABMB hosted Drs. Randy Schekman and Richard Sever who spoke up on open access publishing and preprints in the biomolecular sciences. Soon after the new year we will be hosting an event on the importance of scientific public engagement (stay tuned for all the details!). The TI is also excited to announce that they will be hosting a special interest group for trainees at the DiscoverBMB meeting in Seattle next March. More information about our initiative and what is next for us can be read in a short interview we had with the FEBS junior initiative: https://network.febs.org/posts/the-iubmb-trainee-initiative.

Advancing Access

~ Sunnie Kong, Bri Bibel, & Hannah Pletcher ~

On October 25th, the IUBMB Trainee Initiative hosted its most recent event - ***Advancing Access: A Conversation about Open Access Publishing & Preprints in the Biomolecular Sciences***. This webinar highlighted open access publishing, which is "a broad international movement that seeks to grant free and open online access to academic information, such as publications and data" (What is open access?). We were honored to hear from Dr. Randy Schekman, founding editor at eLife, and Dr. Richard Sever, co-founder of BioRxiv. Dr. Schekman discussed the current publishing model, the advantages of open access publishing (OAP), and the progress that has been made in adopting the OAP model. Dr. Sever discussed the importance of sharing preprints in response to the length of the traditional publishing process. He spoke about BioRxiv and its advantages for early career researchers. We also discussed PreLights, a preprint highlights service. The webinar was an open conversation tackling many aspects of scientific publishing, and if you missed it, we recommend checking out the recording and reading their abstracts.

We were especially excited to host this webinar as we were celebrating International Open Access Week and working towards the IUBMB Trainee Initiative's goal of increasing accessibility and opportunities to trainees around the world. We were thrilled to have participants from 12 different countries tuning in live, and we hope that the recording reaches many more. This event was hosted by our Pan American Association for Biochemistry and Molecular Biology (PABMB) representatives: Bri Bibel, postdoctoral researcher at the University of California, San Francisco; Sunnie Kong, PhD student at the University of California, Berkeley; and Hannah Pletcher, PhD candidate at Washington University in St. Louis.

IUBMB TRAINEE INITIATIVE

The Graduate School Roadmap

~ Osvaldo Contreras, Ryan C.V. Lintao, Marta Orlowska & Zainab Rafat ~

The Federation of Asian and Oceanian Biochemists and Molecular Biologists (FAOBMB), represented by Osvaldo Contreras, a postdoctoral scientist at VCCRI, Australia, Ryan Lintao, a MD-PhD candidate at the University of Philippines Manila, Marta Orlowska, a Ph.D. candidate at QIMR Berghofer and QUT, and Zainab Rafat, a Master's student at Aligarh Muslim University in India, organized a roundtable for the third event of the IUBMB trainee initiative on July 31. They named it ***The Graduate School Roadmap: A Roundtable Discussion***. The event provided insight into graduate school admissions at some of the most renowned institutions around the world. It also urged our fellow Asian and Oceanian students to not hold back from applying to their dream universities.

It was an honor to have a few very prominent researchers around the table. Professor James Murphy, the Head of the Inflammatory Division at the Walter & Eliza Institute of Medical Research in Australia, who didn't hesitate to share with our audience the qualities he seeks in students.

Other brilliant early career scientists like Haaris Ahsan Safdari who is currently pursuing his Ph.D. from the Institute of Biochemistry and Molecular Biology at the University of Hamburg in Germany; Dr. Yen Tran, a postdoctoral researcher at the Australian Regenerative Medicine Institute at Monash University in Australia and Robert Aguilar, a Ph.D. candidate at the Department of Biological Sciences at Columbia University in New York City, sat down with us to answer some of the most confusing and common questions asked by our audience.

Marta Orlowska, a member of our very own team, sat among the guests at the table. She shared some of her experiences with graduate school admission and her decision to pursue a Ph.D. straight after undergraduate studies.

Robert, who also represented GradMAP Philippines at the event, explained how to draft a statement of purpose and format a CV/ resume through an enlightening presentation.

Furthermore, we included a list of scholarships and internships from all over the world for trainees studying biochemistry, molecular biology, and related fields. There is also a recorded version of the webinar available on our YouTube channel and some worded highlights for those who missed it.

We were thrilled to host participants from 28 countries and we hope the recorded webinar reaches many more.

IUBMB TRAINEE INITIATIVE

So what's up next?

The first part of the event will host Dr. Mark Roberts

Why should scientists be engaging in the public?
By Mark Roberts

The TI will be running a two-part webinar series on the importance of scientific public engagement. In the first part the FEBS team is teaming up with Dr. Mark Roberts who will run a public engagement training session at the end of January! More information to follow soon!

The second part of the event will host Dr. Julius Welsche

Dr. Julius Welche – a name you might want to know if you want to become a successful science communicator! Dr. Welsch has a scientific background himself and runs his own podcast since 2021. There, he is showing you together with his guests how to transmit your science to a broader audience. From content strategies to social media – a cut through the entire world of science communication. This is your simple, efficient and enjoyable journey to share your research!

Get a first powerful kickstart during the event and see Dr. Julius Welsche as well as your TI-members live!

Discover BMB Special Interest Group:
Empowering trainees: A roundtable with the IUBMB Trainee Initiative

The TI is also very excited to announce that they have been accepted to host a *special interest group* at the Discover BMB meeting in Seattle, March, 2023.

At this interest group session, we will foster international community-building among trainees and introduce them to our initiative, including events, resources, social networks and an online forum for trainees. A roundtable discussion will offer guidance and advice on key topics of interest to trainees. There will also be an opportunity for trainees to provide feedback on how the initiative can better support them. This is an opportunity for trainees to meet, network and initiate lasting friendships!!!

IUBMB Trainee Initiative
- Monthly Minutes -

October 2022 - FAOBMB

From us and for us

Hello and welcome to our first IUBMB TI minutes. It is a pleasure!

This time we will hear from **Zainab Rafat!** She is currently living in Saudi Arabia and will soon start her master's degree. As a member of the FAOBMB we will hear more about their structure and get to know something about their region

What we are up to !

A few weeks ago, the FAOBMB launched the "Graduate School Roadmap" event. Here, scientists from all around the world had their questions answered regarding graduate schools and Ph.Ds. The event was a genuine success! According to Zainab - who was quite excited about the outcome - everything went smoothly and their panel of researchers from different levels as well as profs did a solid job.

Interestingly, it was her first time being the host in such an event, and although being nervous, she did a great job. Congratulations! What can we learn? She advises us to organize speakers or panelist early on to not get pressured (as if that would have happened to the FAOBMB team… :D). However, setting up such an event in only 15 days shows what great team-work can achieve!

A glimpse in the future *

New ideas for the FAOBMB region?

No big deal… Our scientists from Asia and Oceania meet monthly to catch up and write a sheet with ideas to be realized. Zainab gave the impression that she is already waiting to launch the next event.

Still, going forward with Bri's idea to edit the "Statement of Purpose" from our followers was her favorite idea. Since we have the experience, the IUBMB TI would be perfectly suited to help our fans. The many requests could indeed be difficult. Therefore, an exchange between 2 members each week or month might be a solution.

Our knowledge is your knowledge

Zainab told me she is super interested in pharmacology and toxicology. Everything from pharmacodynamics to -kinetics (that is what and how fast something happens to a drug in our body) is fascinating her. This is also what she is looking for in a master's thesis – how drugs interact with our biochemistry might be her topic from September on. What exactly will she be investigating has not yet been decided. Attention! Zainab advised an amazing website – a gold mine for curious researchers like us! **Phys.org** publishes daily short and captivating articles about new scientific research and ideas. From Physics to Biology, everything you want to know!

Something personal ?

It was very interesting to me hearing more about Zainab's home Saudi Arabia. Lately, the country has been very progressive, supporting women and becoming culturally & religiously open. In science, women are well acquainted and even universities devoted to female students are built. However, she points out that support for women in other regions such as Syria, Palestine or India is still needed – due to political and monetary reasons. But also, because some cultures like the one in India (she knows best since she studied in India) merely values studies in medical or technological fields.

Also, the subject of biochemistry and therefore, the IUBMB is not very well known in Asia – something for us to change! Zainab just got to know about us through Bri (shout out to her). Finally, Zainab invites everyone to join the monthly meeting, in order to connect even closer! Thus, simply contact her or me to get involved.

That's it for this month – thank you guys a lot for your interest. Keep curious and I hope you enjoy Phys.org and leaving me your opinion in the survey! See you next time.

From us and for us

Hi there, nice to see you again!

Our second interviewee is **Oswald Yedjinnavenan Djihinto** – a member from the Federation of African Societies (FASBMB). Currently he lives in Ouidah in Benin (that is pretty much at the Gulf of Guinea), so let's dive in and see what is going on there…

What we are up to !

The last event launched by the FASBMB was an introductory session to bioinformatics in Africa. Oswald explained: "Where I study, there is a lack of interest in bioinformatics, also resources are scarce and thus, we wanted to provide students with a basic understanding and a sense of what is possible. The event was a success; however, I was a bit disappointed to see that although participants from other continents were present, we couldn't capture anyone from West-Africa. In other words, events held in English do not attract French-speaking folks. This is something I want to change."

I asked what Oswald could advise for organizing events: "Don't get demotivated when trying to recruit speakers and they don't answer right away. Stay strong and persist, often, this is the key to success!"

A glimpse in the future *

You might wonder what is next on the agenda? Buckle up for an amazing idea!

Hey Oswald, what will be your next event? "We are not sure yet and will discuss this in our next meeting. However, I see many students graduating from their masters still lacking solid experience on how to do a PCR or even electrophoreses. Since many labs and universities lack the resources, students leave with insufficient skills. Therefore, my dream would be to create a platform where students could visually learn these techniques. That would help with the language-barrier and, also, provide a great tool for practical learning lab-techniques. Something like an online lab in which you can click tools and do experiments virtually – guided with some information. A big project but that would really make an impact, I think."

Our knowledge is your knowledge

Malaria is still a huge problem in Africa, especially since many mosquito populations develop resistance against common insecticides. Oswald is also researching in this area, trying to find new targets for developing alternative vector control strategies.

What is your most promising target at the moment?: "We have some in the pipeline but a cytochrome which is essential in the 20-Hydroxyecdysone would be the top candidate" (For all whose biology classes are looonnggg in the past, that is a hormone essential for insect growth & development).

Anything interesting you stumbled upon lately? "Indeed, a paper describing a new method for improving malaria diagnosis. The new method "Deki reader" shows that previous tests had a pretty high false-positive rate! Meaning that many people were treated unnecessarily (https://doi.org/10.1186/s12936-018-2356-8)."

Something personal ?

In my conversation with Oswald, it became very clear that research in Africa lacks a lot of resources. "Students and researchers give all they got to advance but many fundamentals are just missing." Some time ago he reminded me: "Nobody here knows what sustainable laboratory practice should be, just because we even struggle getting our experiments done." Thus, let's take a moment to appreciate their fight!

Anything else you want to add Oswald?: "The IUBMB TI is doing great work! However, here in West-Africa, there is very few spreading of the word about our initiative. The infrastructure on our institutions is simply not supporting such initiatives. That is very sad because so many people would benefit!" can be our target soon too!

However, Oswald seemed to be very engaged and maybe, one day, he will be the one changing the system. All the best to you and that the French community can be our target soon too!

It was again very much of a pleasure. See you next time!

IUBMB Trainee Initiative
- Monthly Minutes -

December 2022 - PABMB

From us and for us

Welcome dear friends :)

Today, we will hear from **Hannah Pletcher** a member of the Pan-American Association (PABMB).
She pursues her PhD in St. Louis (Missouri) being in her second year. Let's jump right into the delightful interview we had!

What we are up to !

"Our last event was "Advancing Access: Open Access Publishing & Preprints in the Biomolecular Sciences". It was perfect timing! We hosted our event within the International Open Access Week and eLife just implemented some changes in their publishing regimen. In this way, our event was even advertised on the International Open Access Week website! Thus, I think to do events which coincide with current topics is a powerful idea."

What advice would you personally want to share with others? "During the first few minutes of our event, the chat didn't work… I was about to freak out since I have never been the host in such a big session. However, the two things to remember: Stay calm, things always seem bigger when they just happened. Also, I had a great team, props to Charysse, Bri and Sunnie, this made me feel amazingly supported and secure!"

A glimpse in the future *

Since their last event has just taken place, I asked Hannah what she would like to see within the IUBMB TI to happen in the future:

"I know it was already mentioned but I really think that a peer-editing service for our trainees would be great. However, I could also envision something like a method-club to be pretty helpful. It doesn't necessarily need to be an online webinar but to introduce various methods to our audience could be of big interest to them. We implemented something similar in our own lab. In this way you not only learn something new, but you also might get some new inspiration for how to progress with your own research."

To my mind, this idea could be the spark for new collaboration especially if you don't have the respective machines in your lab. A very neat idea!

Our knowledge is your knowledge

Did you know that there are exactly 12 phosphatases to be found in the mitochondrion? Hanna did since she works on the PPTC7 Phosphatase. I asked her about why and what she is doing concretely

"The knockout of this phosphatase is perinatally lethal – a very strong phenotype comparatively. Mice with a PPTC7 knock out suffer from hypoketotic hypoglycemia (that is too low glucose as well as amino-acid metabolic products nourishing yourcells). However, I will probably rather work with cell lines, like the incarnation of a true biochemist:D

Hannah share with us some interesting literature! "I love to read about life-stories of researchers. Thus, the book "Headstrong: 52 Women Who Changed Science-and the World" is amazing! Otherwise, "lessons from plants" is a great book definitely worth a look.

Something personal ?

"I am soo excited to finally meet all the IUBMB TI members during our meeting in December! Honestly, I feel so lucky to be a part of this and I have benefitted and learned so much. I felt so privileged to have opportunities and resources to inspire me when I was a kid. And now, I want to contribute to enable others to experience the same feeling."

With these truly heart-warming words, I tried to get anything funny out of Hannah given our very lively conversation.

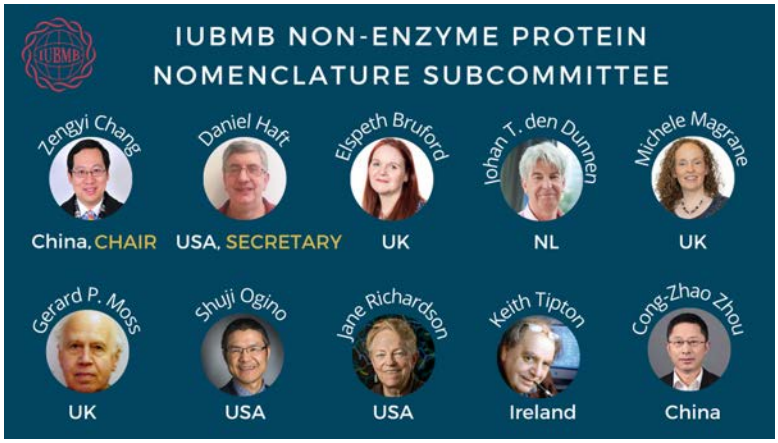
"Should I be honest with you? (Luckily, for me that was a rhetoric question). You probably know the phrase "the mitochondrion is the powerhouse of the cell" right? It makes my day every time I can say this phrase in the lab - even better, I can use it in every single presentation I give, aannnddd if I explain to relatives my work, I can use it too! Something everyone understands" ;)

Hopefully, you leave with a smile! Keep it up during the week ;) See you next time!

The Non-Enzyme Protein Nomenclature Subcommittee of IUBMB

Meeting Report

The fourth meeting of the Non-enzyme Protein Nomenclature Subcommittee of IUBMB was held online on November 30, 2022.



Before this meeting, Dr. Daniel Haft (from the National Center for Biotechnology Information or NCBI in short, USA) was appointed as the Secretary of this subcommittee.

By the end of the meeting, the following ideas appeared to have been endorsed generally by the membership.

1. We should have a database, of explicit formed protein names.

2. Relationships between names should be captured. This includes:

a. Alternate names (that represent less favored exact synonyms)

b. Parent-child relationships, e.g. “class A beta-lactamase” is a child of “beta-lactamase”

3. Prokaryotic names are nominated to be a component of the first set of names to incorporate, as this as this focus could synergize nicely with existing efforts at organizations such as NCBI and EBI to build rule-based systems for the functional annotation of proteins, while steering clear for now of some complexities in eukaryotic annotation – alternate splice forms, different names favored for similar proteins in different species, and possible redundancies with current or future efforts at various model organism databases.

4. Extension to EC activities, to differentiate proteins names by subunit designation, by type of cofactor used, etc., is another possible large set of easily accepted names.

5. There was some enthusiasm for gearing us up to be able to consider, then approve or reject, names submitted to us by outside parties with appropriate skills, e.g. specialty databases, authors of nomenclature papers. Judicious use of consultation with established databases, plus other sources of crowd-sourcing, seems more realistic than running a purely in-house effort to approve some names as official while rejecting others.

The Non-enzyme Protein Nomenclature Subcommittee of IUBMB welcomes all types of comments and suggestions from the International community *(please send to Dr. Zengyi Chang: changzy@pku.edu.cn) or Daniel Haft: daniel.haft@nih.gov*).

DR FRANCIS AMARA
IUBMB Ambassador for FASBMB

STEM Center: Computer and Bioscience Youth Program

The STEM Education Center is located at the Sierra Leone Church Mission (SLC) Campus, Kenema, Eastern Province, Sierra Leone, West Africa. Kenema is the third largest city in Sierra Leone, with a major hospital and university.

The Computer and Bioscience Youth Program (the Program), which started in 2021 as an After-school project with 35 students, now hosts 115 students. Inner city youths in Class 4 (ranging in age from 10-11 years), in private and government-supported primary schools participate in the Program, with slightly more girls than boys. They are divided into tutorial groups to collaborate and learn together as a team. They engage in hands-on experiments and activities to gain new knowledge and skills in computer science, robotics, and bioscience.

They are excited to explore several topics such as:

- Purpose of computer and functions of their components
- Computer login verification, soft and hardware
- Webpages and application platforms
- Word and PDF documentation
- Coding of drones
- Robotics
- Cell as a structural and functional unit of living organisms
- Function of a microscope and its components
- Preparation and staining of tissue slides of onion and cheek cells
- Capturing and editing images of onion and cheek cells on a digital microscope

DR FRANCIS AMARA
IUBMB Ambassador for FASBMB

The students are excited to learn about the cytoplasm, cell membrane, and nucleus of a cell under a digital microscope, and to explain their functions. They can see differences between a plant and an animal cell. For example, they can see the double cell membranes of onion cells in contrast to a single cell membrane of cheek cells. They are also equally excited and eager to code drones to fly, and command robots with a basic programming language (Scratch) to do simple and complex maneuvers. Further, the students are now confident to use computers to do their class assignments and projects.

At the end of the Program, the teams are given the opportunity to share their experiences and to provide feedback. Overall, they are satisfied and happy with the Program so far and would like it to continue for their classmates. The students found the activities fun to do and the tutors and coordinators helpful, kind, and approachable. Together with their parents, the students were invited to a graduation ceremony to receive a Certificate of Participation for successfully completing the Program.

DR FRANCIS AMARA
IUBMB Ambassador for FASBMB

Mr. Mohamad Kanneh teaching digital microscopy to students in the Program.

29th FAOBMB Conference

Terrence Piva reports on the fully online FAOBMB Conference hosted in Shenzhen, China, and the virtual FAOBMB Council meeting.

The 29th FAOBMB Conference incorporating the annual 2022 meeting of the Chinese Society for Biochemistry and Molecular Biology (CSBMB) as well as sessions sponsored by the International Union of Biochemistry and Biology (IUBMB) was held from 20–22 October 2022. This meeting was intially scheduled to be a hybrid meeting, but due to an outbreak of COVID-19 in Shenzhen, this conference was run online, attracting over 1,000 participants.

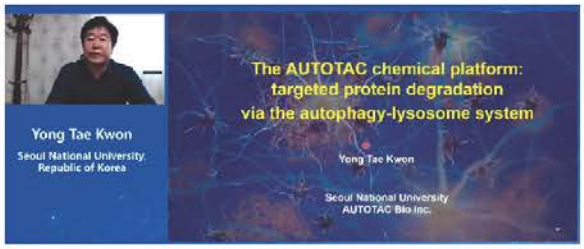
The theme was Biochemistry and Molecular Biology for Human Health. The conference web portal allowed registrants to view as well as move easily between the online presentations, which were delivered in real time. Registrants were also able to view posters and listen to short recordings about the posters. Apart from one or two minor glitches that were quickly rectified, the conference ran extremely well in the online format.

The conference contained nine Plenary lectures and and 17 parallel sessions. The sessions covered broad aspects of molecular sciences, including genomics and proteomics, virology, lipidomics, immunology, cell biology, plant biology, metabolism and enzymes. These sessions were populated by 90 invited speakers, mostly from FAOBMB countries. There were 65 posters hosted online during the conference. There were two Australian plenary speakers, Nirma Samarawickrema (Monash University) and Archa Fox (University of Western Australia).

Akira Kikuchi at the Welcome Ceremony.

The Welcome Ceremony was chaired by Paul Gleeson (FAOBMB Fellowship Chair) and featured Lin Li (CSBMB President) and Akira Kikuchi (FAOBMB President). Baoliang Song (China) delivered the first Plenary lecture on the role the deubiquitylase USP20 plays in cholesterol metabolism and how inhibitors of this enzyme may be used to treat diseases associated with hypercholesterolaemia. The second Plenary lecture was delivered by Rui-Ping Xiao (China), who discussed the role played by the myokine MG53, in particular its E3 ligase activity, in cardiometabolic function, and how it can be used to devise strategies to treat ischaemic heart disease.

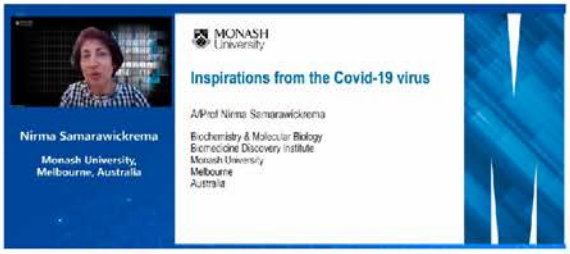
Rui-Ping Xiao's Plenary lecture.



2022 FAOBMB Award for Research Excellence winner, Yong Tae Kwon, delivers a Plenary lecture.

The recipient of the 2022 FAOBMB Award for Research Excellence, Yong Tae Kwon (Republic of Korea), delivered the third Plenary lecture. This award is given annually to a distinguished biochemist or molecular biologist from the FAOBMB region. Yong Tae's presentation focussed on the AUTOTAC technology, which can selectively target proteins to autophagosomes for degradation in the autophagosome/lysosome system. This talk was highly informative and initial studies on the use of AUTOTAC in the degradation of tau neurofibrils in Alzheimer's disease mouse models were impressive and highlights the potential use of this technology in research, drug development and clinical applications in being able to degrade specific cellular proteins. Recipient of the 2022 FAOBMB Education Award, Nirma Samarawickrema, gave the fourth Plenary lecture. Nirma spoke of the challenges faced by all academics who had to switch from classical face-to-face teaching to online as a result of COVID-19 restrictions. The use of digital technology was employed to instruct students in online lectures, workshops, practicals and lectorials as the new medium of information transfer. Given these changes in teaching, new authentic assessments had to be devised. This was a very informative presentation and highlighted the challenges all academics faced since the onset of COVID-19. The last Plenary talk on Day 1 was delivered by Hidenori Ichijo (Japan), who spoke of the role played by ASK family members in cellular stress responses.

29th FAOBMB Conference



2022 FAOBMB Education Award winner, Nirma Samarawickrema, delivers a Plenary lecture.

Archa Fox's Plenary lecture.

The afternoon sessions of Day 1 and sessions on Day 2 were devoted to presentations arranged in 17 different sessions, and a workshop on scientific writing and publishing. On the afternoon of Day 2, the Education in Biochemistry and Molecular Biology session was co-chaired by Grace Yu (Philippines) and Cong-Zhao Zhou (China), and included presentations on the future of biochemical teaching followed by a roundtable discussion. It was easy to move online from one session to another. In between the sessions and Plenary talks, there were advertisements of new research products and future conferences, such as the FEBS Congress in Tours, France (2023) and BioMolecular Horizons 2024, the IUBMB Congress which will be held in Melbourne. I enjoyed the musical videoclips of cell metabolism.

Metabolism videoclip shown during session breaks.

The first Plenary talk on Day 3 featured Archa Fox, who spoke of the role played by the DNA and RNA binding protein, NONO, in neuroblastoma. This was a very interesting and highly informative presentation of this unusual nucleic acid binding protein. Incoming FAOBMB President, Joon Kim (Republic of Korea), delivered the second Plenary lecture on the development of anti-fungal drugs to treat candida infections as a result of changes to *C. albicans* exposed to stress. The last two Plenary lectures were delivered by Shengcai Lin (China) and George Fu Gao (China). Xiaolong Liu (CSBMB Vice President and Secretary General) chaired the conference Closing Ceremony and handed the baton to Tuangporn Suthiphongchai (Thailand) to host the next FAOBMB Conference in Bangkok in November 2023.

FAOBMB Council meeting

The FAOBMB Council meeting was held via Zoom on 5 October 2022, with Australian participants Terry Piva as the ASBMB delegate and Paul Gleeson as Chair of Fellowships Committee. The meeting was attended by delegates from 18 of the 21 constituent member societies/countries, along with the six members of the Executive Committee. The Council meeting was chaired by the FAOBMB President, Akira Kikuchi (Japan), and the Secretary-General, Sheila Nathan (Malaysia). Akira discussed the impact that COVID-19 had on the FAOBMB's activities, especially in regard to hosting a face-to-face meeting. He looked forward to seeing everyone attend the FAOBMB Conference in Bangkok in 2023 in person. Akira discussed the role of the FAOBMB's interactions with the IUBMB and highlighted the role that biochemistry and molecular biology will play in overcoming issues that currently affect the region. He also discussed the key role that FAOBMB plays in bringing scientists together. In 2023, Joon Kim (Republic of Korea), will assume the role as President and will serve in this role until the end of 2024. Shannon Au (Hong Kong) was re-elected as FAOBMB Treasurer for another three-year term.

Reports on the previous FAOBMB Council Meeting (November 2021) and the FAOBMB Executive Committee Meeting (April 2022) were tabled. There were discussions on the Council's finances, as well as reports from the Education Committee, Fellowships Committee, IUBMB, as well as discussions on the FAOBMB Awards. Reports from the 16th FAOBMB Congress in Christchurch (2021), 29th FAOBMB Conference in Shenzhen (2022), 30th FAOBMB Conference in Bangkok (2023) and 17th FAOBMB–26th IUBMB Congress in Melbourne (2024) were tabled. The Committee approved changes to the FAOBMB Awards and Fellowship Schemes, as well as appointing an Auditor and Archivist (Phillip Nagley). Zengyi Chang (China) was made an Honorary Member of the FAOBMB.

The next FAOBMB Conference will be held in Bangkok, Thailand, from 22–25 November 2023.

As this is my last report as the FAOBMB Representative for ASBMB, I would like to thank all who have assisted me in this role over the past five years. I wish Nirma Samarawickrema all the best as the incoming FAOBMB Representative for ASBMB.

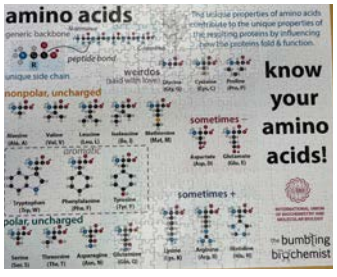
This report, written by Terrence Piva, was published in the December 2022 issue of the *Australian Biochemist* and is reproduced with his permission.

BRIANNA BIBEL
IUBMB Trainee Ambassador

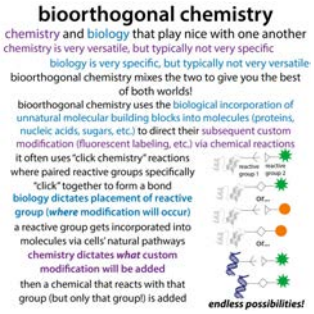
Bri Bibel

Has it been 6 months already?! Time flies when you're having fun - and wow have these last months been fun! I've been having lots of fun diving into research in a new lab, and lucky trainees around the world have been having fun doing amino acid puzzles! Some of you might be familiar with my amino acid overview graphic - the one where I, very lovingly, describe glycine and proline as "weirdos." Well, IUBMB President Dr. Alexandra Newton is a huge fan. So much so that she had some puzzles of it printed. The two of us had a lot of fun with ours, as did trainees who stopped by the IUBMB booth at the Global Biochemistry Summit, so I thought, why not share the fun?! I approached Dr. Newton with the idea of holding an amino acid poetry contest, with amino acid puzzles awarded to the winners. Thankfully, she loved the idea - and so did scientists from around the world. We received 19 entries (from around the globe) and over 100 votes. Now, the pics are rolling in of happy winners showing off their completed puzzles. I'm hoping that we can hold more contests in the future - and maybe even print some additional puzzle designs - so make sure to stay up-to-date with the IUBMB so you don't miss out!

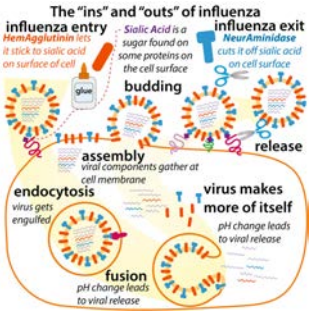
In addition to the puzzle fun, I've continued to have fun helping teach people biochemistry concepts through my weekly Bri-fings from the bench. Some highlights from the last 6 months have been a highlight of Carolyn Bertozzi's Nobel Prize-winning research on bioorthogonal chemistry https://bit.ly/bioorthogonal_prize; the science of flu shots http://bit.ly/flushotscience; and how home blood type tests work https://bit.ly/abobloodtypes.



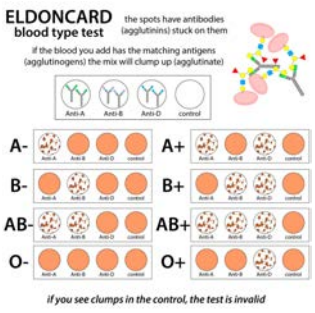
Amino Acid Puzzle



Bioorthogonal Chemistry



Science of Flu Shots



Blood Type Test

I also had the pleasure of co-hosting the IUBMB Trainee Initiative's recent event, Advancing Access: Open Access Publishing & Preprints in the Biomolecular Sciences, which you learn about in the IUBMB TI update section.

As always, I am grateful to the IUBMB for providing me the opportunity to serve as trainee ambassador and I greatly look forward to what the next 6 months will bring!

ENABLE 2022

THE PERFECT TANDEM:
How technology expands the frontiers of biomedicine

Report by Daniel R. Dries, Chair, Fellowships Committee (USA)

The first ever FEBS-IUBMB-ENABLE Conference was hosted in November by the Institute of Biomedicine Sevilla (IBiS) in beautiful Seville, Spain. A scientific conference organized by and for graduate students and postdoctoral fellows, ENABLE gathers early trainees for three days of scientific talks, poster sessions, professional development workshops, and roundtable discussions. This year's event drew more than 300 researchers representing over 40 countries spanning five continents.

Originally supported by funding from the European Union Horizon 2020 initiative, ENABLE (the **E**uropea**n** **A**cademy for **B**iomedica**l** Scienc**e**) began as a collaboration between IRB in Barcelona (Spain), RIMLS in Nijmegen (The Netherlands), NNF CPR in Copenhagen (Denmark), SEMM in Milan (Italy), and Scienseed, an agency specializing in science communication agency. After the initial funding for ENABLE ended, IUBMB and FEBS partnered to continue this wonderful event through 2025 to support the development of early trainees. The entire conference – from scientific sessions to social events – is planned by an incredibly talented and hardworking group of students. The Scientific Organizing Committee is comprised of pairs of representatives from the four collaborating research institutions (IRB, RIMLS, NNF CPR, and SEMM). The Local Organizing Committee is comprised of trainees from the host institution and is responsible for logistical needs and social programming.

The members of the scientific and local organizing committees for FEBS-IUBMB-ENABLE 2022

Activities and Scientific Symposium

The conference opened with an optional evening walking tour of beautiful Seville. Participants gathered at Casa de la Ciencia before walking through City Center, with a social Bingo game along the walk. Sights included Plaza de España, Real Fábrica de Tabacos, Sevilla Catedral, and Real Alcázar, finishing with drinks, food, and games in the popular nightclub district of Alameda.

La Giralda of Seville Cathedral

Day 1 began with a welcome from the various organizers of the conference. The scientific program was organized into four sessions, each with two keynote speakers:

- **Innovation**

Matteo Iannacone (San Raffaele Scientific Institute, Milan, Italy) and César de la Fuente (University of Pennsylvania, Pennsylvania, USA)

- **Computational Biology and Artificial Intelligence**

Elena Papaleo (Technical University of Denmark, Copenhagen, Denmark) and Joaquín Dopazo Blázquez (Fundación Progreso y Salud & the Institute of Biomedicine of Seville, Seville, Spain)

- **Basic Research**

José López Barneo (Institute of Biomedicine of Seville, Seville, Spain) and Daphne Cabianca (Institute of Functional Epigenetics, Munich, Germany)

- **Clinical and Translational Biomedicine**

Fathia Mami-Chouaïb (INSERM, Gustave Roussy Institute, Villejuif, France) and Laura Cancedda (Italian Institute of Technology, Genoa, Italy)

Each scientific session also featured three short talks selected from the submitted abstracts of registrants. Days 1 and 2 of the conference also featured poster sessions in the beautiful atrium of the University Hospital Virgen del Rocio. Two poster sessions each day – one mid-morning and another mid-afternoon – gave attendees the opportunity to share science, food, drink, and good company with one another. Both days also closed with some very special events. Following dinner on Day 1, attendees gathered for a friendly showing of pub talks – brief discussions from additional abstracts in a relaxed setting over a drink. Day 2's scientific session ended with a discussion on open science, after which attendees enjoyed one another's company during a banquet at a restaurant over the Aquarium of Seville.

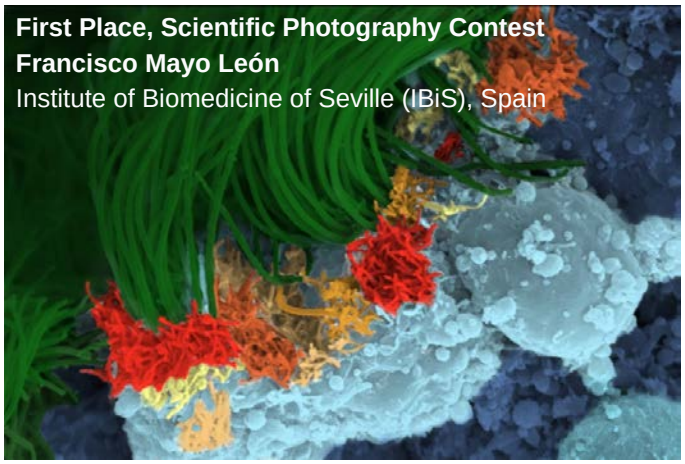
Day 3 was a Career Day, fully devoted to trainees' professional development. The day included workshops on entrepreneurship, writing a research paper, sustainability, non-academic careers, presentation skills, career identity, networking, grant-writing, becoming an educator, job interview skills, and landing a job in industry. Led by experts from a variety of settings, workshops were well-attended and highly engaging. In addition, there was an opportunity/job fair, career chats with esteemed mentors, and a panel discussion on transferable skills.

Day 3 closed with a ceremony led by a history of the ENABLE Conferences from Dr. Joan Guinovart, past President of IUBMB and under whose leadership ENABLE began. And as if that wasn't enough, fourteen attendees were awarded prizes for their work at the conference: eight awardees for their short talks, three awardees for the pub talks, and three awardees for a scientific photography contest. Awards were sponsored by businesses, the conference budget itself, and four IUBMB and FEBS journals: *IUBMB Life*, *Biotechnology and Applied Biochemistry*, *IUBMB BioFactors*, and *FEBS Open Bio*.

IUBMB-sponsored travel award winners for the FEBS-IUBMB-ENABLE Conference

Trainees from across the African continent share lunch with Dan Dries, Chair of the IUBMB Fellowships Committee

Importantly, 73 attendees – nearly one out of every three attendees – was supported by a travel award. Travel award sponsors include the ENABLE budget itself, the Croatian Society of Biochemistry and Molecular Biology (HDBMB), and IUBMB, who created a unique mechanism to support five African trainees: Islam Ahaik (University Abdelmalek Essaadi, Morocco), Olorunfemi Molehin (Ukiti State University, Nigeria), Sikozile Ncembu (University of Cape Town, South Africa), Godfrey Temba (Kilimanjaro Christian Medical University College, Tanzania), and Pere-Ebi Toloya (University of Ibadan, Nigeria). These five outstanding young trainees – and several other African attendees – shared a lunch with Dan Dries (Juniata College, USA), Chair of the IUBMB Fellowships Committee, to discuss the unique challenges and opportunities of doing biochemistry and molecular biology research and education on the African continent. The stories they shared highlighted the talent and promise of African scientists. If you wish to help IUBMB continue to support programs such as this, please visit https://iubmb.org/about/charity-and-donations/ to see how you can support these efforts.



First Place, Scientific Photography Contest
Francisco Mayo León
Institute of Biomedicine of Seville (IBiS), Spain

Finally, IUBMB would like to commend all of the organizers on an incredibly successful first FEBS-IUBMB-ENABLE conference. In particularly, IUBMB wishes to thank the Scientific Organizing Committee for assembling a fantastic group of speakers and workshop leaders, as well as the Logistical Organizing Committee for building an engaging series of activities and events that have certainly led to lifelong foundational memories. And finally, IUBMB wishes to thank the Institute of Biomedicine of Seville (IBiS), under the Directorship of Dr. Rafael Fernández Chacón, for being an incredible host for this fantastic conference. Such a meeting requires an enormous amount of energy, vision, creativity, time, and hard work, and the organizers of the 2022 FEBS-IUBMB-ENABLE certainly provided an outstanding training opportunity for our budding scientists.

ENABLE 2023

The emerging challenge: Environmental impacts on human health

23-25 November 2023 • University of Cologne • Cologne, Germany

Members of the 2022 ENABLE Scientific Organizing Committee (SOC) pass on their knowledge – and a banner – to the SOC for the 2023 FEBS-IUBMB-ENABLE Conference in Cologne, Germany.

The 2nd annual FEBS-IUBMB-ENABLE will be held in Cologne, Germany, in November 2023. Hosted by the University of Cologne (UoC), the theme of the 2023 conference will focus on how the environment – from contaminants to climate change – affects human health. By hosting, UoC will join the original four host institutions, expanding the reach and impact of this extraordinary scientific meeting created by and for postdoctoral fellows and graduate students.

Building on a successful 2022 Conference, the Scientific Organizing Committee, led by Chair Franziska Baumann (CECAD Research Center, Cologne, Germany) and Vice-Chair Andrea Mariani (European School of Molecular Medicine (SEMM), Milan, Italy) will partner with the Local Organizing Committee to deliver an exceptional scientific program, an enriching Career Day, and a series of fulfilling outreach activities. For more information, please visit https://enablenetwork.eu/.

IUBMB–FEBS–PABMB Young Scientists' Forum (YSF 2022)

Report by Ana Salomé Veiga, Co-Chair of the Organizing Committee (Portugal)

***Co-Chairs**: Dr Ana Salomé Veiga (Instituto de Medicina Molecular, Portugal) and Dr Marco Domingues (University of Lisbon, Portugal)*

Building on the tradition of the established IUBMB Young Scientists Program (YSP) and FEBS Young Scientists' Forum (YSF) events, the aims of the 2022 IUBMB–FEBS–PABMB Young Scientists' Forum (YSF2022) were to give the opportunity to young scientists to present their research, contribute to the development of their scientific knowledge and skills, and broaden their professional network.

The YSF2022 took place from 6 to 9 of July at Hotel Golf Mar, in Vimeiro, Portugal, and it was held just ahead of and in conjunction with the joint 25th IUBMB, 46th FEBS and 15th PABMB Congress. The event gathered together ca. 110 pre- and post-doctoral young scientists, representing 33 countries from all over the world, and supported to attend by grants from FEBS, IUBMB and PABMB.

The scientific programme of the meeting started with a Keynote lecture by Professor Bruno Correia (Switzerland) that showed how to engineer proteins to build better vaccines. The participants also had the opportunity to learn from other keynote lectures in different scientific fields: Professor Frack Martin (France) talked about cellular translation during SARS-Cov-2 infection; Dr. Élyse Fischer (United Kingdom), winner of the IUBMB Whelan Young Investigator Award, presented her inspiring work on novel mechanisms of mitotic checkpoint complex assembly at kinetochores; and Rohit Pappu (USA), explained to us some novel biophysical principles of biomolecular condensates.

The participants had the opportunity to join different practical exercises in key aspects to the development of their careers: Keith Elliott (United Kingdom) exposed the fundamentals for preparing a catchy CV, while Juanita Perera (Germany) gave some tips and hints on how to write a successful abstract. Mark Roberts (United Kingdom) helped the participants to understand how to engage the public with science and, Élyse Fischer gave a workshop on a very important, but sometimes neglected, topic: *The importance of self-confidence for researchers*.

Another important aspect of the scientific career is to obtain funding. To prepare them for this endeavor, the participants received valuable insights from FEBS (Alain Krol, France) and IUBMB (Ilona Grabinger, Chile) on funding opportunities available for young researchers, as well as on how to prepare a proposal (Irene Diaz-Moreno, Spain). They also learned about ethics in science (László Fésus, Hungary) and how to push their career forward out of academia (Marta Ribeiro, Portugal and Ana Patrícia Silva, Switzerland).

The young scientists had the opportunity to present their research over 3 Sessions of Selected Oral Communications, 2 Sessions of 1-minute Poster Presentations, and 2 Sessions of Poster Presentations. The presentations covered a variety of scientific fields and demonstrated the high quality of work presented by each of the participants. However, we had to choose 3 winners in each category, and after voting we congratulated João Victor Cabral-Costa (Brazil), Katja Fritschle (Germany), Nonkululeko Mkwanazi (South Africa), Gonçalo Garcia (Portugal), Maria Bzówka (Poland), Mustafa Karabiçici (Turkey), Cagla Kayabasi (Turkey), Evelyn Templeton (New Zealand), and Hudson Coates (Australia)!!!

IUBMB-FEBS-PABMB Lisbon2022 Biochemistry Global Summit: The grand come-back of the in-presence meetings

Report by Graça Soveral, Congress Co-Chair

***Co-Chairs**: Dr, Graça Soveral (Faculty of Pharmacy, University of Lisbon, Portugal) and Dr Miguel Castanho (Faculty of Medicine, University of Lisbon, Portugal)*

The 25th Congress of International Union of Biochemistry and Molecular Biology (IUBMB) was held from 9th to 14th July 2022 in the beautiful city of Lisbon, Portugal, organized by the Portuguese Biochemical Society in collaboration with IUBMB, FEBS and PABMB.

For the first time in history, IUBMB, FEBS and PABMB teamed up in a single global event - 25th IUBMB, 46th FEBS, 15th PABMB Congress, that was named “The Biochemistry Global Summit”.

The Congress was planned originally for July 2021. Only an Iberian country could host a meeting like this and Lisbon was the perfect fit because its culture inspires discoveries, innovation, and audacity. During the event Lisbon was turned into the world capital of Biochemistry.

As if the challenges of organizing a tripartite meeting were not enough, the COVD-19 pandemic brought additional hurdles and the congress was postponed to July 2022. Notably, all those involved decided to have the Biochemistry Global Summit as a strictly in-presence meeting. After the severe limitations to scientific meetings imposed by the pandemic during 2020 and 2021, it was time to recover the joy of discussing biochemistry face-to-face. The economic impact, present all along the way in the travelling and event organization sector, and the sudden political instability in Eastern Europe were a heavy burden but we succeeded. The event attracted over 1350 delegates from 62 countries, with most coming from Poland, Italy, Check Republic, Spain, Romania, Turkey, UK, Brazil, Hungary, Croatia, Germany, USA, Chile, Israel and Australia. It is worth mentioning that young scientists made up more than 70% of all participants.

The program covered a broad spectrum of timely topics in the fields of molecular life sciences, ranging from fundamental subjects and approaches to applied research with impact on human well-being and technological development. Top scientists from all over the world were gathered in a true “global summit” to present and discuss their last scientific achievements. A range of science-related educational and social topics as well as an exhibition from commerce and industry were also included.

Following the opening ceremony which included an address from the Rector of the University of Lisbon, the Opening Plenary Lecture was dedicated to Claudina Rodrigues-Pousada (Portuguese researcher that was deeply involved in FEBS activities and was past FEBS president). Sarah Teichmann (United Kingdom) gave the lecture “Mapping the Human Body One Cell at a Time”.

The Closing Plenary Lecture was given by Stefan W. Hell, Nobel Prize in Chemistry and director at both the Max Planck Institute for Medical Research in Heidelberg, Germany and the Max Planck Institute for Biophysical Chemistry in Göttingen. The lecture “MINFLUX and MINSTED provide molecule-scale resolution in fluorescence microscopy” was the FEBS Theodor Bücher Lecture.

Other plenary lectures were given by leading experts in fields of topnotch research: John F. Cryan (University College Cork, Ireland) – FEBS Datta Lecture; Cecília Rodrigues (University of Lisbon, Portugal) – FEBS Sir Hans Krebs Lecture; Pura Muñoz-Cánoves (ICREA, Pompeu Fabra University, Barcelona and CNIC, Madrid, Spain) – EMBO Lecture; Erin Schuman (Max Planck Institute for Brain Research, Frankfurt, Germany) – FEBS/EMBO Women in Science Award Lecture; Costantino Iadecola (Cornell University, NY, USA) – IUBMB E.C. Slater Lecture; Masayuki Yamamoto (Tohoku University Graduate School of Medicine, Japan) – IUBMB Kunio Yagi Lecture; Jerson L. Silva (Federal University of Rio de Janeiro, Brazil) – PABMB Lecture; Antonio Barbáchano (Spanish National Research Council (CSIC), Madrid, Spain) – he FEBS Journal Richard Perham Prize Lecture; Ian Chambers (University of Edinburgh, Scotland, UK) - FEBS Letters Award Lecture; and Boris Jokić (Institute for Social Research in Zagreb, Croatia) – FEBS Education Plenary Lecture.

In addition to the unique plenary lectures, The Biochemistry Global Summit offered participants a rich scientific programme covered by 28 symposia topics and including 56 symposia lectures delivered by the invited speakers, and 109 short talks chosen by the session Chairs from among the submitted abstracts. Moreover, the Congress programme offered a variety of Special Sessions, including those from FEBS on Gender Issues in Science, Science and Society, Research and Career Skills, and Education, and from the European Research Council on their initiatives and funding opportunities. This year FEBS/IUBMB co-organized two Special Sessions, one dedicated to new advances of the structure and dynamics of SARS-CoV-2, and a second session to share FEBS & IUBMB Fellowships and funding. A satellite conference - RiboMed Satellite Conference on RNA in Disease (organized independently by the session chairs in the context of the EU-funded project RiboMed) was made open to all the Congress participants.

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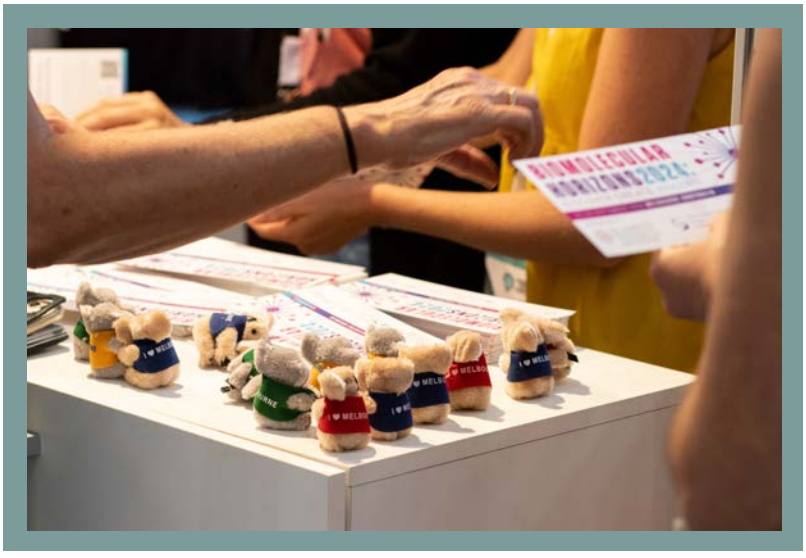
Molecular-level knowledge to Public Health impacts of biochemistry were presented and passionately discussed by the audience. There were prizes, awards, and other forms of recognition for selected presentations. Moreover, exhibition and updates from non-academic partners and industry were part of the Congress, presenting detailed information on their products and facilities in exhibition booths and in commercial sessions. Importantly, we thank the commercial sponsors for their support, and the PCO, Alive travel for their resilience during such troubled times for companies in the travelling and event organization sector.

Over 900 posters, including those submitted as late-breaking, were presented during the afternoon poster sessions from Sunday through Wednesday. The poster sessions were an excellent opportunity to meet peers and have face-to-face discussions, motivating young researchers and students to present their work in a welcoming and relaxed atmosphere setting, with a cup of coffee and drinks.

The Congress was preceded by the IUBMB–FEBS–PABMB Young Scientists' Forum (YSF 2022) that took place at Vimeiro, located on the Portuguese coast alongside a peaceful beach with a fantastic view of the endless Atlantic Ocean.

At the end of the closing ceremony, IUBMB announced the 26th Congress of International Union of Biochemistry and Molecular Biology (IUBMB) to be held in Melbourne from 22-26 September 2024.

We wish them good luck in the preparation of the event, and hope to meet everyone again in Melbourne in 2024.



IUBMB Advanced School and Workshop on "Proteins in Nanobiology and Nanobiotechnology" July 11th – 15th 2022, Meliá Paradisus, Varadero, Cuba

Report by Isel Pascual Alonso and Carlos Alvarez Varcárcel

***Co-Chairs**: Prof. Isel Pascual Alonso (University of Havana, Cuba), and Dr Silva Katusic Hecimovic (University of Havana, Cuba)*

The IUBMB "Advanced School and Workshop on Proteins in Nanobiology and Nanobiotechnology" organized by the Center for Protein Studies of the Faculty of Biology (CEP), University of Havana, Cuba, together with the Biochemistry and Molecular Biology BMB Section of the Cuban Society of Chemistry and the BIOMED network of our university took place at the Meliá Paradisus hotel, Varadero, from July 11 to 15 of this year. The School was aimed at high-level postgraduate training of young Cuban and foreign researchers in the fields of protein applications in nanobiology and nanobiotechnology. This is the third edition of an IUBMB Advanced School successfully organized by our BMB Section. On this occasion, it also had the support of BioCubaFarma Institutions such as the Center for Molecular Immunology (CIM), the Center for Genetic Engineering and Biotechnology (CIGB) and the Center for Drug Research and Development (CIDEM) as well as the Horizon 2020 "NanoOligomed" Project.

The organizing committee included professors and researchers from CEP, at the University of Havana, CIM, and the CIDEM (**Table 1**).

Table 1. Organizing Committee of the IUBMB Advanced School and Workshop "Proteins in Nanobiology and Nanobiotechnology"

Name	Gender	Country	Affiliation
Prof. Isel Pascual Alonso, PhD (Secretary of the Cuban Section of Biochemistry and Molecular Biology)	Female	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
Prof. Carlos Alvarez Varcárcel, PhD	Male	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
Prof. Maria Eliana Lanio Ruiz, PhD	Female	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
Prof. Fabiola Pazos Santos, PhD	Female	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
PhD. Maday Alonso del Rivero Antigua	Female	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
PhD. Tamara Menendez	Female	Cuba	Center for Protein Studies, Faculty of Biology, University of Havana
PhD. Vivian Montero Alejo	Female	Cuba	CIDEM, BioCubaFarma
PhD. Kalet Leon Monzón	Male	Cuba	Center of Molecular Immunology, BioCubaFarma

The opening words were given by Prof. Isel Pascual Alonso on behalf of the Organizing Committee and the inaugural conference entitled "Cancer Immunotherapy based on oncogenes: CIM experience" was given by the PhD Belinda Sánchez Ramírez, a prominent Cuban scientist from the Center for Molecular Immunology, one of the scientific leaders of the Cuban SOBERANA Vaccines against SarsCov2 (**Figure 1**).

Figure 1. Opening words by Prof. Isel Pascual Alonso, Chair of the Advanced School and Secretary of the Cuban Section of Biochemistry and Molecular Biology *(left)* and inaugural conference by the PhD Belinda Sánchez Ramírez, a prominent Cuban scientist from the Center for Molecular Immunology, one of the scientific leaders of the SOBERANA Vaccines *(right)*.

The scientific program of the Advanced School included 14 plenary lectures given by high-level professors of international prestige from academic institutions in Argentina, Brazil, Cub, Germany, Italy, Spain, an the United States including two young PhD researchers (**Figure 2**, **Table 2**).

Figure 2. Plenary lectures addressed by Profs. Mary Jo Ondrechen (United States), Nora Ventosa (Spain), Christian Betzel (Germany) and Javier Montenegro (Spain)

Table 2. List of invited speakers, nationality, affiliations and the title of their lectures

Name	Gender	Country	Affiliation	Title
PhD. Belinda Sánchez	Female	Cuba	Center of Molecular Immunology, BioCubaFarma	"Cancer immunotherapy in Cuba: CIM experience"
PhD. Christian Betzel	Male	Germany	University of Hamburg	"Compound Screening Approaches in Structure based Drug Discovery to treat Infectious Diseases"
PhD. Mary Jo Ondrechen	Female	USA	Computational Biology Research Group, Northeastern University	"Characterization of SARS-CoV-2 protein targets"
PhD. Alessandro Porchetta	Male	Italy	Universita degli studi di Roma TorVergata	"Engineering DNA-nanodevices for the rapid, single step detection of clinically relevant antibodies"
PhD. Pietro Ciancaglini	Male	Brazil	FFCLRP-USP	"Proteoliposomes: a nano-biotechnological approach applied to health"
PhD. Luis Enrique Fernández	Male	Cuba	Center of Molecular Immunology, BioCubaFarma	"Biotechnology and applications of hydrophobic Neisserial proteins-ganglioside exosome-like nanoparticles"
PhD. Javier Montenegro	Male	Spain	Ramón y Cajal, CIQUS, USC	"New synthetic materials for delivering biomolecules to cells with therapeutic applications"
PhD. Norberto Peporines Lopes	Male	Brazil	USP Ribeirão Preto	"Molecular networks and MS-imaging impact on biological active"
PhD. Ana García Sáez	Female	Germany	CECAD Research Center and Institute of Genetics, University of Cologne	"Cell death regulation at the single molecule level"
PhD. Uris Ros (young PhD researchers)	Female	Germany	CECAD Research Center and Institute of Genetics, University of Cologne	"Towards the function and regulation of MLKL in necroptosis"
PhD. Nora Ventosa	Female	Spain	Institut de Ciència de Materials de Barcelona (ICMAB-CSIC), Esfera UAB	"Protein Delivery Systems prepared by DELOS technology using compressed fluids"
PhD. Francesc X. Avilés	Male	Spain	Institut de Biotecnologia i de Biomedicina (IBB)	"Proteomics and interactomics to dectect and decipher structure-function of natural proteins for Nano/Biotech purposes"
PhD. Julia Lorenzo Rivera	Female	Spain	Institut de Biotecnologia i de Biomedicina (IBB)	"Novel enzyme-polymer nanoconjugates designed to overcome the limitations of conventional Enzyme Replacement Therapies"
PhD. Emir Salas (young PhD researchers)	Male	Argentina	Instituto de Investigaciones de Biotecnológicas, Universidad de San Martín	"Intrinsically disordered proteins: some challenges and applications (nano)biotechnology. The case of NAg1"

Postgraduate students (45) from the Faculties of Biology and Chemistry at the University of Havana, from Cuban BioCubaFarma institutions (CIM, CIGB, CIDEM, CNEURO, Center for Advanced Studies and BIOCEN) as well as different universities in Brazil, Canada, Costa Rica, Italy, Germany, Slovenia, and Spain and actively participated in the conference sessions and poster presentations where the student-teacher exchanges was promoted (**Table 3**, **Figure 3**). Within the framework of the school, the communication links between different national and foreign institutions were deepened and future inter-institutional collaborations were projected. A summary of session type and gender balance is presented in **Table 4**.

Figure 3. **Professors and students exchange during poster sessions *(top panel)* and a panoramic view of one lecture session *(lower panel)*.**

Table 3. List of participant students and country of origin

Name	Gender	Country	Affiliation
Mirtha Elisa Aguado	Female	Cuba	Faculty of Biology, University of Havana
Tanibet Alba	Female	Cuba	Center for Advanced Studies (CEA)
Fabiola Almeida	Female	Cuba	Faculty of Biology, University of Havana
Niurys Mantilla	Female	Cuba	Faculty of Biology, University of Havana
Yoanna Álvarez	Female	Cuba	Faculty of Chemistry, University of Havana
Yarini Arrebola	Male	Cuba	Faculty of Biology, University of Havana
Fernando Bordallo	Male	Cuba	Faculty of Chemistry, University of Havana
Enrique Colina	Male	Cuba	Faculty of Biology, University of Havana
Olivia Díaz	Female	Cuba	Faculty of Biology, University of Havana
Felipe Escalona	Male	Cuba	Faculty of Biology, University of Havana
Lorenzo García	Male	Cuba	Faculty of Chemistry, University of Havana
Claudia González	Female	Cuba	Neurochemistry Group, Centro de Neurociencias de Cuba
Gabriel Guerrero	Male	Cuba	Faculty of Chemistry, University of Havana
Yaiko Hernández	Male	Cuba	Center of Molecular Immunology, Havana, Cuba
Javier la O	Male	Cuba	Faculty of Biology, University of Havana
Tai Lin Lao	Female	Cuba	Center for Genetic Engineering and Biotechnology (CIGB)
Flavia Llorente	Female	Cuba	Faculty of Biology, University of Havana
Lohans Pedrara	Female	Germany	University of Cologne
Eric Pérez	Male	Cuba	Faculty of Biology, University of Havana
Ada Laura Rivero	Female	Cuba	Faculty of Biology, University of Havana
Eneida Roca	Female	Cuba	Center for Advanced Studies of Cuba (CEA), Department of Nanomaterials
Laritza Rojas	Female	Cuba	Faculty of Biology, University of Havana
Jessica Roque	Female	Cuba	Center for Pharmaceuticals Research and Development (CIDEM)
Jaka Snoj	Male	Slovenia	National Institute of Chemistry
Mario Ernesto Valdés	Male	Canada	Centre for Molecular Simulation, Department of Biological Sciences, University of Calgary
Marianna Rossetti	Female	Italy	TorVergata University of Rome
Frank Solano	Male	Costa Rica	Universidad Nacional de CR

Name	Gender	Country	Affiliation
Aymara Cabrera	Female	Cuba	Faculty of Biology, University of Havana
Pedro Nunes de Oliveira	Male	Brazil	Institute of Physics from USP
Luiz da Silva Andrilli	Male	Brazil	Universidade de São Paulo
Rocco Cancelliere	Male	Italy	University of Rome Tor Vergata
Sachy Rodríguez	Female	Cuba	BIOCEN
Sandra Figueredo	Female	Cuba	CIDEM
Lauren García	Female	Cuba	CIDEM
Lucia Méndez Gómez	Female	Spain	Universidad de Santiago de Compostela
Yeray Folgar Camean	Male	Spain	Universidad de Santiago de Compostela
Ignacio Insua López	Male	Spain	Universidad de Santiago de Compostela
Tania Pecoraro	Female	Italy	University of Rome Tor Vergata
Glenda Romero	Female	Cuba	Faculty of Biology, University of Havana
Yosberto Cárdenas	Male	Cuba	Faculty of Biology, University of Havana
Yerandy Hechevarría	Male	Cuba	Faculty of Biology, University of Havana
Anthony Aguiar	Male	Cuba	Faculty of Biology, University of Havana
Daniel Ojeda	Male	Cuba	Faculty of Biology, University of Havana
Yusniel Torres	Male	Cuba	Faculty of Biology, University of Havana
Reinier Lemus	Male	Cuba	Faculty of Chemistry, University of Havana

The closing words were given by Dr. C. Kalet León Monzón, Deputy General Director of the Center for Molecular Immunology, who highlighted the importance of this type of advanced IUBMB schools for the high-level postgraduate training of young postgraduates, and its positive impact on strengthening the research alliances between different participating institutions (**Figure 4,** *left)*.

During the closing ceremony, the most outstanding posters were awarded. The high quality of all the poster presentations were remarkable making the decision hard for the Committee. In this occasion, the awards went to: Aymara Cabrera (UH-Cuba), Ada Laura Rivero (UH-Cuba), Felipe Escalona (UH-Cuba), Enrique Colina (UH-Cuba), Tai Lin Lao (CIGB-Cuba), Marianne Rosseti (TorVergata University of Rome, Italy), Ignacio Insua (University of Santiago de Compostela, Spain) and Lohans Pedrera (University of Cologne, Germany) (**Figure 4**, *right*).

Table 4. Summary of session type and gender balance

	Female	Male
Plenary Lectures by Speakers and Organizing Committee (22)	12 (54.54%)	10 (45.46%)
Posters by Students/Postdocs (45)	22 (48.88%)	23 (51.12%)

Figure 4. **The Closing Ceremony was given by PhD Kalet León Monzón (Deputy General Director of the Center for Molecular Immunology) and Poster Awards**

A moment of special recognition was dedicated to the excellent work carried out by the Organizing Committee of the School.

In Summary, the Advanced School organized by the Center for Protein Studies, The Cuban Section of Biochemistry and Molecular Biology, jointly with the International Union of Biochemistry and Molecular Biology (IUBMB): "Proteins in Nanobiology and Nanobiotechnology" was successfully developed. The Advanced school provided participants an excellent opportunity for a rewarding scientific and personal experience. Within the framework of the school, work links between Cuban and foreign researchers were deepened and future inter-institutional collaborations were projected (**Figure 5**).

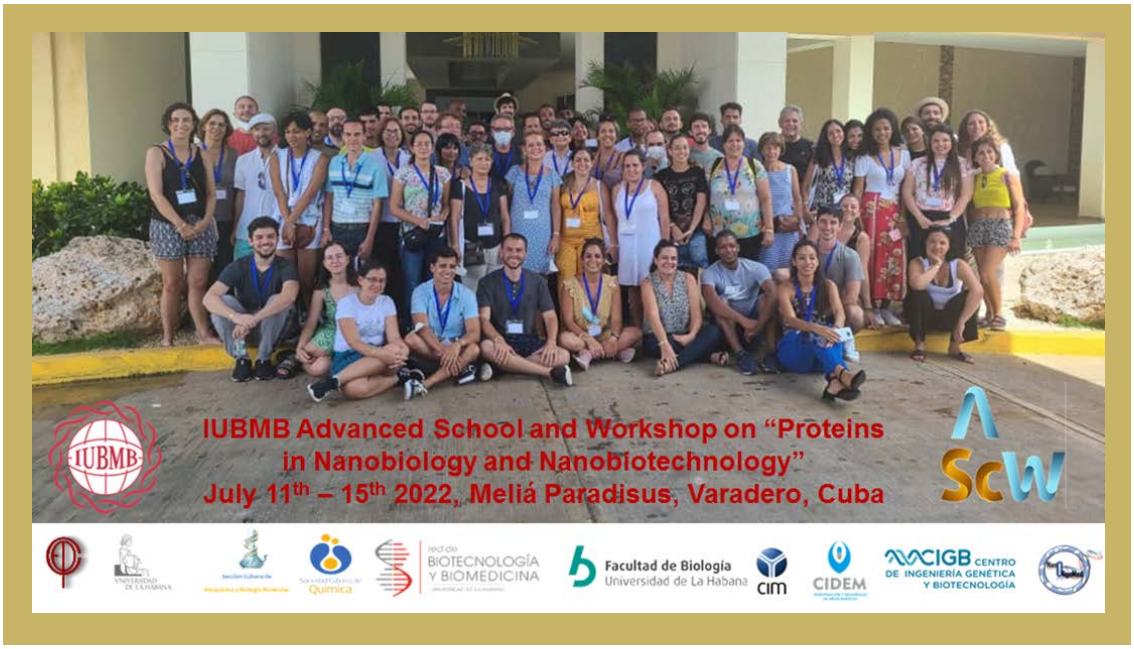


Figure 5. **Group photo of the meeting, Meliá Paradisus Hotel, Varadero, Cuba on July 15th, 2022**

Joint IUBMB/FEBS Advanced Lecture Course
Molecular Targets for Anti-aging Interventions
26 Sept. – 1 Oct. 2022 | Spetses Island, Greece

Joint IUBMB/FEBS Advanced Lecture Course 2022

Report by Aleksandra Mladenovic, Chair Course Organizer (Serbia)

***Co-Organizers**: Dr. Efstathios S. Gonos (Hellenic Pasteur Institute, Greece), and Dr Silva Katusic Hecimovic (Ruđer Bošković Institute, Croatia)*

The Spetses Summer Schools were started in 1966 and have been kept as a series of well-known lecture courses to date. Over the years, over 500 different lecturers come to the island (including more than 15 Nobel laureates) to teach more than 5000 young pre- and post-doctoral researchers. With time, the Spetses summer schools became famous and the Spetses Island nowadays is widely accepted as an ideal environment for top-quality science under relaxing conditions.

Following this route, an Advanced Lecture Course on "Molecular targets for anti-aging interventions" has been held in Spetses from September 26th-October 1st, 2022. The course was initially supposed to take place in May 2020, but as the Covid-19 pandemic put everything and everyone on hold, it was postponed several times. Luckily, thanks to the joint efforts of the organizers, and with constant support given by IUBMB and FEBS, the idea was not abandoned, and the course was finally realized in the last days of September 2022.

The main idea of the course was to get together some of the main scientists from the aging field and to summarize, evaluate and transfer a huge accumulated knowledge about the aging process to the new generation of scientists.

Why aging is so important? The main organizer of the course, Dr. Aleksandra Mladenovic (from the Institute for Biological Sciences "Sinisa Stankovic" (IBISS), Belgrade, Serbia) condensed in the short interview she gave to the FEBS Network some time ago:

"There is no field of biological science that better reflects the human fight against death and a human wish for being immortal than the aging field does. I was fascinated with the first ground-breaking studies that identified lifespan-regulating genes and showed it is possible to extend lifespan tremendously. What we learned afterward is that an increased lifespan does not mean necessarily an increased health span. Finding ways to prolong both is the ultimate goal for me. In addition, I always have the feeling that the mechanisms of aging – all the signaling pathways that hide the secret of longevity – are also those that hide the secrets and cures for many diseases. Resolving aging would solve many other issues." (full text available *here*)

The course joined together advanced Ph.D. students who are about to obtain their Ph.D. degree, and also young postdoctoral level scientists. Few qualified senior scientists from different areas of basic and applied science were present too. There were 53 participants in total, from Serbia, Greece, Croatia, the UK, Austria, Poland, Portugal, France, the Czech Republic, The Netherlands, the USA, Israel, Singapore, Spain, Portugal, Hungary, France, and Germany. All the participants were settled at the course venue (https://www.spetses-hotel.gr/en/) which enabled a perfect interaction between attendees. Six IUBMB fellowships, three FEBS young travel awards, one transcontinental FEBS/IUBMB fellowship, one IBISS fellowship, and one grant given by the Hellenic Society for Biochemistry and Molecular Biology were allocated to young applicants to facilitate their participation in the course.

Seventeen invited speakers gave lectures about various aspects of aging. One of them was from the IUBMB President Prof. Alexandra Newton who gave a lecture on "Protein Kinase C: Molecular Target in Neurodegeneration", and gave an introduction about the IUBMB during her welcome speech. The course covered basic molecular mechanisms driving the aging progression, fundamental biological principles, and basic signaling pathways that play the main role in aging and age-related diseases, like cholesterol metabolism, cytochrome C pathway, proteolysis, and genomic stability, damage, and repair. The current biomarkers of aging and how it is essential to define them have been topics as well. Current antiaging approaches, both pharmacological and environmental have been discussed: dietary restriction, as the oldest and still highly valuable antiaging intervention, geroprotectors/senolytics, dietary polyphenols, proteasome activators, etc.

In addition to lectures, other activities took place. Two round table discussions (“Women in science all across the world” and “Science in Eastern vs Western Europe”) were especially interesting. General trends were discussed, personal experiences were shared, main problems were marked, and possible improvements/solutions were hypothesized. As among the participants were lecturers from different countries, from UK and SAD to Serbia and Croatia, various stories were heard. Prof. Vitta Fortunati, a former Dean of the Faculty of Foreign Languages and Literatures at Bologna University, the IUBMB President Prof. Alexandra Newton, Dr. Irene-Diaz Moreno, Chair of the FEBS Working Group on the Careers of Young Scientists, Dr. Ilaria Bellantuono, Co-Director of the Healthy Lifespan Institute, Prof. Beata Vertessy, Chair of the Advanced Courses Committee, and Dr. Selma Kanazir, President of the Serbian Neuroscience Society were among speakers and contributed significantly to overview and understanding of different routes women could take in different world and science areas.

Two Tutorials were particularly useful for young participants. The first tutorial was on how to give a good oral presentation and how to write a good CV. The second one was how to “survive” the peer-review process, using the advantage of having two Editors-in-Chief among participants: Dr. Stathis Gonos (Mechanisms of Ageing and Development and IUBMBLife) and Prof. Claudio Franceschi (Aging Reviews), and Dr. Aleksandra Mladenovic as Associate Editor. They went through the editorial process in detail, giving dozens of practical pieces of advice.

Two poster sessions were maintained and 3 poster prizes were generously given by 3 journals: FEBS BioOpen, IUBMB Life, and BioFactors. Eleven posters were selected for oral presentations which allowed young participants to practice, giving a talk to their colleagues, while 6 short talks allowed selected participants to present their work in more detail.

In the end, evaluation of the course by participants, and via anonymous FEBS and IUBMB questionnaires filled up online, showed that the course was a great success and pave the way for the idea this course to become the starting point of a long tradition of anti-aging courses in Spetses. Thus, hopefully, see you in two-years time again!

Detailed information, the list of all participants, and the abstract book could be found on the website: https://antiaging2022.febsevents.org/

IUBMB Focused Meeting on Biochemistry & Molecular Biology of RNA Viruses

15th November, 2022- 18th November, 2022

Venue: Regional Centre for Biotechnology, Faridabad

Report by Deepak T. Nair, Co-organizer of the Focused Meeting (India)

Organizing Committee:

Prof. Sudhanshu Vrati (Regional Centre for Biotechnology, India), Dr. Manjula Kalia (Regional Centre for Biotechnology, India), Dr. Arup Banerjee (Regional Centre for Biotechnology, India), Prof. Milan Surjit (Translational Health Science Technology Institute, India) and Prof. Deepak T. Nair (Regional Centre for Biotechnology, India)

The IUBMB Focused Meeting on the Biochemistry and Molecular Biology of RNA Viruses was originally scheduled for November 2020. However, due to the COVID-19 pandemic, the meeting was postponed a few times and finally held during 15-18 November 2022.

The ongoing COVID-19 pandemic has made it abundantly clear that infectious diseases due to pathogenic viruses with RNA genomes represent a global public health problem. Mortality and morbidity due to known RNA viruses are high and the problem is compounded due to the appearance of new viruses due to animal-human conflicts. RNA viruses such as SARS-CoV-2, Influenza, Japanese Encephalitis Virus, Dengue virus, Chikungunya virus and HIV may cause death or result in long-term sequelae in recovered patients. A number of laboratories in different parts of the world are engaged in research to identify critical intervention points in the life cycle of these viruses and exploit this knowledge to develop effective therapeutic and prophylactic strategies.

To encourage a productive discussion and to disseminate knowledge about new advances in this area, we have organized this focused meeting with support from the IUBMB. In addition to seminars by global leaders in the field, the meeting also provided an opportunity for young researchers to present posters and give talks. All young researchers were encouraged to interact with the speakers during the poster sessions, meals and tea breaks.

The meeting was organized primarily by the Regional Centre for Biotechnology (RCB). RCB is an academic institution established by the Department of Biotechnology, Govt. of India with regional and global partnerships synergizing with the programmes of UNESCO as a Category II Centre. The primary focus of RCB is to provide world-class education, and training and conduct innovative research at the interface of multiple disciplines in biotechnology. The centre is part of the NCR-Biotech Science Cluster (NCR-BSC) located in Faridabad, India. The IUBMB Focused Meeting on the Biochemistry and Molecular Biology of RNA Viruses was held at the Prof. MK Bhan auditorium complex of the NCR-BSC. The seminars were held inside the 400-seater auditorium and the registration desk was positioned near the entrance of the auditorium (**Fig. 1**). The poster session was held in the spacious foyer outside the auditorium. To improve the interaction between the attendees, hot buffet lunches and dinners were served to the attendees for the duration of the conference.

Figure 1. **The registration desk with student volunteers ready and waiting for the participants to arrive on the first day of the conference**

The meeting started with the inaugural session wherein Prof. Sudhanshu Vrati (Executive Director, RCB) and Prof. Iqbal Parker (IUBMB) addressed the attendees (**Fig.2**). The meeting was organized into ten sessions titled Structural Virology, SARS-CoV-2, Host-Pathogen Interactions (2 sessions), Immunogens/Antivirals & Vaccine Design, Immune Responses (2 sessions), Virus Replication. Virus Evolution and Antivirals (**Fig.3**). The ten sessions involved 34 talks by established investigators and 13 talks by young researchers. Due to personal issues, five speakers could not travel to India and the seminars by Prof. Jack Johnson, Prof. Aneel K. Aggarwal, Prof. BVV Prasad, Prof. Scott Weaver, Prof. Volker Lohmann and Prof. Ralf Bartenschlager were held online (**Fig.4**). However, despite the online streaming format, all these talks were well attended and also followed by healthy discussions and multiple questions from the audience were discussed by the online speakers (**Fig. 5**).

Figure 2. **Prof. Sudhanshu Vrati (IN) and Prof. Iqbal Parker (SA; IUBMB) addressed the participants during the inaugural session**

Figure 3. Seminar presentations by Prof. Adolfo Garcia-Sastre (US), Dr. Pragya Yadav (IN), Dr. Manidipa Banerjee (IN), Dr. Santosh Chauhan (IN), Dr. Shailly Tomar (IN) and Prof. Bart Haagmans (NL)

Figure 4. Online Seminar presentations by Prof. Aneel K. Aggarwal (US) and Prof. Jack Johnson (US)

Figure 5. Rapt audience in the Prof. MK Bhan auditorium during the seminar sessions

Table 1. List of invited speakers is as follows:

Name	Affiliation	Title
Jack Johnson (M)	Scripps, USA	Decoding maturation of a eukaryotic virus with cryo-EM structures of five intermediates
BVV Prasad (M)	Baylor College, USA	The role of a small membrane active protein in the assembly and egress of Chikungunya Virus from host cells
Manidipa Banerjee (F)	IIT-Delhi, India	Structural underpinnings of rotavirus entry, replication, and morphogenesis
Kalyan Das (M)	Rega Institute, Belgium	Targeting viral polymerases – rewards and challenges
Shailly Tomar (F)	IIT-Roorkee, India	Structure-assisted targeting of SARS-CoV-2 proteases for discovery of antivirals
Karthik Chandran (M)	Albert Einstein School of Medicine, USA	Dissecting and Disabling the Spike Proteins of Emerging Enveloped Viruses
Shashank Tripathi (M)	IISc, India	Anti-Interferon armamentarium of SARS-CoV-2
Krishnan H. Harshan (M)	CCMB, India	Evolution of SARS-CoV-2 Variants and Silencing of Host Innate Response
Bart Haagmans (M)	Erasmus MC, Netherlands	Phenotypic evolution of SARS-CoV-2
Santosh Chauhan (M)	CCMB, India	Transgenic Mouse Models Support a Protective Role of Type 1 IFN Response in Lethal SARS-CoV-2 Infection-related Lung and Brain Neuropathology
Pragya Yadav (F)	NIV, India	Immune response against Covaxin and Covishield vaccines
Aneel K. Aggarwal (M)	Mount Sinai Medical Center, USA	Targeting RNA methylation in Zika and SARS-CoV-2
Sudhanshu Vrati (M)	RCB, India	Japanese Encephalitis Virus NS4A Protein Interacts with PTEN-Induced Kinase 1 (PINK1) and Promotes Mitophagy in Infected Cells
Anirban Das (M)	NBRC, India	Molecular basis of virus induced -acute flaccid paralysis; Correlation with motor neuron dysfunction
Sumana Sanyal (F)	Oxford, UK	Lipid droplets and the host-pathogen dynamic
Saumitra Das (M)	IISc, India	RNA binding proteins and RNA viruses: A journey together
Ashley Laurent St John (F)	NUS, Singapore	Host-targeted therapeutics for dengue
Ralf Bartenschlager (M)	Heidelberg University, Germany	New insights into the flavivirus replication cycle and use of gained knowledge for the development of antiviral therapy
Laurent Chatel-Chaix (M)	BRC, Canada	Mitochondrial manipulations by flaviviruses
E Sreekumar (M)	IAV, India	Host factors restricting Chikungunya virus infection

Name	Affiliation	Title
Sankar Bhattacharya (M)	THSTI, India	Dengue virus replication inhibits megakaryopoiesis through inhibition of ROS accumulation in differentiating megakaryocytes
Raghavan Varadrajan (M)	IISc, India	Design of a thermostable SARS-CoV-2 vaccine formulation
Adolfo Garcia-Sastre (M)	Mount Sinai Medical Center, USA	The SARS-CoV-2 interactome as a guide for antiviral discovery
Stalin Raj (M)	IISER-Thiruvananthapuram, India	Characterizations of SARS-CoV-2 Spike Variants to Understand Viral Entry and Development of Vaccine Candidate
Jayanta Bhattacharya (M)	THSTI, India	Diversity in neutralizing antibody responses developed in an unvaccinated SARS-CoV-2 infected individual
Anmol Chandele (F)	ICGEB, India	B cell responses during acute febrile natural dengue infection
Nimesh Gupta (M)	INII, India	A Tfh-like T helper subset drives antibody response to dengue virus
Jayasri Das Sarma (F)	IISER-Kolkata, India	The CD40/CD40 ligand system in linking acute neuroinflammation with chronic progressive demyelination
Milan Surjit (M)	THSTI, India	Exploring the cross-talk between human endogenous retroviruses and SARS-CoV-2
Volker Lohman (M)	Heidelberg University, Germany	Assessing the replication fitness of Hepatitis C Virus wildtype isolates in cell culture
Scott Weaver (M)	UTMB-Galveston, USA	Mechanisms of Urban Arbovirus Emergence
Arindam Mondal (M)	IIT-Kharagpur, India	Tracking the mutational hotspots to predict adaptation of bat influenza viruses into non-bat hosts
Sweety Samal (F)	THSTI, India	Mapping of SARS-CoV-2 mutations to understand the mechanisms of SARS-CoV-2 entry and fusion into cells
Prasenjit Guchhait (M)	RCB, India	Diabetic mice develop severe SARS CoV-2 infection: Dietary supplementation of α-ketoglutarate and metformin inhibits infection by restoring interferon responses

In order to encourage young researchers, 13 abstracts submitted for poster presentation were selected for oral presentations (**Table 2**). Poster sessions were held on the second and third day, which were attended by many people and several lively discussions were held at the posters (**Fig. 6**).

Table 2. Summary of Session Type and Gender Balance

Activity	Female	Male
Short talks by young researchers	8 (62%)	5 (38%)
Poster presentations	52 (60%)	34 (40%)

Figure 6. **Lively discussions during the poster session**

To motivate young researchers to carry out excellent research and communicate it in a lucid manner, three poster prizes of Rs. 3000/- each were awarded. The researchers who were selected for these prizes by a jury comprised of some of the visiting speakers were Dr. Kiran Bala Sharma (RCB, India), Ms. Shrishty Raman (AIIMS, India), And Ms. Kajal Gupta (IISER-Mohali, India).

In order to provide the attendees, especially the ones from abroad, a glimpse of the rich culture of India, a cultural program showcasing classical and folk dances from different parts of India were held. To help the participants relax and interact over drinks, a gala dinner was also held on the third day of the event (**Fig.7**).

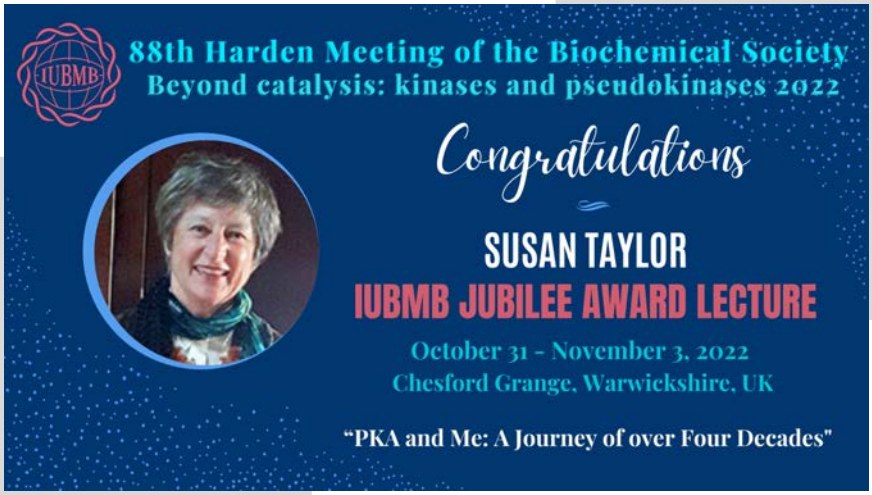
Figure 7. **The participants interacting with each other over drinks and dinner during the gala dinner held on the third day of the conference (17th November)**

Information about IUBMB programs and upcoming meetings were distributed to the attendees through flyers and standees. Overall, the IUBMB Focused Meeting of Biochemistry and Molecular Biology of RNA Viruses provided an excellent forum for distinguished researchers to present their research contributions and interact with young and upcoming researchers. Along with the seminar and poster sessions, there were many healthy and lively discussions between researchers of all ages during lunch, dinner, and tea breaks. It is expected that these interactions will lead to new collaborations and recruitments to study different aspects of RNA viruses that infect humans. The meeting was attended by a total of 225 participants, including speakers, registered participants, organizing committee members, student volunteers, and RCB faculty (**Fig.8**). The meeting with a vote of thanks to IUBMB, the organizing committee and all the student volunteers who worked hard to ensure the success of the meeting.

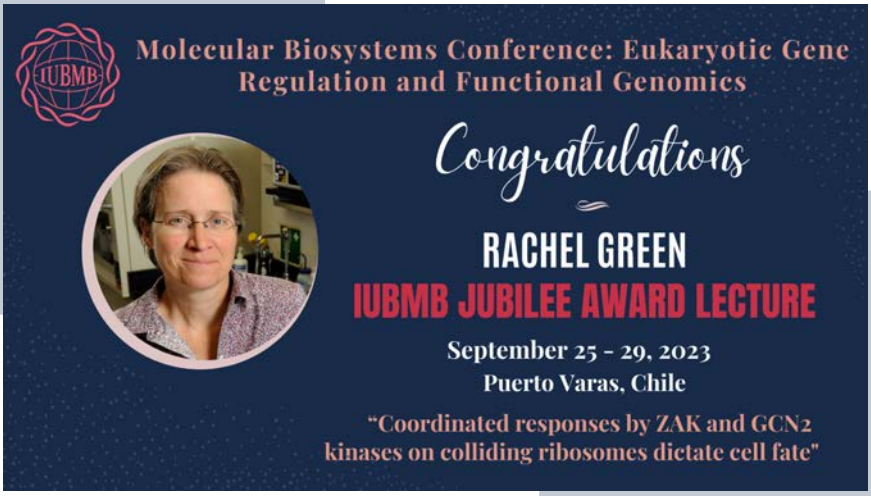
Figure 8. Group Photo taken during the IUBMB Focused Meeting on Biochemistry and Molecular Biology of RNA Viruses

Congratulations to

IUBMB Jubilee Lectures



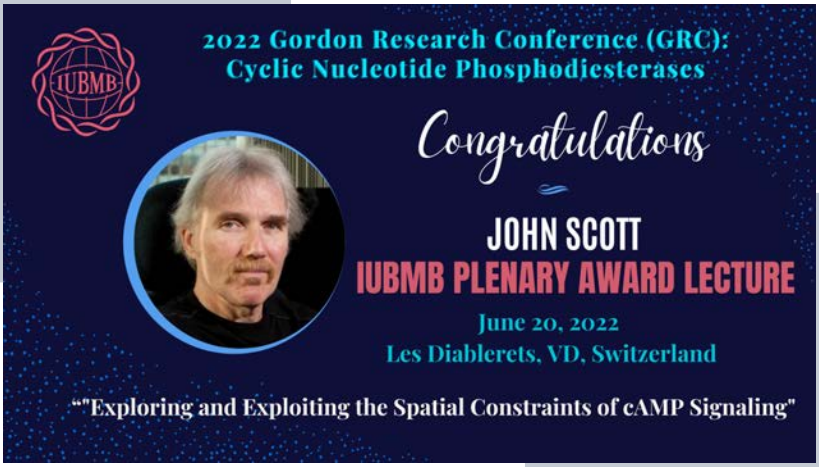
Congratulations to Professor Susan Taylor from UC San Diego, USA who presented the IUBMB Jubilee Award Lecture at the 88th Harden Meeting of the Biochemical Society on Beyond catalysis: kinases and pseudokinases 2022 on "PKA and Me: A Journey of over Four Decades". She is honored for her outstanding contributions to understanding protein kinases.



Congratulations to Professor Rachel Green from Johns Hopkins, Baltimore, MD, USA, who will be presenting the IUBMB Jubilee Award Lecture at the Molecular Biosystems Conference: Eukaryotic Gene Regulation and Functional Genomics in Puerto Varas, Chile from September 25-29, 2022 on "Coordinated responses by ZAK and GCN2 kinases on colliding ribosomes dictate cell fate". She is honored for her outstanding contributions to understanding the molecular mechanisms of ribosome functions.

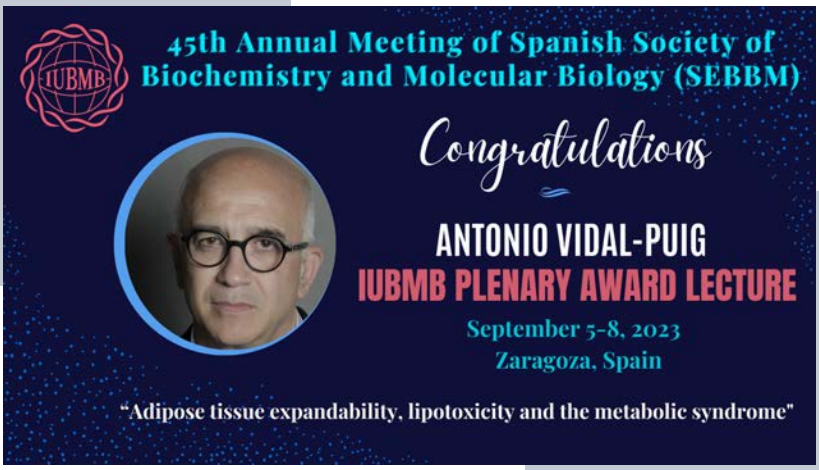
Congratulations to

IUBMB Plenary Lectures



Congratulations to Professor John Scott from the University of Washington School of Medicine, US, who presented the IUBMB Plenary Award Lecture at the Gordon Research Conference: Cyclic Nucleotide Phosphodiesterases on "Exploring and Exploiting the Spatial Constraints of cAMP Signaling"

Congratulations to Professor Kristijan Ramadan from Oxford Institute for Radiation Oncology, Department of Oncology, University of Oxford, UK who presented the IUBMB Plenary Award Lecture at HDBMB22: From Science to Knowledge on "DNA-protein crossslink proteolysis repair: from human disease to cancer therapy".



Congratulations to Professor Antonio Vidal-Puig from the University of Cambridge, UK who will be presenting the IUBMB Plenary Award Lecture at the 45th Annual Meeting of Spanish Society of Biochemistry and Molecular Biology (SEBBM) on "Adipose tissue expandability, lipotoxicity and the metabolic syndrome".

Congratulations to

IUBMB FELLOWSHIP AWARDEES

YSF Fellowship awardees attended the 2022 YSF in Vimeiro and the IUBMB-FEBS-PABMB Congress in Lisbon.

IUBMB Bursary awardees were funded by IUBMB to help early-career researchers from outside the FEBS area (Europe and some bordering countries) participate in the Congress in Lisbon.

Congratulations to

IUBMB FELLOWSHIP AWARDEES

October 2022

The IUBMB Fellowship Committee is pleased to announce that we have awarded thirteen Wood-Whelan Fellowships from the May 2022-October 2022 applicant pool. Established in honor of past IUB/IUBMB Executives, the Wood-Whelan Fellowships support the travel of young trainees for up to four months to acquire the training and skills necessary to complete a critical feature of their research project. Preference is given to new collaborations, particularly those that bring knowledge, skills, and access back to the home laboratory. For more information, please visit the Fellowship Programs on our website. To support this program, please consider visiting the IUBMB Charity and Donations webpage.

Congratulations to

IUBMB FELLOWSHIP AWARDEES

October 2022

The IUBMB Fellowship Committee is pleased to announce that we have awarded one Mid-Career Fellowship from the May 2022-October 2022 applicant pool. The Mid-Career Fellowship supports the travel of a mid-career junior biochemist or molecular biologist for up to two months to acquire training in state-of-the-art techniques, other advanced training, and/or to establish new scientific collaborations. Preference is given to new collaborations and/or training that brings knowledge, skills, and access back to the home institution. For more information, please visit the Fellowship Programs on our website. To support this program, please consider visiting the IUBMB Charity and Donations webpage.

Congratulations to

IUBMB FELLOWSHIP AWARDEES

October 2022

The IUBMB Tang Education Fellowships provides opportunities for the development of both biochemistry and molecular biology educational programs and educators.

The next deadline is April 1, 2023. For more information, please visit the Fellowship Programs on our website.

Congratulations to

IUBMB FELLOWSHIP AWARDEES

Fall 2022

Our recent Travel Fellows received fellowships to travel and attend a meeting in the IUBMB region. Applications will be considered as they are received. For more information, please visit the Travel Fellowships on our website.

Congratulations to

IUBMB FELLOWSHIP AWARDEES

Congratulations to the 5 trainees from Morocco, Nigeria, South Africa, and Tanzania, who have received the inaugural IUBMB Africa Initiative: ENABLE Fellowships to attend the 1st FEBS-IUBMB-ENABLE Conference on “The perfect tandem: How technology expands the frontiers of biomedicine”.

This IUBMB Programme for Relocation Support for Displaced Trainees will remain in place as a service to the community to assist students affected by natural disasters and acts of war and aggression that have resulted in loss of infrastructure and resources.

“An opportunity to explore again”

by César A. Ramírez-Sarmiento, Recipient of the 2019 IUBMB Mid-Career Fellowship
Associate Professor, Institute for Biological and Medical Engineering (IIBM), Pontificia Universidad Católica de Chile
Adjunct Researcher, ANID Millennium Institute for Integrative Biology (iBio)

Since the beginning of my PhD in Sciences with honors in Molecular Biology, Cellular Biology and Neurosciences at Universidad de Chile, I was wishing to become an academic. I was enthralled by the research I was pursuing at the time under the supervision of Dr. Victoria Guixé, on the characterization of the tradeoffs between oligomerization and protein stability within an enzyme superfamily, and by the opportunities that I was given during my years as a graduate student. I was given the freedom to explore other areas of research and I was fortunate to be able to get involved in both computational and experimental biophysics at the University of California San Diego after being received by Dr. Elizabeth A. Komives as a visiting graduate student in three separate opportunities, totaling almost one year of experience overseas.

After finalizing my PhD back in Chile, I noticed that I not only gained experience in different research strategies for computational and experimental biophysical and biochemical studies, including molecular dynamics, analytical ultracentrifugation, and hydrogen deuterium exchange mass spectrometry. While I was able to receive support from IUBMB through the PROLAB program (Promoting Research Opportunities for Latin American Biochemists) to keep learning about these methods during my postdoc, I also had a change in mindset and a burst of curiosity that propelled me to pursue independent research to respond to these questions. It became a reality in the middle of 2016 when I constituted my own research group after becoming an assistant professor at the Institute for Biological and Medical Engineering from Pontificia Universidad Católica de Chile.

Becoming an academic and constituting your own research group is quite intense, and in all honesty, there were so many aspects of it for which I was completely unprepared for. The following is not an extensive list of such aspects, but many of you might be familiar with them. I had to become fluent in the language spoken in administrative tasks both in meetings and in written paperwork, quickly learn what it means to be a good leader for the students that I am supervising, prepare for teaching frequently, and figuring out it is not as easy as I thought when I was a student, submit dozens of applications for research grants to obtain the funding to set up our laboratory, and become acquainted with a new term known as “time management” (or as I call it when joking with colleagues, learn how to bend time).

As you can gather from these few lines, not much time was spent on research at the beginning of my career as a faculty member. In several of these new tasks I made mistakes, failed, and tried my best to get back on track. Thanks to a great group of students that put their trust in this (at that time) young faculty member, everything was easier. But after 4 years of being an academic, I was longing to go back to the bench and the

computer and to reconnect with my younger self, the one who used to do research, to become intrigued with different instruments, and start exploring what can be done with them. I also had an experimental technique in mind that I already used during my PhD but that I knew I only scratched the surface of what it can do: mass spectrometry.

Therefore, I successfully applied to the IUBMB Mid-Career Fellowship in 2019, which enabled me to go back to the University of California San Diego and learn everything that can be done using mass spectrometry at the Biomolecular and Proteomics Mass Spectrometry Facility. During the few months that I spent in this facility, I received training in preparing samples from many different sources for proteomics and hydrogen deuterium exchange mass-spectrometry, how to analyze them using mass spectrometry and how to perform data processing afterwards. In parallel, I performed experiments of importance for our research back in Chile, which was ultimately published in two renowned journals in biochemistry and biophysics: *Biophysical Journal* (https://doi.org/10.1016/j.bpj.2022.02.012) and *Nucleic Acids Research* (https://doi.org/10.1093/nar/gkac453). Even with the difficulties raised due to the pandemic (i.e., I had to change my flight tickets to come back to Chile two weeks before scheduled), this was a great experience to reconnect with research, remember how life in the lab was when I was a student and get reminded not only of the fun but also of the challenges that these experiences involve.

While I cannot be fully certain, I do believe that the outcomes of this fellowship (in the form of publications, presentations at conferences, and networking activities) led to the opening of many doors that have manifested in recent days. On the one hand, we received the 2020 Paper of the Year award for a PROLAB-funded research results published in *Biophysical Journal* (https://doi.org/10.1016/j.bpj.2019.11.014). On the other, I was recently invited to join the Executive Council of The Protein Society for a 3-year term and to present our work during renowned conferences of the Argentinian Society of Biophysics and the 48th Lorne Conference on Protein Structure and Function.

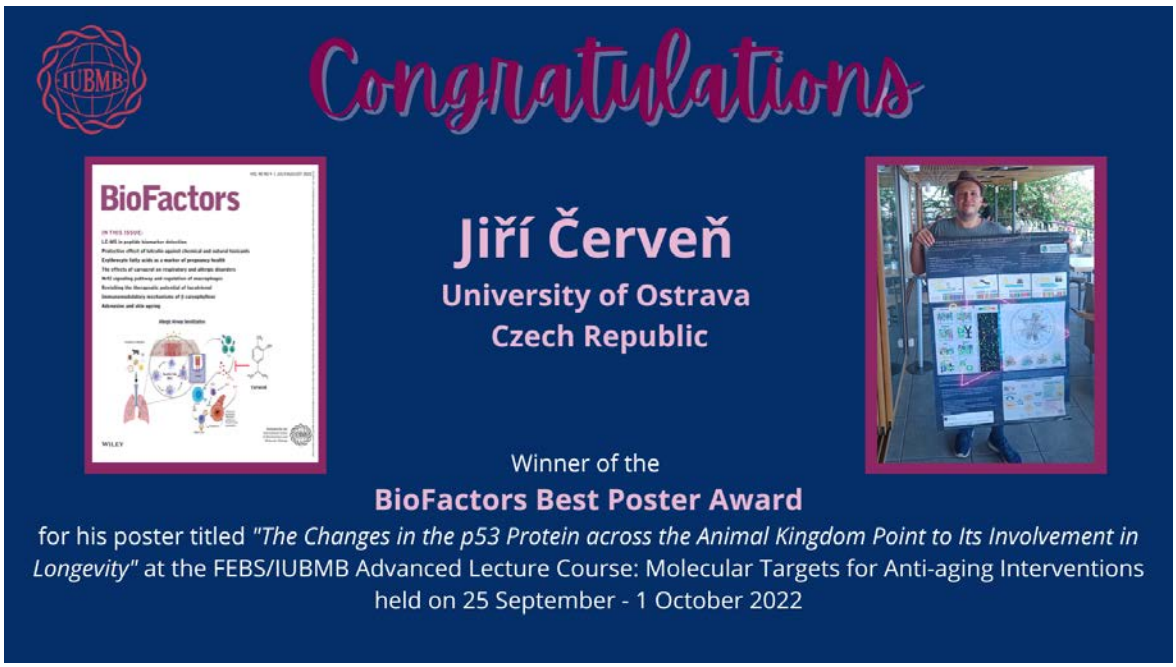
Altogether, I would like to encourage other mid-career researchers to apply to these fellowships, which I believe give us the opportunity to rekindle our love for research, to explore new areas and spark new ideas.

*Photo taken in San Diego, CA, USA

Congratulations to

IUBMB Poster Prize Awardees

Joint FEBS/IUBMB Advanced Lecture Course: Molecular Targets for Anti-aging Interventions



Congratulations to

IUBMB Poster Prize Awardees

1st FEBS-IUBMB-ENABLE Conference

A NEW EDITOR-IN-CHIEF
for BioFactors

We welcome Professor Irene Díaz-Moreno as the incoming Editor-in-Chief of *BioFactors*. Professor Díaz-Moreno is based in University of Seville in Spain and is the current Vice President of the Spanish Society of Biochemistry and Molecular Biology. She has a distinguished history in the study of the interplay between mitochondrial and nuclear factors and how these are governed by post-translational modification. Professor Díaz-Moreno has been involved in several committees and journals of IUBMB and FEBS over the past decade, including as Chair of the IUBMB Nominating Committee and as a member of the IUBMB Education & Training and Congresses & Focused Meetings committees.

We also pay tribute to Professor Angelo Azzi, who has led *BioFactors* since 2010. This has been a defining period for the journal, with Professor Azzi's custodianship driving increases in submissions, manuscript quality and impact factor over the past 12 years. We thank Professor Azzi for his leadership and establishing *BioFactors* as a key journal in the field.

"*It is a privilege and a great honor for me to become the Editor-in-Chief of BioFactors, one of the IUBMB journals successfully run for many years by Prof. Angelo Azzi. The wide journal scope ranges from biotechnology and synthetic biology to enzyme engineering for nutrition and agri-food, plant biology, environmental sciences and sustainability, IUBMB-BioFactors is a highly reputable scientific journal edited by Wiley in the field of Biochemistry and Molecular Biology (Q1 and Impact Factor 6.438). In the current turbulent times, when many emerging journals and publishers aggressively compete with each other, the IUBMB journals offer an excellent platform to scientists worldwide to publish their research work. Publishing in IUBMB-BioFactors lets you not only place your work in a high-quality scientific journal after a transparent peer-review process, but also contribute to the extensive program of fellowships, courses and awards funded by IUBMB to help young scientists develop their scientific careers.*"

IUBMB JOURNALS

IUBMB Life

BioFactors

Biotechnology and Applied Biochemistry

Biochemistry and Molecular Biology Education

Molecular Aspects of Medicine
ELSEVIER

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!

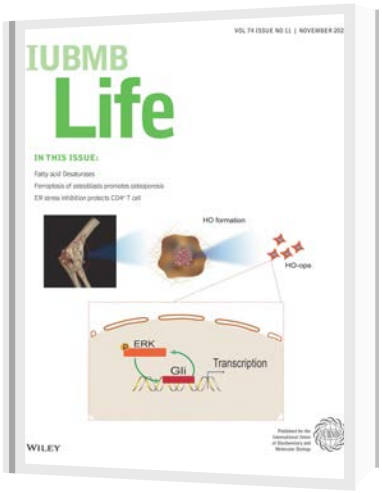
Did you know? Wiley and Jisc just signed an agreement that allows UK authors to publish Open Access in the IUBMB Journals at no cost to them.

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.

Submit your research to the IUBMB Journals today.

IUBMB JOURNAL HIGHLIGHTS



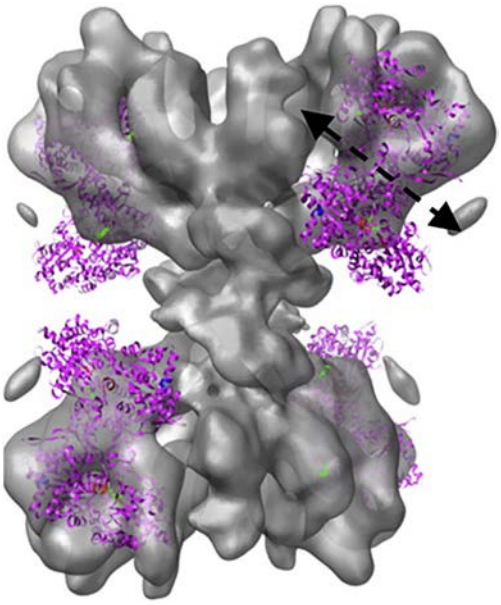
Follow the IUBMB Life account on Twitter @IUBMB_Life for the journal's latest news and updates.

New Issue: Volume 74, Issue 11

Phosphorylase phosphatase and flash activation of skeletal muscle glycogen phosphorylase — A tribute to Edmond H. Fischer

David L. Brautigan

First published: 14 October 2022



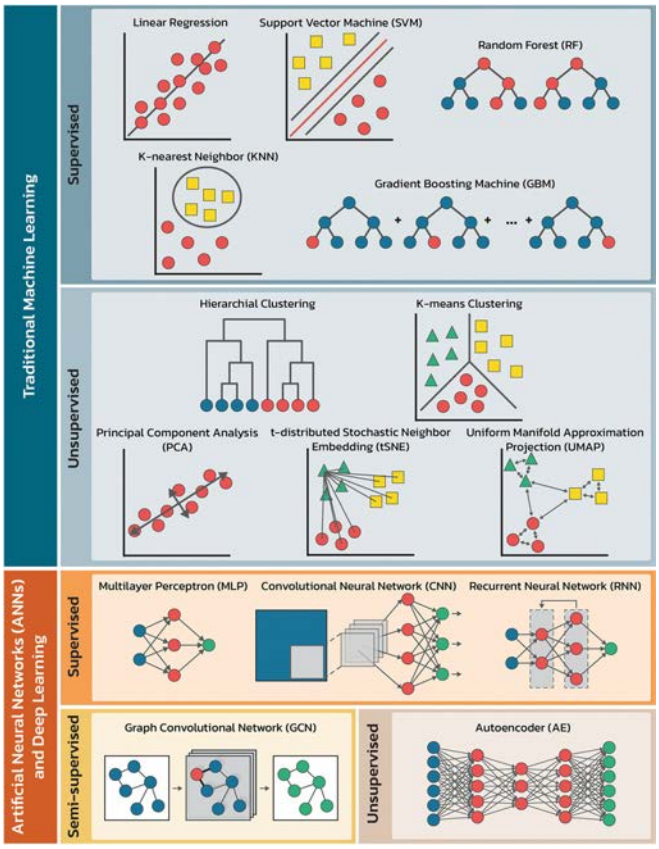
Glycogen is a polymerized form of glucose that serves as an energy reserve in all types of organisms. In animals glycogen synthesis and degradation, especially in liver and skeletal muscle, are regulated by hormonal and physiological signals that reciprocally control the opposing activities of glycogen synthase and glycogen phosphorylase. These enzymes are under allosteric control by binding of metabolites (e.g., ATP, AMP, G6P) and covalent control by reversible phosphorylation by kinase and phosphatase all assembled together on glycogen. More than 50 years ago Edmond Fischer and colleagues showed “flash activation” of phosphorylase in glycogen particles. This involved transient and extensive inhibition of protein phosphatase but even today the phenomenon is not understood. Phosphatase regulation is known to rely on regulatory subunits including glycogen binding subunits that serve as scaffolds, binding catalytic subunit, glycogen, and substrates. This tribute article to Edmond Fischer highlights his thoughts and ideas about the transient inhibition of phosphorylase phosphatase during flash activation of phosphorylase and speculates that phosphatase regulation in glycogen particles might involve a/b hybrids of phosphorylase.

IUBMB JOURNAL HIGHLIGHTS

Machine learning applications for transcription level and phenotype predictions

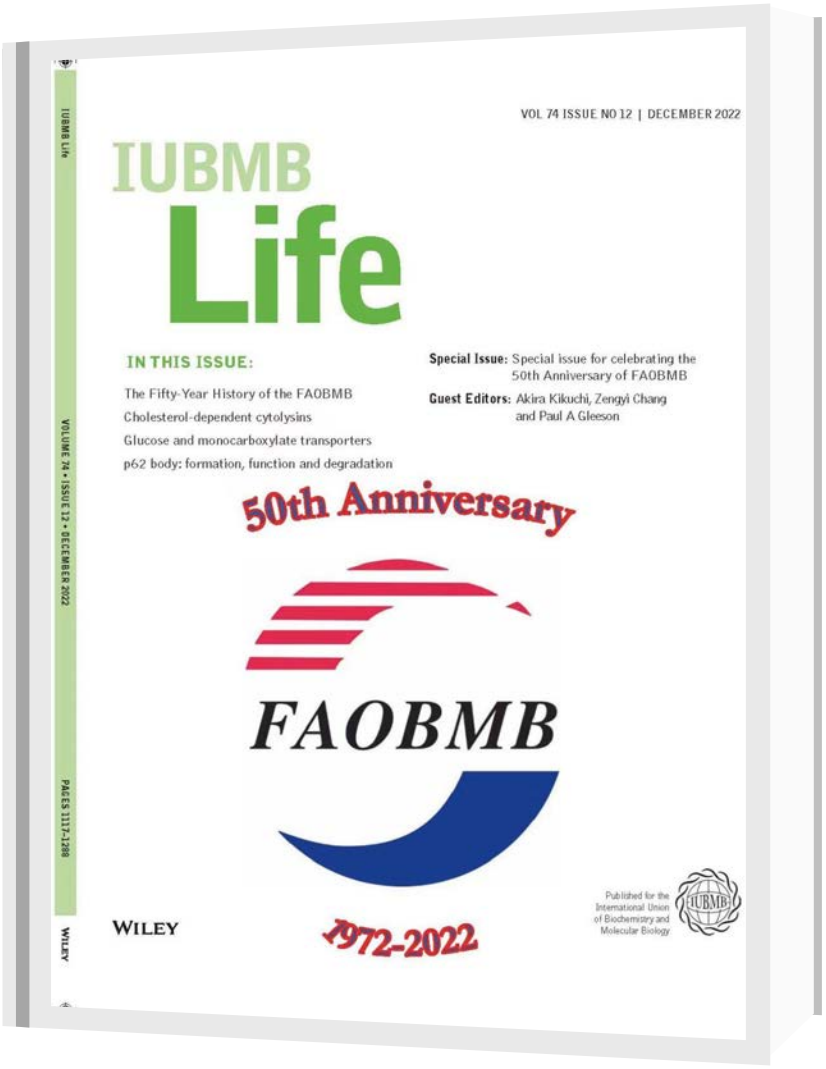
Juthamard Chantaraamporn, Pongpannee Phumikhet, Sarintip Nguantad, Todsapol Techo, Varodom Charoensawan

First published: 07 November 2022



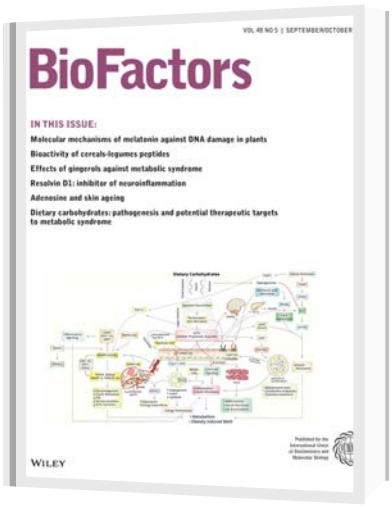
Predicting phenotypes and complex traits from genomic variations has always been a big challenge in molecular biology, at least in part because the task is often complicated by the influences of external stimuli and the environment on regulation of gene expression. With today's abundance of omic data and advances in high-throughput computing and machine learning (ML), we now have an unprecedented opportunity to uncover the missing links and molecular mechanisms that control gene expression and phenotypes. To empower molecular biologists and researchers in related fields to start using ML for in-depth analyses of their large-scale data, here we provide a summary of fundamental concepts of machine learning, and describe a wide range of research questions and scenarios in molecular biology where ML has been implemented. Due to the abundance of data, reproducibility, and genome-wide coverage, we focus on transcriptomics, and two ML tasks involving it: (a) predicting of transcriptomic profiles or transcription levels from genomic variations in DNA, and (b) predicting phenotypes of interest from transcriptomic profiles or transcription levels. Similar approaches can also be applied to more complex data such as those in multi-omic studies. We envisage that the concepts and examples described here will raise awareness and promote the application of ML among molecular biologists, and eventually help improve a framework for systematic design and predictions of gene expression and phenotypes for synthetic biology applications.

IUBMB JOURNAL HIGHLIGHTS

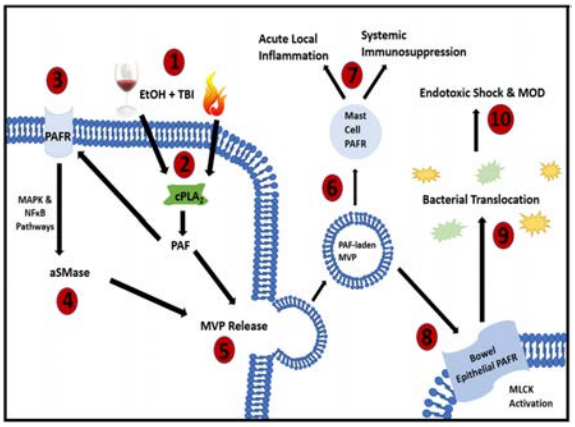


The December issue of IUBMB Life is dedicated to the 50th anniversary of FAOBMB (the Federation of Asian and Oceanian Biochemists and Molecular Biologists), which was founded in 1972. At the foundation, the Federation consisted of only three national biochemical societies, and has now grown to incorporate 20 Biochemical and Molecular Biology Societies within the Asian and Oceanic regions. Included in this special issue is a long and very informative article (written by Prof. Phillip Nagley et al) on the 50-year history of FAOBMB.

IUBMB JOURNAL HIGHLIGHTS



New Special Issue: Volume 48, Issue 5



Platelet-activating factor and microvesicle particles as potential mediators for the toxicity associated with intoxicated thermal burn injury

Carson J. Rohan, Rushabh P. Lohade, Chad Brewer, Jeffrey B. Travers

First published: 7 November 2022

Thermal burn injuries (TBIs) in patients who are alcohol-intoxicated result in greater morbidity and mortality. The systemic toxicity found in human patients, which includes both immediate systemic cytokine generation with multiple organ failure and a delayed systemic immunosuppression, has previously been replicated in mouse models combining ethanol and localized TBI. Though considerable insights have been provided with these models, the exact mechanisms for these pathologic effects are unclear. In this review, we highlight the roles of the lipid mediator platelet-activating factor (PAF) and subcellular microvesicle particle (MVP) release in response to intoxicated thermal burn injury (ITBI) as effectors in the pathology. Particularly, MVP is released from keratinocytes in response to PAF receptor (PAFR) activation due to excess PAF produced by ITBI. These subcellular particles carry and thus protect the metabolically labile PAF which enable binding of this potent lipid mediator to several key sites. We hypothesize that PAF carried by MVP can bind to PAFR within the gut, activating myosin light chain kinase (MLCK). The subsequent gut barrier dysfunction in response to MLCK activation then allows bacteria to invade the lymphatic system and, eventually, the bloodstream, resulting in sepsis and resultant dysregulated inflammation in multiple organs. PAF in MVP also activate the skin mast cell PAFR resulting in migration of this key effector cell to the lymph nodes to induce immunosuppression. This review thus provides a mechanism and potential therapeutic approaches for the increased toxicity and immunosuppressive outcomes of TBI in the presence of acute ethanol exposure.

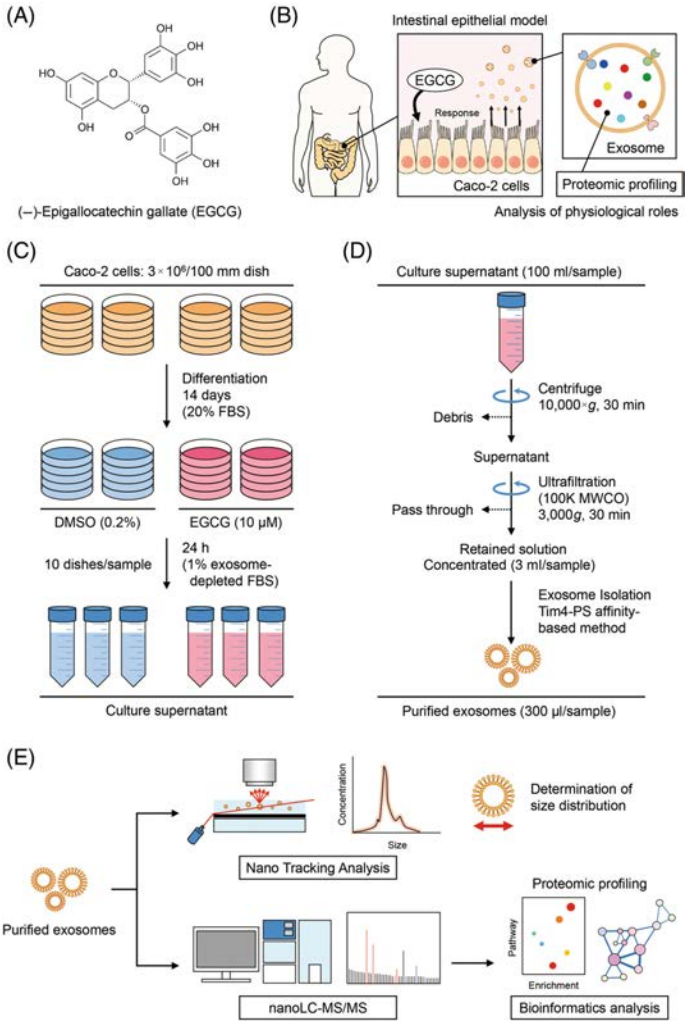
IUBMB JOURNAL HIGHLIGHTS

Proteomic profiling of intestinal epithelial-like cell-derived exosomes regulated by epigallocatechin gallate

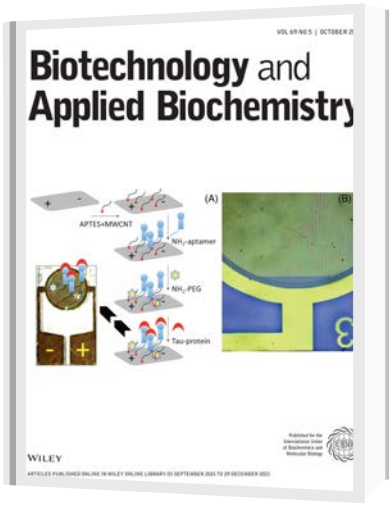
Satoshi Yano, Katsuhiko Suzuki, Taichi Hara

First published: 07 November 2022

Thermal burn injuries (TBIs) in patients who are alcohol-intoxicated result in greater morbidity and mortality. The systemic toxicity found in human patients, which includes both immediate systemic cytokine generation with multiple organ failure and a delayed systemic immunosuppression, has previously been replicated in mouse models combining ethanol and localized TBI. Though considerable insights have been provided with these models, the exact mechanisms for these pathologic effects are unclear. In this review, we highlight the roles of the lipid mediator platelet-activating factor (PAF) and subcellular microvesicle particle (MVP) release in response to intoxicated thermal burn injury (ITBI) as effectors in the pathology. Particularly, MVP is released from keratinocytes in response to PAF receptor (PAFR) activation due to excess PAF produced by ITBI. These subcellular particles carry and thus protect the metabolically labile PAF which enable binding of this potent lipid mediator to several key sites. We hypothesize that PAF carried by MVP can bind to PAFR within the gut, activating myosin light chain kinase (MLCK). The subsequent gut barrier dysfunction in response to MLCK activation then allows bacteria to invade the lymphatic system and, eventually, the bloodstream, resulting in sepsis and resultant dysregulated inflammation in multiple organs. PAF in MVP also activate the skin mast cell PAFR resulting in migration of this key effector cell to the lymph nodes to induce immunosuppression. This review thus provides a mechanism and potential therapeutic approaches for the increased toxicity and immunosuppressive outcomes of TBI in the presence of acute ethanol exposure.



IUBMB JOURNAL HIGHLIGHTS



New Issue: Volume 69, Issue 5

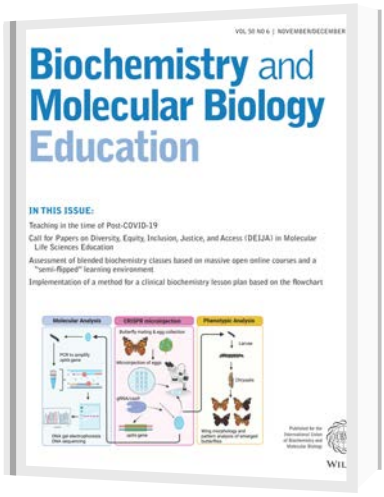
Effect on the conformations of the spike protein of SARS-CoV-2 due to mutation

Aayatti Mallick Gupta, Jaydeb Chakrabarti

First published: 31 October 2022

The spike protein of SARS-CoV-2 mediates receptor binding and cell entry and is the key immunogenic target for virus neutralization and the present attention of many vaccine layouts. It exhibits significant conformational flexibility. We study the structural fluctuations of spike protein among the most common mutations that appeared in the variant of concerns (VOC). We report the thermodynamics of conformational changes in mutant spike protein with respect to the wild-type from the distributions of the dihedral angles obtained from the equilibrium configurations generated via all-atom molecular dynamics simulations. We find that the mutation causes the increase in distance between the N-terminal domain and receptor binding domain, leading to an obtuse angle cosine θ distribution in the trimeric structure in spike protein. Thus, an increase in open state is conferred to the more infectious variants of SARS-CoV-2. The thermodynamically destabilized and disordered residues of receptor binding motif among the mutant variants of spike protein are proposed to serve as better binding sites for the host factor. We identify a short stretch of region connecting the N-terminal domain and receptor binding domain forming a linker loop where many residues undergo stabilization in the open state compared to the closed one.

IUBMB JOURNAL HIGHLIGHTS



New Issue: Volume 50, Issue 6

Investigating the strengths and weaknesses of online education during COVID-19 pandemic from the perspective of professors and students of medical universities and proposing solutions: A qualitative study

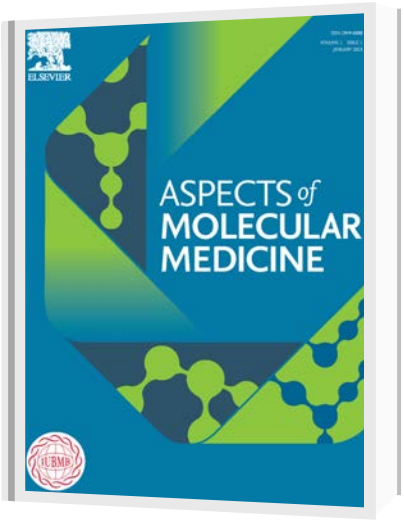
Hosein Ameri, Mina Mahami-Oskouei, Simin Sharafi, Saeede Saadatjoo, Maryam Miri, Morteza Arab-Zozani

First published: 07 November 2022

This study aimed to explore the strengths and weaknesses of e-learning during the COVID-19 pandemic from the perspective of its primary stakeholders, namely professors and students, and to provide practical solutions. Design is a qualitative study. We enrolled 22 faculty members and 58 students purposively. Research data were collected through a data collection checklist and via email and continued until the data were saturated. The qualitative content analyses were the basis of analysis in this study. Strengths were presented in 6 themes and 26 subthemes, weaknesses in 5 themes and 23 subthemes, and solutions were presented in 5 themes and 20 subthemes. Save money, time and energy; use modern software and educational technologies; and the ability to individualize education were among the strengths of e-learning. The most important weaknesses related to e-learning include infrastructure difficulties, problems related to the ability of professors and students to use educational systems. The most beneficial solutions offered included improving and upgrading the e-learning infrastructure, empowering professors and students to use educational systems. We concluded that using online teaching has many strengths as well as some weaknesses. Identifying these strengths and weaknesses can help policymakers plan better.

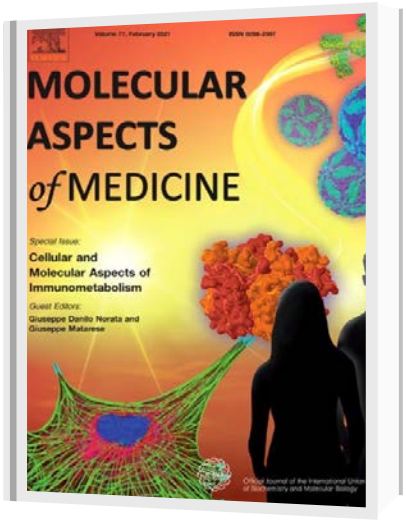
IUBMB JOURNAL HIGHLIGHTS

Aspects of Molecular Medicine is now inviting submissions



Aspects of Molecular Medicine

Publishing options: OA Open Access ↗



Aspects of Molecular Medicine, IUBMB's new gold open access journal, is pleased to invite your submissions.

Led by Angelo Azzi, MD, PhD, the esteemed Editor-in-Chief of *Molecular Aspects of Medicine* (Impact Factor: 14.235/ CiteScore: 23.8), IUBMB's new journal has a mission to provide a clinical foundation for basic scientists and a rationalization of disease for the clinician.

Using tools from biochemistry, molecular and cellular biology, physiology, pharmacology, and pathology, the articles that will be published in Aspects of Molecular Medicine are intended to describe the mechanistic background of disease and make it understandable at the clinical level. By publishing recent cutting-edge research, it is complementary to its prestigious sister journal, Molecular Aspects of Medicine, which publishes only lengthy review articles on established aspects of molecular medicine.

IUBMB JOURNAL HIGHLIGHTS

Aspects of Molecular Medicine is now inviting submissions

Publish open access for free

If you submit your work to Aspects of Molecular Medicine by October 31, 2023, the Article Publishing Charge (APC) of USD 2650, excluding taxes, will be waived, for all articles accepted for publication after peer review. So don't forget to submit before this deadline!

Meet Aspects of Molecular Medicine's Editor-in-Chief, Angelo Azzi

Angelo Azzi, MD, PhD
Tufts University, Medford, Massachusetts, USA

Angelo Azzi M.D. received his MD degree, PhD Pathophysiology, and PhD Biochemistry at the University of Padua, Italy. His academic career covers: Professor, University of Padua; Professor and Director, Institute of Biochemistry and Molecular Biology, University of Bern, Switzerland; Senior Scientist Human Nutrition Research Center on Aging; Faculty Member, School of Graduate Biomedical Pharmacology and Drug Development Program. His scientific areas of interest include bioenergetics, human nutrition, and cell signaling.

If you are interested in learning more about Aspects of Molecular Medicine please visit our journal website, where you can also read our Guide for Authors and submit your paper.

Aspects of Molecular Medicine looks forward to receiving your submissions!

Find out more about Aspects of Molecular Medicine:
www.journals.elsevier.com/aspects-of-molecular-medicine

IUBMB JOURNAL HIGHLIGHTS

Molecular Aspects of Medicine and Aspects of Molecular Medicine:

Two complementary journals in the service of science

By Angelo Azzi, Editor-in-Chief, Molecular Aspects of Medicine, Tufts University, Boston, USA

Molecular Aspects of Medicine has found a companion journal, Aspects of Molecular Medicine. This is an exciting event since Aspects of Molecular Medicine plans to continue the successful story of Molecular Aspects of Medicine in a different format, that of gold Open Access, model.

Following this model, Elsevier, the publisher, makes all articles and their contents immediately available free of charge on the journal's website and articles are authorised for sharing and reuse under Creative Commons licences. Gold Open Access publication requires an article processing fee. In this case, the article processing fee will not be required until the end of 2023. One may wonder why Molecular Aspects of Medicine has not adopted this model. The answer is simple: Molecular Aspects of Medicine only publishes invited review articles, a structure that is incompatible with charging an article processing fee. Instead, Aspects of Molecular Medicine will also publish primary research articles and spontaneous reviews, usually paid for through institutional funding or grants. New open-access journals are often created, especially by predatory publishers, who offer easy publication in exchange for a fee. This will not be the case for Aspects of Molecular Medicine, which will maintain the most rigorous peer review tradition of academic journals. The journal will have an editor-in-chief and section editors for the topics of cancer, inflammation, metabolism, bioactives, neurobiology and immunology, a structure that has been put in place thanks to the collaboration of IUBMB, the journal's academic sponsor. The Editor-in-Chief's portal is already open for submissions, which have started immediately. Apparently, novelty and seriousness are attractive features for publishing. A special issue will also appear in the first volume and will be devoted to viruses, obviously a topic of great scientific and popular interest. Articles (still in preparation) will cover SARS-CoV-2, transfusion-transmissible viruses, West Nile Virus, Human Parvovirus B19, the role of extracellular vesicles in the transmission and infection of respiratory viruses, and Monkeypoxvirus. The issue will also contain an article on a new test that uses molecular recognition and amplification of the target virus, but not by traditional PCR. This should enable much earlier detection - within a couple of days of exposure - providing critical, time-sensitive information to help curb the spread of the disease. Furthermore, the test is designed to provide a reading in a fraction of the time required by most other tests. It has no technical hardware requirements and offers high sensitivity and a simple binary paper reading that can tell the healthcare provider if the patient is positive for a disease within 30 minutes.

IUBMB JOURNAL HIGHLIGHTS

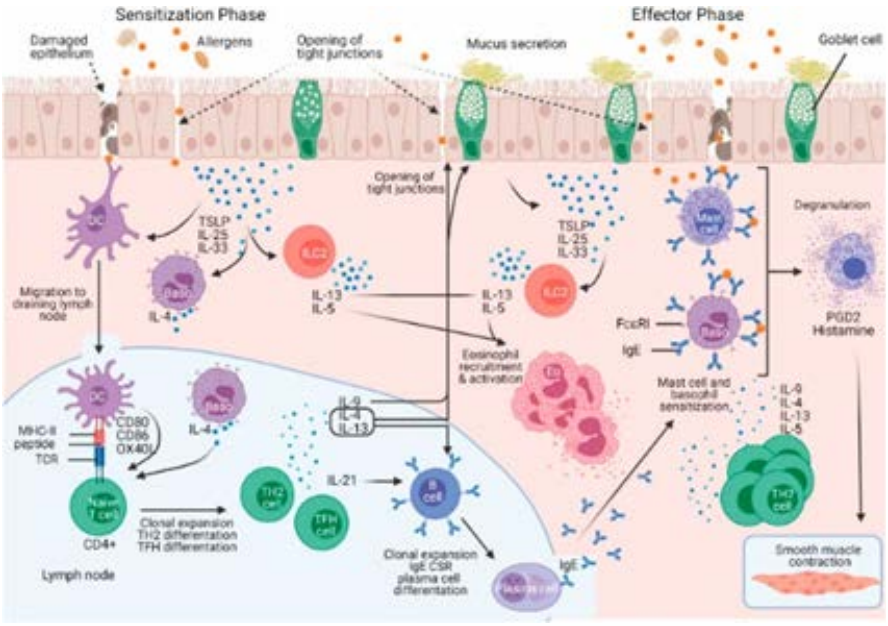
Molecular Aspects of Medicine and Aspects of Molecular Medicine:

Two complementary journals in the service of science

By Angelo Azzi, Editor-in-Chief, Molecular Aspects of Medicine, Tufts University, Boston, USA

In our enthusiasm for the prospects of the new Aspects of Molecular Medicine, we must not forget the old Molecular Aspects of Medicine. The year now drawing to a close has seen six volumes, starting with 'Delivery to tissues', edited by Sylvia Daunert, Sapna Deo and Shanta Dhar (volume 83), which describes cutting-edge ways of administering drugs, not forgetting the oldest known reference (circa 1554 B.C.) of therapeutic aerosol administration in ancient Egypt.

Then there was volume 84, 'Hemoglobin and myoglobin in their reactions with ligands', edited by Paolo Ascenzi, Andrea Bellelli and Massimo Coletta, which takes up a famous book on the subject by Maurizio Brunori, still cited after half a century.



A cutting-edge topic, 'Molecular Aspects of Asthma', edited by Mario Cazzola, occupies volume 85 and illustrates how complicated the molecular mechanisms of asthma onset are, as described in the image, taken from one of the papers in the issue.

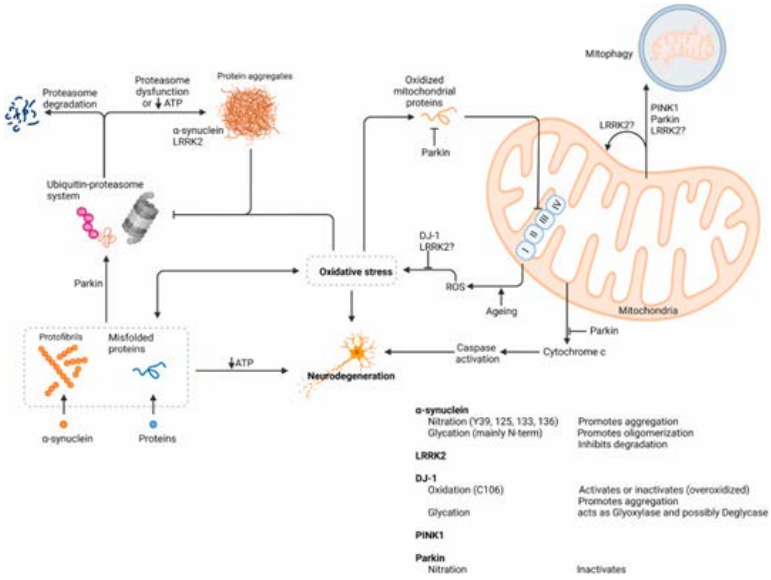
IUBMB JOURNAL HIGHLIGHTS

Molecular Aspects of Medicine and Aspects of Molecular Medicine:

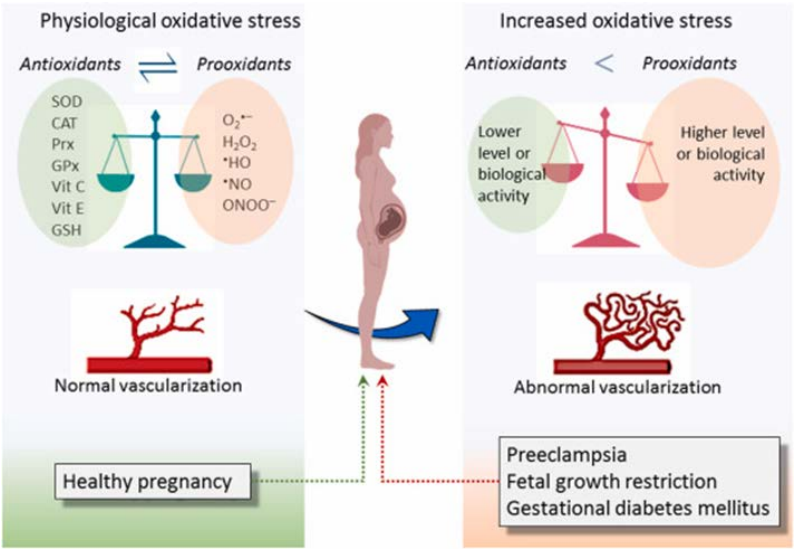
Two complementary journals in the service of science

By Angelo Azzi, Editor-in-Chief, Molecular Aspects of Medicine, Tufts University, Boston, USA

'Impact of Post-Translational Modification on the Genesis and Progression of Diseases', edited by Joachim Jankowski, is contained in Volume 86. Beyond genetics, protein and lipid modifications are at the root of diseases and on them may rest hopes for a cure. The impact of post-translational modifications on disease genesis and progression is suggested in the Parkinson's disease vignette, which suggests a role of non-enzymatic post-translational modifications in disease onset and progression.



And now we have a new concept, that of the exposome. The definition of the exposome was given by Christopher Paul Wild only 20 years ago. The exposome refers to the external and internal environmental factors that determine the state of human health, integrating the effects mediated by the genetic background. The external exposome includes air pollution, chemicals in food and water, and diet, while the internal exposome includes age, genetic and metabolic profile. The topic covered in Volume 87 is 'Molecular aspects of the exposome and metabolic diseases', edited by Luis Sobrevia. The figure below summarizes the concept, particularly in relation to healthy and pathological pregnancy.



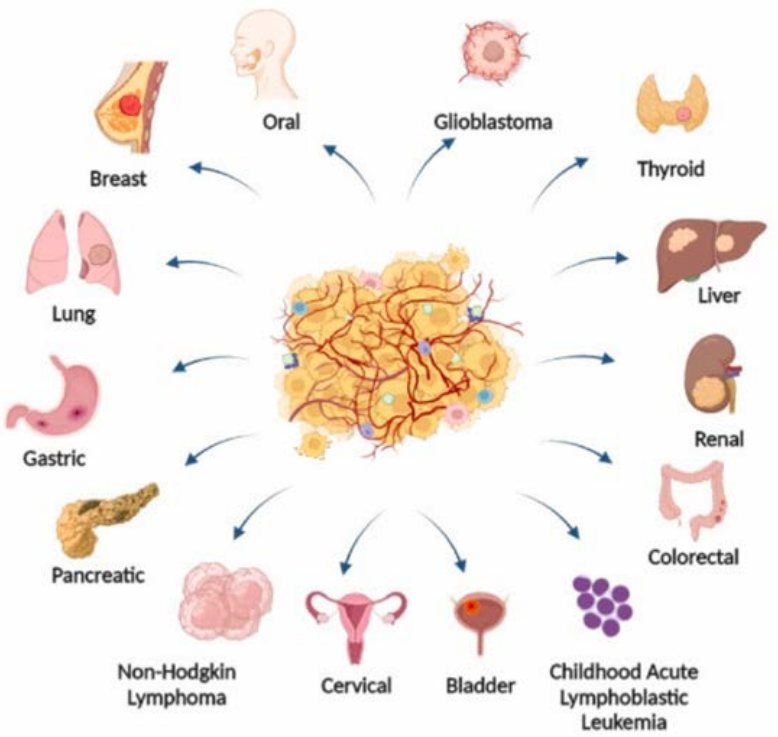
IUBMB JOURNAL HIGHLIGHTS

Molecular Aspects of Medicine and Aspects of Molecular Medicine:

Two complementary journals in the service of science

By Angelo Azzi, Editor-in-Chief, Molecular Aspects of Medicine, Tufts University, Boston, USA

The year 2022 closes with Volume 88 'Proteases in health and disease', edited by Boris Turk, which offers a comprehensive overview of the subject. The role of a single protease, cathepsin S, shown in the figure below, illustrates the key role of this protease in a large number of diseases.



The year 2022 is not yet over and we can already look forward to the next one with a number of exciting volumes, already commissioned and some with chapters already submitted. Volume 89, 'Bioactives', was edited by Cesar Fraga and Patricia Oteiza; Volume 90, 'Personalised Medicine', was edited by Christopher Hopkins; Volume 91, 'Siglecs', was edited by Shoib Siddiqui; volume 92, 'Organ Fibrosis', was edited by Maurizio Parola and Massimo Pinzani; volume 93, 'Human Mycoses', was edited by Matteo Bassetti; volume 94, 'Tumor Vaccines In Cancer Prevention', was edited by Federica Cavallo and Pierluigi Lollini.

At this point, I can only close by wishing all the readers of the IUBMB Newsletter a happy end of the present year, and an exciting New Year with all the articles from Molecular Aspects of Medicine and Aspects of Molecular Medicine.

IUBMB JOURNAL HIGHLIGHTS

Trends in Biochemical Sciences

Our October issue has a focus on plant biochemistry. It includes several articles highlighting exciting research in plant biochemistry, and many of these authors share their thoughts on the exciting future of plant biochemistry research. The issue includes reviews on how plants feel and survive the heat, amino acid metabolism in plant-microbe interactions, chloroplast degradation and cell death, and regulating auxin/IAA protein degradation. The focus issue also includes a Spotlight highlighting structural work on the plant hormone salicylic acid receptor NPR1 and a TrendsTalk with Pierre Goloubinoff, Jesse D. Woodson, Lucia C. Strader, and Zheng Qing Fu discussing important questions and future directions in plant biochemistry. Also don't miss a Scientific Life article in the issue on starting your own laboratory as a new PI. https://www.cell.com/trends/biochemical-sciences/issue?pii=S0968-0004(21)X0011-4

IUBMB LIFE JOURNAL DEADLINE

Special Issue - Open Call for Paper

Cancer drug resistance: molecular mechanisms, and therapeutic Implications

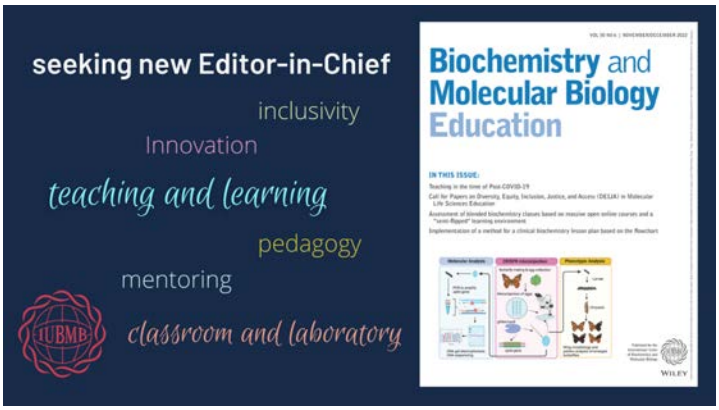
GUEST EDITORS: Mandeep Kaur, (University of the Witwatersrand)

Manuscripts should be submitted by **30 March 2023**

Expected issue publication will be summer 2023

The proposed special topic will be dedicated to compiling a collection of articles focusing on exploring different aspects of cancer drug resistance in in vitro, in vivo, cancer stem cells and 3D cultures models. The topic would also solicit submissions on latest therapeutic developments in this area of research and ways to reverse drug resistance in cancer cells. The types of articles can be review articles, original research (basic research or translational studies), and clinically relevant biomarkers for monitoring the therapeutic response of patients to drugs etc.

IUBMB JOURNAL DEADLINE



The International Union of Biochemistry and Molecular Biology (IUBMB) seeks a new Editor-in-Chief for ***Biochemistry and Molecular Biology Education (BAMBED)***, is an international journal aimed to enhance teacher preparation and student learning in Biochemistry, Molecular Biology, and related sciences such as Biophysics and Cell Biology, by promoting the world-wide dissemination of educational materials. The journal publishes on all aspects of biochemistry and molecular biology education, ranging from innovative teaching methods, emerging topics in teaching, history of the field and beyond.

The successful candidate will be a leading member of the biochemistry and molecular biology community. They will have an outstanding publication record; extensive experience in peer review and/or editorial roles; an extensive, global network; an appreciation of diverse methodologies and biological systems within the journal's scope; and will represent the diversity within the IUBMB global community.

The successful candidate will have an outstanding opportunity to further develop the journal over a maximum three 3-year terms in the role. They must demonstrate a clear vision for its future growth and position in the publishing landscape. The appointee will bring extensive experience in peer review and/or editorial roles, high ethical professional standards, innovation, enthusiasm, strong leadership, and organizational and communication skills to the journal.

The appointed Editor-in-Chief will be responsible for: the vision, strategy and practical development of the journal; defining content and commissioning papers for regular and special issues; maintaining editorial standards; providing strong and inspiring leadership to the journal's editorial board; appointing new board members to grow the journal; promoting the journal; and working closely with IUBMB and the publisher (Wiley) to manage publication. This important leadership role will require a significant time commitment and will be recompensed accordingly. Associate Editors are appointed to limited terms by the Editors-in-Chief to handle some functions, subject to approval by the IUBMB Executive Committee. The Editor-in-Chief of Biochemistry and Molecular Biology Education will receive an annual honorarium and is supported by professional editorial office assistance.

Applications should include the following

1) A full CV, including details of peer review and/or editorial roles and the applicant's publication record
2) A brief statement describing your vision for *Biochemistry and Molecular Biology Education*
3) A cover letter outlining your suitability for the Editor-in-Chief role
4) Two reference Letters

Please send any queries relating to this appointment and applications, in confidence, to: Professor James Murphy (*jamesm@wehi.edu.au*), Chair of the IUBMB Publications Committee. **Applications should be sent no later than April 30, 2023**. The Publications and Executive Committees of IUBMB will make the final selection. The appointed candidate would commence as Editor-in-Chief on January 1, 2024.

IUBMB upholds the principles of equity, diversity and inclusion.

UPCOMING IUBMB DEADLINES

IUBMB Congresses & Focused Meetings

IUBMB Congresses provide unique occasions for expert review of international advances at the cutting edge of biochemistry and molecular biology, and are held triennially in countries that are members of the Union.

****The call for applications to the IUBMB Congress in 2030 is April 14, 2023****

IUBMB Focused Meetings cover "cutting edge science" of clear relevance to Biochemistry and Molecular Biology. IUBMB's financial contribution to each Focused Meeting is for a maximum of US$ 60,000. Funding will be prioritized for new meetings with the goal of helping the organizers launch a new series on the topic. Funding for repeated topics and/or organizing groups will not be considered.

****The application deadline for Focused Meetings is June 1st of two calendar years before the event is to take place (i.e. June 1, 2023 for meetings in 2025)****

Upcoming Focused Meetings for 2023

- IUBMB-EMBO Focused Meeting on Emerging Concepts of the Neuronal Cytoskeleton (6th Edition) in
- IUBMB Focused Meeting on Aminoacyl-tRNA Synthetases (AARS 2023) in
- IUBMB Focused Meeting on Extremophilic Fungi (FUN- EX) in
- IUBMB Focused Meeting on Integrative Omics of Nuclear Functions in

UPCOMING IUBMB DEADLINES

Applications are now being accepted for the Promoting Research Opportunities for Latin American Biochemists (PROLAB) Program. This program gives graduate students and postdoctoral fellows to visit a lab in the US or Canada for up to six 6 months.

Deadline: February 24, 2023 at 11:59 p.m. EST

Travel Fellowships are designed to support travel to meetings for trainees in the IUBMB region. No deadline submission.

The IUBMB Relocation Support for Displaced Trainees has no deadline submission.

- Wood-Whelan Research Fellowships supports up to 4 months in a lab and up to a maximum of US $4,000 for travel expenses.
- Mid-Career Research Fellowships support up to 2 months in a lab and up to a maximum of US $5,000 for travel expenses.
- Tang Education Fellowships supports educators visiting another institution to either advise/teach or learn up to 2 months and up to a maximum of US $4,000 for travel expenses.

Deadlines: April 1, 2023

Is there a meeting or course you would like to attend from anywhere in the world? In response to the pandemic, we have collaborated with MilliporeSigma to offer Virtual Meetings and Courses Fellowships with no deadline submission.

UPCOMING IUBMB DEADLINES

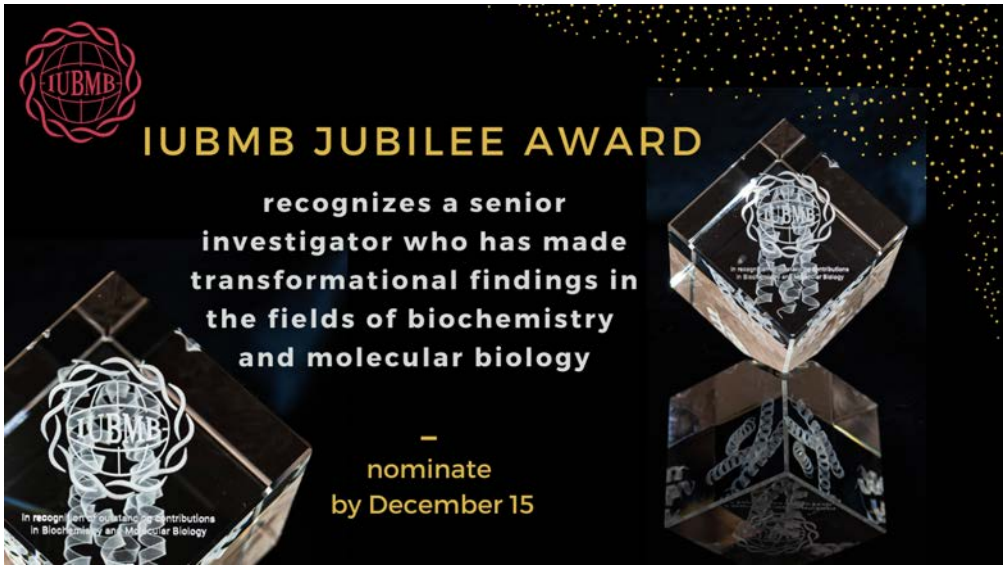
Funding for Educational Activities changed to allow funding for online (virtual) activities

The deadline for funding for Educational Activities is April 1st and includes funding for both face-to-face and online (virtual) workshops, meetings or symposiums.

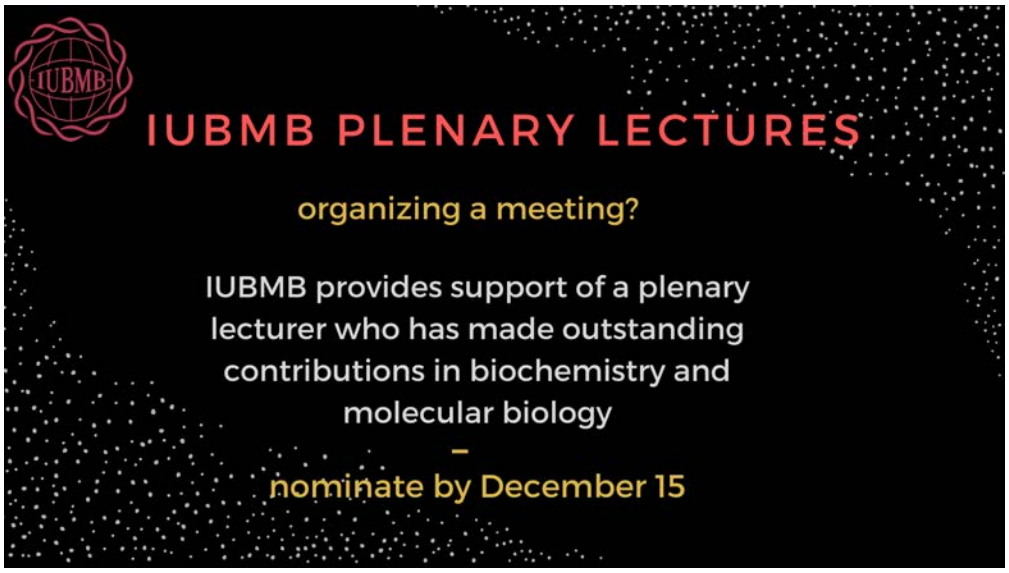
IUBMB Advanced Schools support training of grad students and postdocs on specific topics in molecular biosciences. One more way we support training the next generation.

For meetings in Europe, IUBMB automatically covers the expense for use of the "IUBMB/Brian Clark lecture hall" in the month of May for Spetses island, Greece for the organization of Special Meetings, Symposia, Advanced Schools etc.

UPCOMING IUBMB DEADLINES



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



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

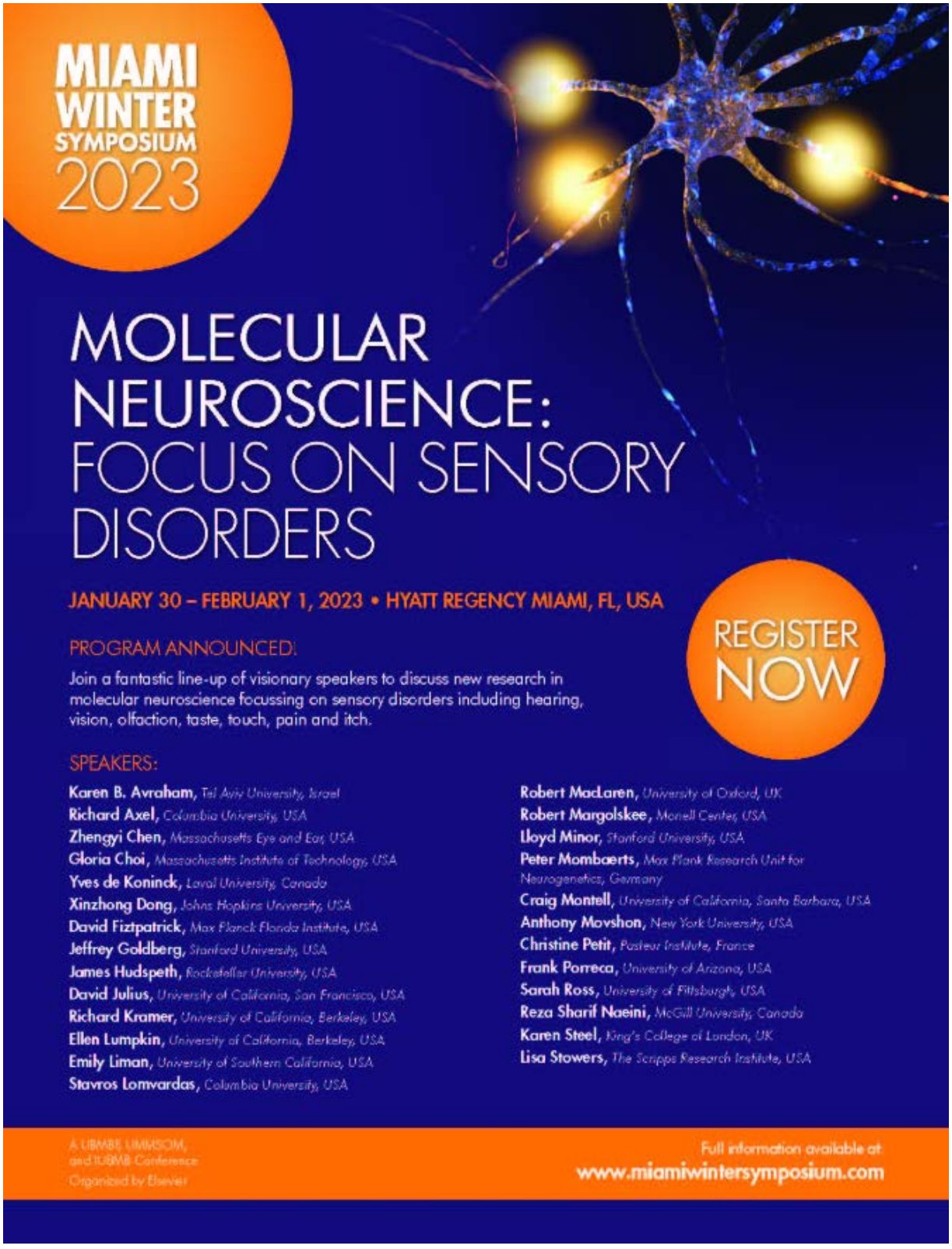
UPCOMING MEETINGS 2023

SCGES, the Standing Committee for Gender Equality in Science, is holding a webinar on December 16 2022, organized by the International Union of History and Philosophy of Science (IUHPST).

The SCGES Webinar Series is a monthly event organized by its Partner Institutions and coordinated by the Standing Committee for Gender Equality in Science. It highlights various topics of interest around the focus tasks of the Committee.

Register here to attend the webinar | Past SCGES Webinars can be viewed on the SCGES YouTube channel

UPCOMING MEETINGS 2023



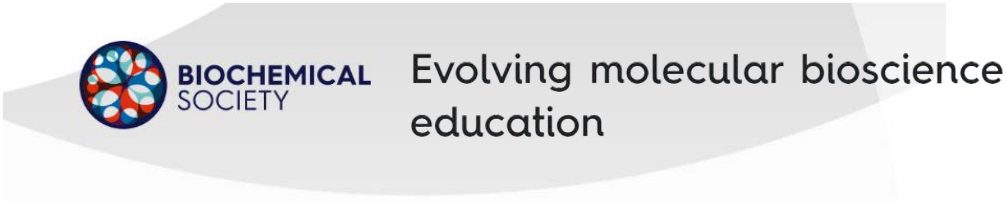
Submit Poster Abstracts | Program | Meeting Link

UPCOMING MEETINGS 2023

Discover BMB is the annual meeting of the American Society for Biochemistry and Molecular Biology and is held in Seattle, Washington at the Arch building of the Seattle Convention Center.

With a mission to share the latest, most impactful research findings in the molecular life sciences, #DiscoverBMB offers an exciting agenda that includes in-person and virtual sessions, talks by the field's foremost experts, interactive workshops on the latest trends, technologies and techniques, and an invigorating exhibition of posters, services and products.

JAN 18: Abstract Deadline | **JAN 31**: Registration Deadline | Meeting Link



A joint event organised by FEBS and the Biochemical Society, in association with the IUBMB.

Evolving molecular bioscience education is back for its fifth event in the series!

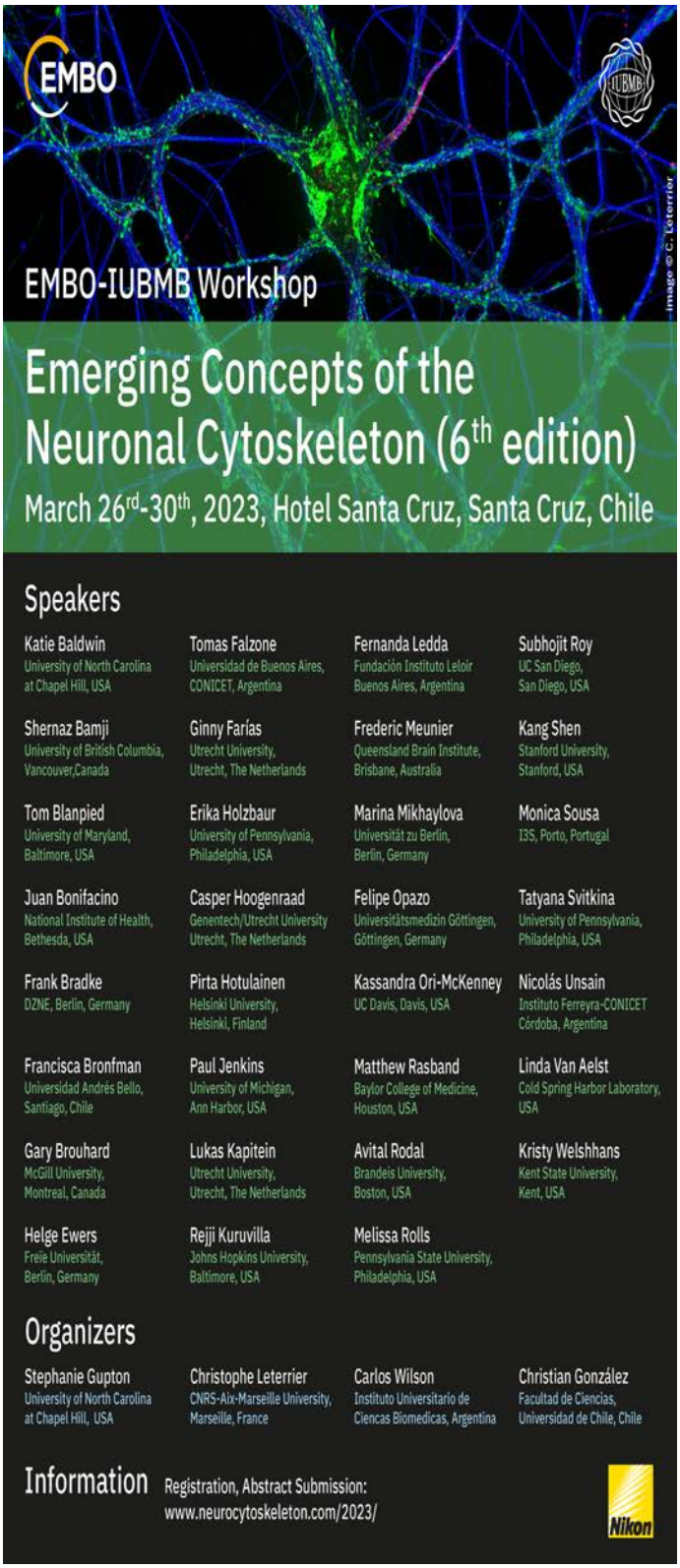
This two-day event is aimed at anyone teaching or supporting learning in higher education in the molecular biosciences, from early career researchers to established professors. The event will comprise of group discussions, talks from invited speakers, and flash talks and posters from delegates. The event will focus heavily on communities of practice in bioscience education.

Topics include:

- Novel approaches to student assessment
- Practical solutions for improving inclusivity and accessibility of bioscience education
- Evaluating, understanding and promoting student engagement
- Communities of practice for the development of teaching, considering both staff and students

March 25-26, 2023 in Manchester, UK | Meeting Link

UPCOMING MEETINGS 2023



About the Workshop

This is the sixth edition of a long-running workshop intended to expose students and fellows to cutting edge research in the neuronal cytoskeleton field, and to help them forge closer ties with the international community that would lead to future opportunities.

Cytoskeletal dynamics is at the core of the most essential questions in cellular neurobiology, such as mechanisms of axon growth in development and in response to injury, or mechanisms of synapse formation and stabilization. It is also a key element of intracellular transport, which is critical for axonal development and neurotrophic signaling, but which is also disrupted in many, if not all neurodegenerative diseases. Consequently, the cytoskeleton in neurons is a promising and emerging target for the development of novel therapeutic approaches to treat neurodegenerative diseases and to promote axon regeneration after traumatic injury. Recent advances in imaging, genetics and cell-molecular biology have catalyzed exciting new progress. However, fundamental questions about how neuronal cytoskeletal assembly, functions and dysfunction is orchestrated remain unanswered. In this workshop we will explore the latest findings on this exciting topic and will address several features involved in cytoskeleton function in nerve cells such its role in trafficking and transport, neuronal polarity, axonal guidance and neuronal migration.

Early career scientists are encouraged to submit abstracts to be selected for short talks.

online poster | Meeting Link

Abstract submission: September 15th - December 15th, 2022

Registration: December 15th - March 1st, 2023

UPCOMING MEETINGS 2023

Canadian Society for Molecular Biosciences
Promoting and advancing molecular understanding of biology

66th annual CSMB meeting: Metabolic Regulation of Cell signaling

About the Meeting

From May 30 – June 2, 2023, the Ottawa Institute for Systems Biology (OISB) will host the 65th Annual Canadian Society for Molecular Biosciences (CSMB) International Conference in Ottawa.

The 2023 meeting will be held over four days at the new Learning CrossRoads (CRX) building on the University of Ottawa campus. Our aim is to attract ~300 researchers from across Canada and internationally by offering top-tier speakers, special programing for trainees, and outreach events – all at an affordable cost. The conference concludes with a banquet at the Canadian Museum of Nature.

The theme of the Meeting will be **"Metabolic Regulation of Cell Signaling"**. Our Keynote Speaker will be **Dr. Marcus Ralser** from Charité - Universitätesmedizin Berlin. Dr. Ralser uses systems and computational approaches to understand metabolic and protein networks. Our sessions will be broad in scope, and so the event is ideal for anybody doing working in the molecular biosciences. The majority of talks in platform sessions will be chosen from YOUR submitted abstracts, but we have an excellent lineup of invited speakers and chairs to lead those sessions. Keep an eye on the @CSMB2023 twitter feed for updates on session chairs, speakers and more!

UPCOMING MEETINGS 2023

The IUBMB Focused Meeting on Aminoacyl-tRNA synthetases

About the Meeting

We are pleased to announce the **IUBMB Focused Meeting on Aminoacyl-tRNA Syntheses***: the 13th International Symposium on Aminoacyl-tRNA Synthetases* (AARS2023) will occur June 4-9, 2023 in Grand Bend, Ontario. AARS2023 is an international conference that brings together ~200 scientists from all over the world to advance the frontiers of research with respect to the essential functions of the AARSs in protein synthesis and translation fidelity and their relationship to disease caused by human pathogens or by genetic mutations in the human population. Our research community includes scientists, clinicians, and representatives from the pharmaceutical industry that will meet to reveal new knowledge regarding the origin of genetic coding, the structure and mechanism of the translational apparatus, the diverse roles of AARSs in protein synthesis, as well as non-translational functions and physiological regulation in human disease.

Our updated website and registration page just went live, so we are delighted to invite you to register for the meeting at your earliest convenience. Please consult our website (www.aars2023.com) to view our list of stellar and already confirmed keynote and invited speakers. There are also many openings for talks to be selected from abstracts, including student talks, and ample space for poster presentations.

KEY DEADLINE DATES FOR 2023

February 1st	Deadline for early bird registration rates
February 15th	Deadline for your abstract to be considered for a talk
April 15th	Final deadline for registration for the conference

Conference details and registration is available at the main website. Please send any questions to aars2023@uwo.ca.

We will begin the meeting on **Sunday June 4, 2023**. There will be a welcoming reception for early arrivals starting at 3:30 pm (Eastern Time), and at 5:00 pm we will have opening remarks from the president of IUBMB, Alexandra Newton. Our first lecture will occur after dinner at 7:00 pm. The meeting will end with a gala dinner on Thursday June 8, 2023 followed by some special keynote lectures. Breakfast will be available on Friday June 9, 2023. We have arranged 3 buses departing Toronto Pearson International Airport (YYZ) at different times on Sunday June 4, and there are also 3 return busses to Toronto Pearson departing from the Oakwood Resort beginning early on Friday June 9. On the registration page, you can reserve a seat on one of the busses.

UPCOMING MEETINGS 2023

July 8-12, 2023 in Tours, France | **MAR 9**: Abstract & Early Registration Deadlines | Meeting Link

September 8-12, 2023 in Zaragoza, Spain | Meeting Link

UPCOMING MEETINGS 2023

About the Conference

Extreme environments are hostile to most life as we know it. Only a small selection of species have adapted to survive and thrive in some of the most extreme conditions on our planet. Research on extremophiles has traditionally been focused on prokaryotes, but this focus has been repeatedly challenged by the discovery of various fungi as part of the extreme microbiome. Despite their much more complex cell structure, fungi approach, and in some cases surpass, the stress tolerance of bacteria and archaea.

The study of fungi from various extreme environments, from arid and hypersaline to cold and acidic, attracts a vibrant and ever-growing scientific community. Although the topic is receiving increasing attention at some of the most prestigious international meetings, a dedicated international conference has been lacking.

So far, research on extremophilic fungi was presented as a minor part of specialized congresses, dedicated to hypersaline or polar environments, where the vast majority of talks was focused on bacteria and archaea. Extremophilic fungi are also increasingly presented as separate »exotic« topics at major mycological congresses, where they attracted much attention because they expanded the boundaries of eukaryotic life in general. Today, it is clear that fungi represent an integral part of microbial communities in ecological niches that were previously considered either abiotic or exclusively populated by prokaryotes.

Therefore, the first **IUBMB Focused Meeting on Extremophilic fungi** will be held from 19-22 September 2023 in Ljubljana, Slovenia. It will bring together world-renowned experts, young scientists, and students who explore the diversity, adaptations, and potential applications of extremophilic fungi, and help usher in the next era of extreme mycology.

Since this is a first-time event, we would like to encourage as many researchers as possible to attend in person, with particular emphasis on young researchers and early career scientists. Therefore the support that we received from IUBMB is extremely helpful and gratefully acknowledged.

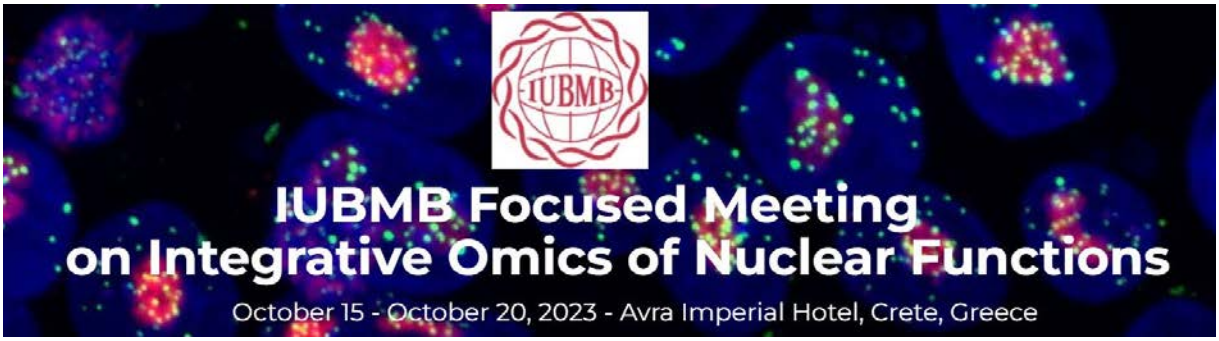
Twitter handle: @extremefungi
Hashtag: #funextremophiles

UPCOMING MEETINGS 2023

As usual, the meeting will cover a wide variety of topics centered on eukaryotic gene expression, from detailed molecular analyses to genome-wide studies. Despite its regional focus, this conference aims to bring together scientists from all over the world, at different stages of their scientific careers, to discuss recent advances in this active and fast-paced area of research. Now in its third edition, the conference continues to promote collaborations between Latin American and international researchers, and provides a platform for regional researchers to showcase and discuss their work in an international forum.

September 25-29, 2023 in Puerto Varas, Chile | Meeting Link

UPCOMING MEETINGS 2023

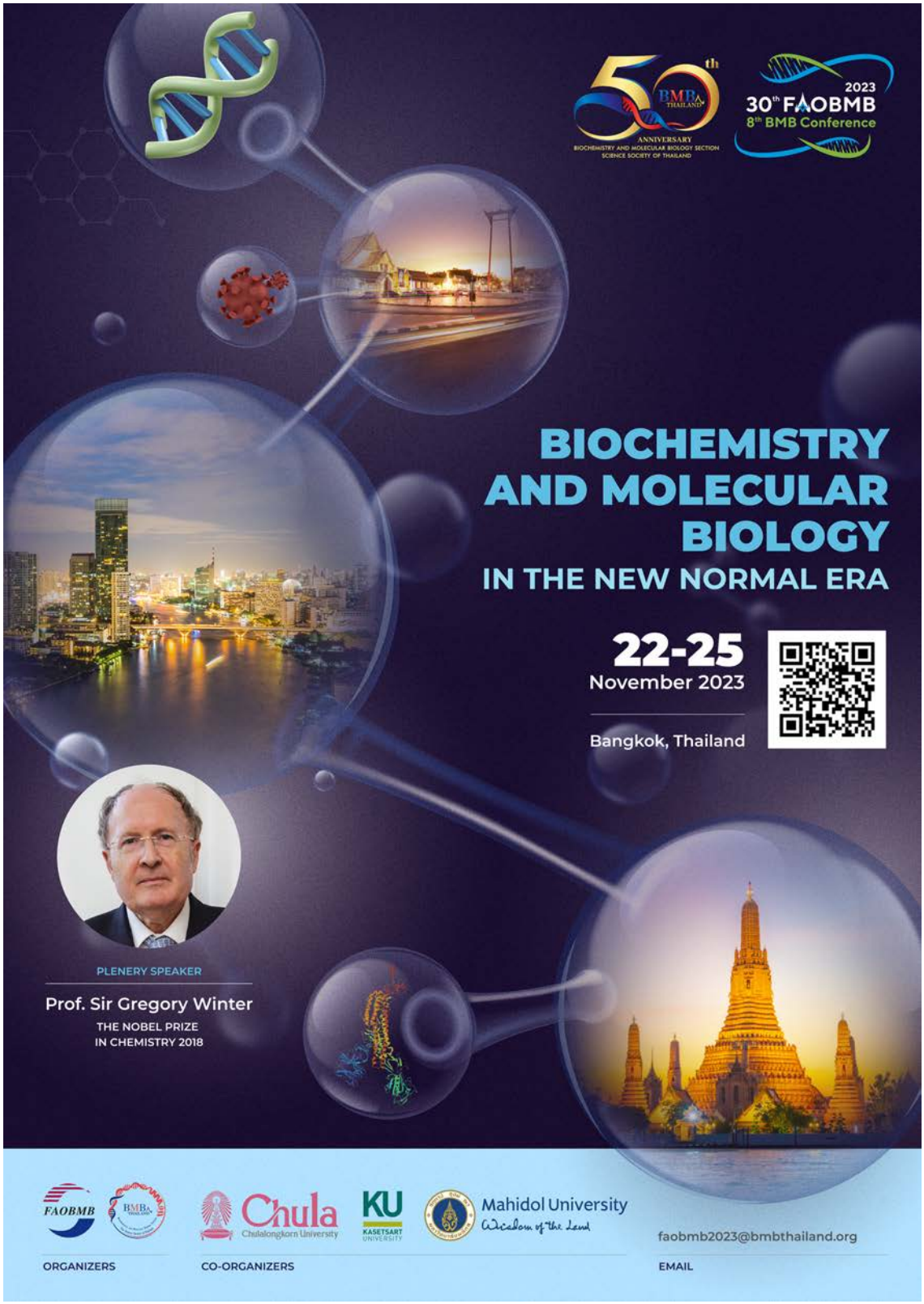


About the Meeting

The eukaryotic nucleus contains all the information required to build an organism. This is achieved through a multitude of interactions between the DNA and the proteins that package and regulate the DNA in the nucleus, i.e. chromatin. While the DNA has been fully sequenced, many unknowns remain regarding the nature and dynamics of the interactions between the protein and nucleic acid components of chromatin, both in terms of structural organization and of the regulation of gene activity and other DNA-templated processes. In recent years insights from quantitative single-cell and single-molecule approaches have led to the realization that cell-to-cell variability and the stochastic nature of molecular events, as well as physical phenomena such as phase separation, are central to chromatin biology. As the complexity of nuclear processes is becoming ever more apparent, there is a growing need for the integration of data from the different techniques to study them. Therefore, the scope of the IUBMB Focused Meeting on Integrative Omics of Nuclear Function is to provide a wider perspective of how advanced genomic, proteomic, and imaging approaches can be combined to investigate nuclear structure and function. An important goal of the meeting is to foster exchange between scientists employing diverse experimental and computational approaches to investigate different aspects of chromatin biology to integrate and visualize protein and DNA networks to better understand the dynamics of nuclear processes.

The **scientific program** of the meeting includes lectures by leaders in the field and up-and-coming talents, organized in 10 scientific sessions and 3 Keynote Lectures with a total of 32 invited speakers. Junior scientists will have the opportunity to present their work in selected short oral presentations and in two poster sessions. Each poster session will also be accompanied by “poster flash talks”. The program includes a “problem solving” session for the participants to personally interact with expert speakers to discuss specific aspects of their research project. Lastly, the program includes Women in Science and Science in Society Lectures and a Round Table discussion of current and future challenges in nuclear biology to conclude the meeting.

UPCOMING MEETINGS 2023



UPCOMING MEETINGS 2023

FEBS-IUBMB-enable

2nd International Molecular Biosciences
PhD and Postdoc Conference

The emerging challenge

Environmental impacts on human health

23rd-25th November 2023
University of Cologne, Germany

www.enablenetwork.eu

Our website will be updated with more information about the upcoming conference after 19th November 2022

UPCOMING MEETING 2024

We invite you to join us at **Biomolecular Horizons 2024: Discover, Create, Innovate** to be held in Melbourne, Australia from 22-26 September 2024.

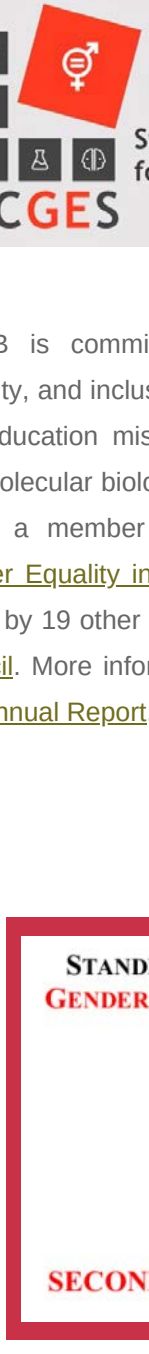
This important forum will bring together three prestigious congresses, each with a strong history of attracting the Bioscience and Biotechnology communities together to discuss and examine the latest developments and research:

- 26th Congress of the International Union of Biochemistry and Molecular Biology (IUBMB)
- 17th Congress of the Federation of Asian & Oceanian Biochemists & Molecular Biologists (FAOBMB)
- 22nd ComBio Conference (ComBio)

This will be the first time the IUBMB Congress will be held in Melbourne and only the third time in the Southern Hemisphere. It will join with FAOBMB and ComBio to create a truly global forum bringing together renowned scientists from across the world, from Nobel Laureates to early career scientists.

ANNOUNCEMENT

IUBMB is committed to ensuring gender equity, diversity, and inclusion in all of its leadership, training, and education missions in the field of biochemistry and molecular biology. As part of this, we are pleased to be a member of the Standing Committee for Gender Equality in Science (SCGES) where we are joined by 19 other unions of the International Science Council. More information is available in the SCGES 2nd Annual Report.



THE ROYAL SOCIETY PUBLISHING

Why not edit a theme issue of *Philosophical Transactions B*?

Each issue is carefully planned out, so is more like a book than a standard collection of related papers. The broad scope means that you are not restricted in terms of subject area, and you can be inventive with different article types. As Guest Editor, you will have the opportunity to build your network and gain editorial experience, with a high-profile Editorial Board and experienced staff to help you at every step of the way.

Find out more by visiting our website or downloading our flyer. Then, if interested, please contact the Commissioning Editor, Helen Eaton, with your ideas.

For more information, please contact Felicity Davie at:

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T: +44 20 7451 2647
The Royal Society
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London SW1Y 5AG
E-mail: Felicity.Davie@royalsociety.org
http://royalsocietypublishing.org

ANNOUNCEMENT

IRB Barcelona

International PhD Fellowship Programme 2023

IRB Barcelona is offering **9** PhD positions for young scientists from the national and international community who wish to undertake a doctoral degree in biomedicine.

Positions available:

Up to **7** FPI positions (FPI-Project) associated with the "Proyectos de Generación de Conocimiento 2022" Call (funded by the Agencia Estatal de Investigación AEI- MICINN).

Two groups, each offering funding for a PhD researcher.

Call opening: 29/11/2021

Deadline for applications: 16/01/2023

For more information visit the link

Supported by:

ANNOUNCEMENT

We are enormously grateful to Dr. Hugo Maccioni for volunteering his time and expertise to IUBMB where he served on the Committee of Congresses and Focus Meetings for many years. We will miss him!

In memory of Dr. Hugo Maccioni
(17 January 1941 – 9 March 2022)

A giant of Latin American Science passed away earlier this year. Dr. Hugo Maccioni, a renowned Argentinian biochemist, beloved mentor and strongest supporter of PABMB and of Latin American biological sciences in general left us on March 9th.

Hugo graduated in Biochemistry in 1963 and completed his PhD in Neurochemistry in 1968 at the Faculty of Chemical Sciences of the National University of Cordoba (Argentina). In 1978 he became full Professor of Biochemistry at the same Faculty.

His visionary spirit, energy and teamwork guided the development of Molecular Biology and Cell Biology at the National University of Cordoba.
As a researcher he investigated the metabolism of glycosphingolipids and the cellular and molecular bases of intracellular traffic of membrane proteins in higher eukaryotes. His seminal studies were published in more than 100 scientific articles and reviews.

Hugo received many prizes and awards, including the Bernardo Houssay prize for outstanding work in Experimental Biology (from the Argentine Society of Biology 2001), he was elected member of the National Academy of Exact, Physical and Natural Sciences (2005) and was an International Research Scholar of the prestigious Howard Hughes Medical Institute (1997-2001; 2002-2007).

Hugo was President of the Sociedad Argentina de Investigación Bioquímica (SAIBBM, 1987-1989), of the Sociedad Argentina de Neuroquímica (SAN, 1994-1995), of the Academia de Ciencias Médicas (2009-2010) and also President of the Pan-American Association for Biochemistry and Molecular Biology (PABMB, 2014-2017).
Dr. Maccioni will be remembered as a most honorable, wise and kind person. His generous and constant dedication to the PABMB strengthened the relationships with other regional and international Societies. We will always remember, love and be grateful to Hugo for all he did for Latin American Science and especially for the PABMB.

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.

Tang Education Fellowships. The IUBMB Tang 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.

Mid-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 the Miami Winter Symposium.

MilliporeSigma Virtual Meeting Fellowships. This collaboration between IUBMB and MilliporeSigma provides support to trainees to attend virtual meetings in the IUBMB region.

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

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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 Lectures. At IUBMB Congresses, several endowed lectures feature prominently in the program: IUBMB Jubilee 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, Biochemistry and Molecular Biology Education (BAMBEd), Biotechnology and Applied Biochemistry, Molecular Aspects of Medicine, BioFactors. 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.

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