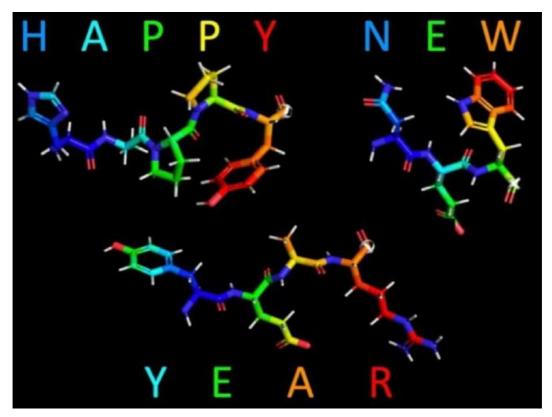
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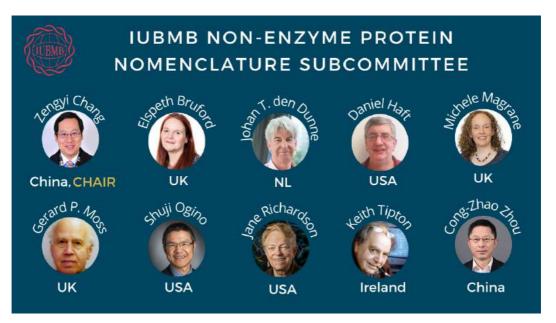


## **2022 JANUARY NEWS**



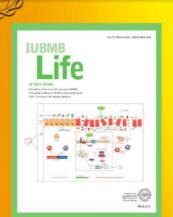
From the IUBMB Executive Committee





The <u>IUBMB Non-enzyme Protein Nomenclature Subcommittee</u> tries to standardize the often hardly meaningful and confusing nomenclature of the tens of thousands of proteins. If you have any good ideas on this challenging matter, please contact Dr. Zengyi Chang (<u>changzy@pku.edu.cn</u>)

## **CONGRATULATIONS**



## Dhiman Chakravarty



From the Bhabha Atomic Research Centre, India, is the winner of the IUBMB Life Best Poster Award titled "Adaptation to salinity stress: role of a cyanobacterial Mncatalase" at the virtual FAOBMB 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists held on 22 - 25 November 2021



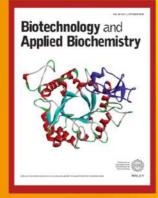


# Congratulations Kai Xin Qoi



From the Universiti Tunku Abdul Rahman, Malaysia, is the winner of the **BioFactors Best Poster Award** titled "Oncostatic Property of Maslinic Acid against Colorectal Cancer via NF-KB Pathway Inhibition" at the virtual FAOBMB 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists held on 22 - 25 November 2021





# Congratulations Madinat Hassan



From the Airforce Institute of Technology, Nigeria, is the winner of the **Biotechnology and Applied Biochemistry Best Poster Award** titled "Anticonvulsant Effect of Flavonoid-rich Fraction of Ficus platyphylla Stem Bark on Pentylenetetrazole Induced Seizure in Mice" at the virtual FAOBMB 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists held on 22 - 25 November 2021

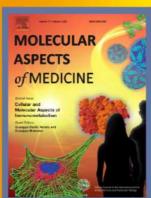


## Markus Brent Arevalo



From the University of Santo Tomas, Philippines, is the winner of the Biochemistry and Molecular Biology Education Best Poster Award titled "In silico analysis of antihyperunicemic properties of maslinic acid as urate anion transporter-1 (URAT-1) inhibitor" at the virtual FAOBMB 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists held on 22 - 25 November 2021





# Congratulations Ishola Afeez Adekunle



From the National Yang Ming Chiao Tung University and Academia Sinica / Taipei Veterans General Hospital, Taiwan, is the winner of the Molecular Aspects of Medicine Best Poster Award titled "CRISPR / Cas13a-mediated Targeting of Oncogenic CircRNA (hso\_circ\_0000190) Suppresses NSCLC Progression" at the virtual FAOBMB 16th Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists held on 22 - 25 November 2021



### **UPCOMING IUBMB DEADLINES**



IUBMB is seeking a New Editor-in-Chief for Biotechnology and Applied Biochemistry, a \*rapid publication\* journal devoted to SynBio, metabolic engineering, & biochemistry applied to biotechnology. **Deadline extended to January 31st.** Info: bit.ly/3dvDyLo



## Open Call for host institutions for FEBS-IUBMB-ENABLE Conferences in 2023 and 2024

The FEBS-IUBMB-ENABLE Conference is a 3-day international and interdisciplinary winter event for PhD students and postdocs, hosted at a different research institute each year.

The FEBS-IUBMB-ENABLE are now inviting applications from academic institutions (either a university or a research institution) to host the November 2023 conference in a country with a FEBS Constituent Society, and any country with an IUBMB Adhering or Associate Adhering Body (except those allowed in 2023) to host the November 2024 conference. We are looking for academic institutions with a strong research background in molecular life sciences and an active PhD community. This event will be organized by a committee of young researchers belonging to the 5 ENABLE institutions. It will be organized following the standards and structure of the previous ENABLE events. FEBS and IUBMB will fund

#### Deadline for Applications:

JAN 31: host the 2023 event in a country with a <u>FEBS Constituent Society</u>
MAR 31: host the 2024 event to any country with an <u>IUBMB Adhering or Associate</u>
Adhering Body, except those allowed in 2023

For more information, visit: https://bit.ly/3w932GN



PROLAB is a joint venture between the Pan-American Association for Biochemistry and Molecular Biology, the International Union of Biochemistry and Molecular Biology, and the American Society for Biochemistry and Molecular Biology.

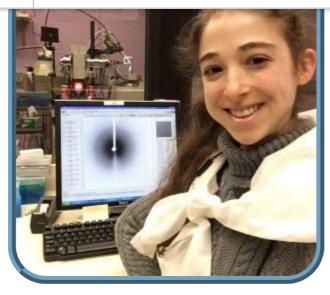
#### Applications are now open

The Promoting Research Opportunities for Latin American Biochemists (PROLAB) program allows graduate students and postdoctoral fellows to spend up to six months in U.S. or Canadian laboratories.

Participants get access to technologies and expertise that may not be readily available in their home countries, allowing them to grow their skills and contribute to building capacity in the life sciences at home.

Trainees and new investigators (not more than five years past postdoctoral work) from all countries active in the PABMB, including Spain and Portugal, are invited to <u>apply</u>.

### **BRI-FING FROM THE BENCH**

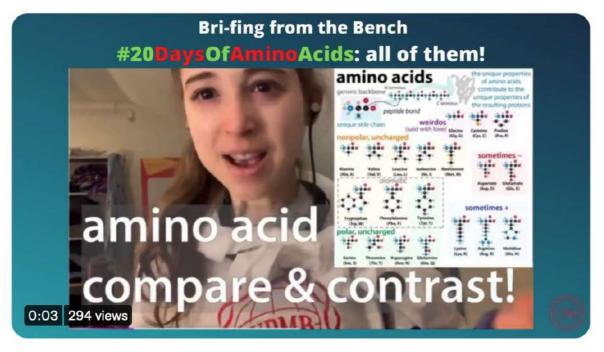


We've followed our Postgraduate Student Ambassador, Bri Bibel's posts about biochemistry, graduate school, and much more over the past few years - we're so happy to now read about <a href="here">her own research!</a>!

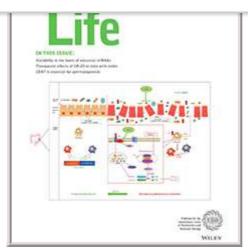


Throughout December, we accompanied the daily #20DaysOfAminoAcids posts from Bri with a daily #KnowYourAminoAcidsQuiz on our Instagram account @the\_iubmb. Correct answers were entered into a rafflle for a 520 piece puzzle of Bri's amino acid infographic. The lucky winner was **Dr. Anna John**, who recently defended her PhD in Biochemistry and Molecular Biology from Upstate Medical University. Check our Instagram for more quizzes and opportunities to win puzzles, metabolic pathways charts, and other biochemistry-related items.





## **IUBMB JOURNALS**



#### New Issue: Volume 73, Issue 12

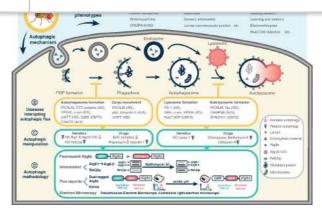
#### Issue Highlights

<u>Drosophila as a model to study autophagy in neurodegenerative diseases and digestive tract</u>

By Fei-Yang Tzou, Jung-Kun Wen, Jui-Yu Yeh, Shu-Yi Huang, Guang-Chao Chen, Chih-Chiang Chan

First published: 07 December 2021

Autophagy regulates cellular homeostasis by degrading and recycling cytosolic components and damaged organelles. Disruption of autophagic flux has been shown to induce or facilitate neurodegeneration and accumulation of autophagic vesicles is overt in neurodegenerative diseases. The fruit fly Drosophila has been used as a model system to identify new factors that regulate physiology and disease. Here we provide a historical perspective of how the fly models have offered mechanistic evidence to understand the role of autophagy in neurodegenerative diseases Alzheimer's disease, Parkinson's disease, Charcot-Marie-Tooth neuropathy, and polyglutamine disorders. Autophagy also plays a pivotal role in maintaining tissue homeostasis and protecting organism health. The gastrointestinal tract regulates organism health by modulating food intake, energy balance, and immunity. Growing evidence is strengthening the link between autophagy and digestive tract health in recent years. Here, we also discuss how the fly models have advanced the understanding of digestive physiology regulated by autophagy.

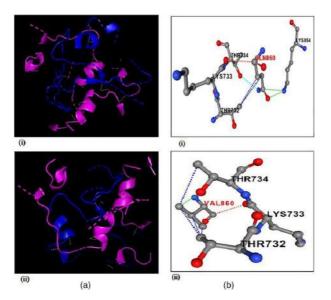


• <u>Underlying selection for the diversity of spike protein sequences of SARS-CoV-</u>
2

By Manisha Ghosh, Surajit Basak, Shanta Dutta

First published: 15 November 2021

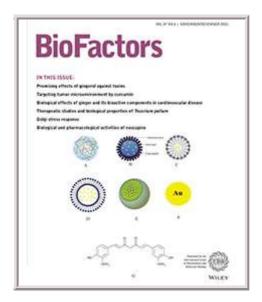
The global spread of SARS-CoV-2 is fast moving and has caused a worldwide public health crisis. In the present article, we analyzed spike protein sequences of SARS-CoV-2 genomes to assess the impact of mutational diversity. We observed from amino acid usage patterns that spike proteins are associated with a diversity of mutational changes and most important underlying cause of variation of amino acid usage is the changes in hydrophobicity of spike proteins. The changing patterns of hydrophobicity of spike proteins over time and its influence on the receptor binding affinity provides crucial information on the SARS-CoV-2 interaction with human receptor. Our results also show that spike proteins have evolved to prefer more hydrophobic residues over time. The present study provides a comprehensive analysis of molecular sequence data to consider that mutational variants might play a crucial role in modulating the virulence and spread of the virus and has immediate implications for therapeutic strategies.



See the full list of Calls for papers here

#### **NEW VIRTUAL ISSUES**

See all the new IUBMB Life Virtual issues here



#### New Issue: Volume 47, Issue 6

Issue Highlights

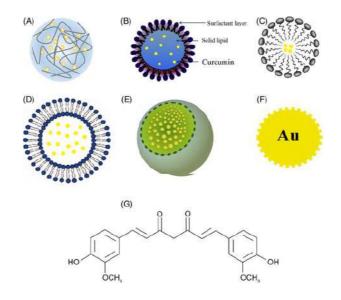
<u>Targeting of the tumor microenvironment by curcumin</u>

By Xiao Fu, Yingni He, Mu Li, Zezhi Huang, Masoud Najafi

First published: 10 August 2021

The tumor microenvironment (TME) is made up of several cells and molecules that affect the survival of cancer cells. Indeed, certain (immunosuppressive) cells which promote tumors can promote the growth of tumors by stimulating the proliferation of cancer cells and promoting angiogenesis. During tumor growth, antitumoral immunity includes natural killer cells and CD8+ T cells cannot overcome immunosuppressive responses and cancer cell proliferation. In order to achieve the appropriate therapeutic response, we must kill cancer cells and suppress the release of immunosuppressive molecules. The balance between anti-tumor immunity and immunosuppressive cells, such as regulatory T cells (Tregs), cancer-associated fibroblasts, tumor-associated macrophages, and myeloid-derived suppressor cells

that not only directly inhibit the growth of cancer cells, but can also modulate the growth and activity of immunosuppressant and tumor-promoting cells. In this review, we explain how curcumin modulates interactions within TME in favor of tumor treatment. The potential modulating effects of curcumin on the responses of cancer cells to treatment modalities such as immunotherapy will also be discussed.



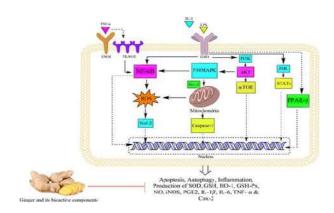
Ginger: A complementary approach for management of cardiovascular diseases

By Nazanin Momeni Roudsari, Naser-Aldin Lashgari, Saeideh Momtaz, Basil Roufogalis, Amir Hossein Abdolghaffari, Amirhossein Sahebkar

First published: 13 August 2021

Cardiovascular disease (CVD) is a leading cause of morbidity and mortality worldwide. Inflammation and oxidative stress play critical roles in progression of various types of CVD. Broad pharmacological properties of ginger (the rhizome of Zingiber officinale) and its bioactive components have been reported, suggesting that they can be a therapeutic choice for clinical use. Consistent with its rich phenolic content, the anti-inflammatory and antioxidant properties of ginger have been confirmed in many studies. Ginger modifies many cellular processes and in particular was shown to have potent inhibitory effects against nuclear factor kappa B (NF-kB); signal transducer and activator of transcription; NOD-, LRR-, and pyrin domain-containing proteins; toll-like receptors; mitogen-activated protein kinase; and mammalian target of rapamycin signaling pathways. Ginger also blocks proinflammatory cytokines and the activation of the immune system. Ginger suppresses the activity of oxidative molecules such as reactive oxygen species, inducible nitric oxide synthase, superoxide dismutase, glutathione, heme oxygenase, and GSH-Px.

gingerol, and 10-dehydrogingerdione. The properties of ginger and its phenolic components, mechanism of action, biological functions, side effects, and methods for enhanced cell delivery are also discussed. Together with preclinical and clinical studies, the positive biological effects of ginger and its bioactive components in CVD support the undertaking of further in vivo and especially clinical studies.

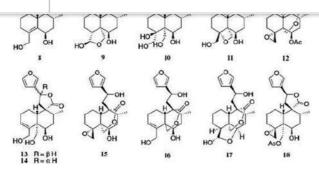


• Therapeutics studies and biological properties of Teucrium polium (Lamiaceae)

By Fatma Rahmouni, Mongi Saoudi, Tarek Rebai

First published: 01 December 2021

Teucrium polium has been used in traditional medicine as antifungal, antipyretic, antispasmodic, and antibacterial. It is consumed by many jordanians for the treatment of many diseases. The effects of this plant have been investigated in kidney, liver, and brain. Its antidiabetic, antimicrobial, antioxidant, and anticancer effects have been introduced. Polyphenolic compound, flavonoids, monoterpenes, alkanoides, and essential oils were identified. Several studies revealed that this plant has a hypoglycemic effect and can help to control blood sugar. It was reported that plants containing flavonoids and phenolics compounds exhibit a large array of biological activities like genotoxicity (chromosomal aberrations and sister chromatid exchange) and oxidative stress damage. These phytochemicals are found in herbal and vegetables plants, as well as being reliably protective against oxidative stress damage and lipid peroxidation. In addition, T. polium has secondary effects on different organs, namely liver, kidney and at high doses this plant becomes toxic. In conclusion, this review investigates many pharmacologicals properties and side effects of T. polium.

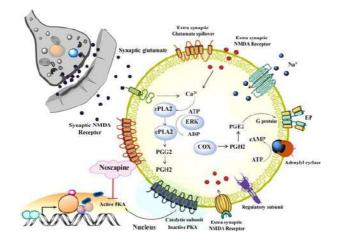


 Biological and pharmacological activities of noscapine: Focusing on its receptors and mechanisms

By Fahimeh Nourbakhsh, Vahid Reza Askari PharmD, PhD

First published: 17 September 2021

Noscapine has been mentioned as one of the effective drugs with potential therapeutic applications. With few side effects and amazing capabilities, noscapine can be considered different from other opioids-like structure compounds. Since 1930, extensive studies have been conducted in the field of pharmacological treatments from against malaria to control cough and cancer treatment. Furthermore, recent studies have shown that noscapine and some analogues, like 9-bromonoscapine, amino noscapine, and 9-nitronoscapine, can be used to treat polycystic ovaries syndrome, stroke, and other diseases. Given the numerous results presented in this field and the role of different receptors in the therapeutic effects of noscapine, we aimed to review the properties, therapeutic effects, and the role of receptors in the treatment of noscapine.





#### New Issue: Volume 68, Issue 6

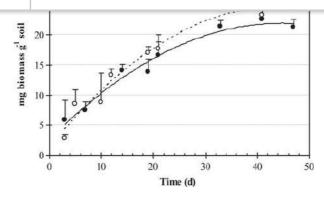
#### Issue Highlights

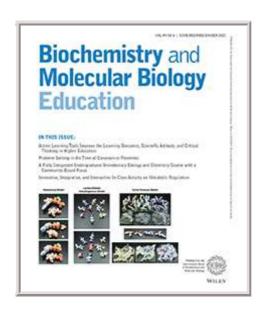
 Application of Deconica castanella ligninolytic enzymatic system in the degradation of hexachlorobenzene in soil

By Sergio Luiz Moreira Neto, Glauciane Danusa Coelho, Nara Ballaminut, Dácio Roberto Matheus, Douglas Vieira Thomaz, Katia Maria Gomes Machado

First published: 27 November 2021

Hexachlorobenzene (HCB) is a pollutant still found in the environment despite being widely banned. Considering that basidiomycetes are useful to degrade a variety of organochlorinated pollutants, we therefore report the influence of HCB on the ligninolytic enzymatic system of Deconica castanella. The inoculum was prepared with sugarcane bagasse and soybean flour and was added in soil with and without HCB (2000 mg kg soil-1), 5% emulsion containing soybean oil and Tween 20 at proportion 9:1, v:v; with 70% moisture at 25°C. Fungal biomass was quantified by widely acknowledged growth biomarker ergosterol. The extraction of the enzymatic complex was performed and laccase, Mn-dependent peroxidase (MnP), and lignin peroxidase (LiP) activities were determined. Furthermore, HCB and its metabolites were quantified by gas chromatography and chlorides by potentiometric titration. Results evidenced that HCB did not interfere in fungal growth, though the only detected enzymatic activity was laccase. MnP and Lip were not detected during D. castanella growth in soil. The peak of laccase enzymatic activity occurred in the presence of HCB. In addition, the laccase exhibited thermostability. Therefore, we hereby shed light on the role of laccase in the degradation of HCB by an efficient low-cost and environmentally safe detoxification mechanism.





New Virtual Issue on Teaching in the Time of COVID-19

#### New Issue: Volume 49, Issue 6

#### Issue Highlights

An undergraduate laboratory experiment with real-world applications:
 Utilizing templateless polymerase chain reaction and real-time polymerase chain reaction to test for SARS-CoV-2 RNA

By Julia Crane, Shallee T. Page

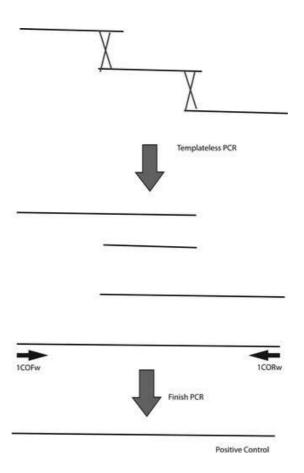
First published: 04 December 2021

Active teaching methodologies have been placed as a hope for changing education at different levels, transiting from passive lecture-centered to student-centered learning. With the health measures of social distance, the COVID-19 pandemic forced a strong shift to remote education. With the challenge of

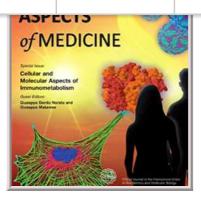
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Past Issues Translate ▼

incorporated published active-learning strategies into an online construct, with problem-based inquiry and design of inquiry research projects to serve as our core active learning tool. The gains related to students' science learning experiences and their attitudes toward science were assessed by applying questionnaires before, during, and after the course. The course counted on the participation of 83 students, most of them (60.8%) from postgraduate students. Our results show that engagement provided by active learning methods can improve performance both in hard and soft skills. Students' participation seems to be more relevant when activities require the interaction of information, prediction, and reasoning, such as open-ended questions and design of research projects. Therefore, our data show that, in pandemic, active learning tools benefit students and improve their critical thinking and their motivation and positive positioning in science.



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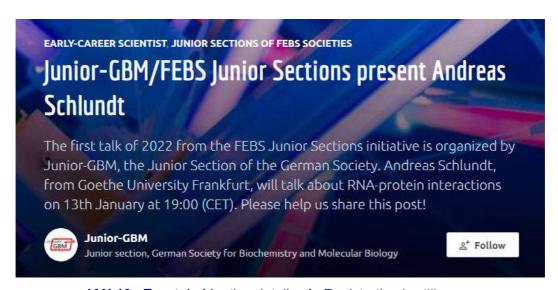


<u>Targets, pitfalls and reference materials for liquid biopsy tests in cancer diagnostics, Edward</u>

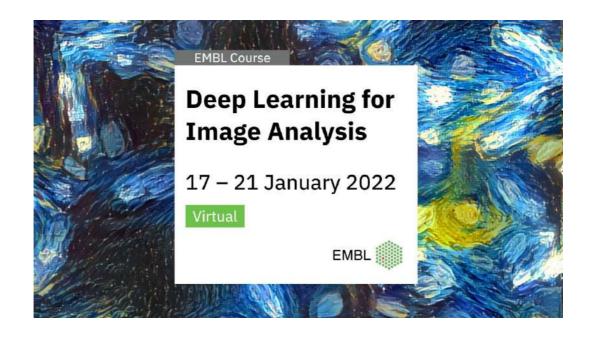
Geeurickx and An Hendrix

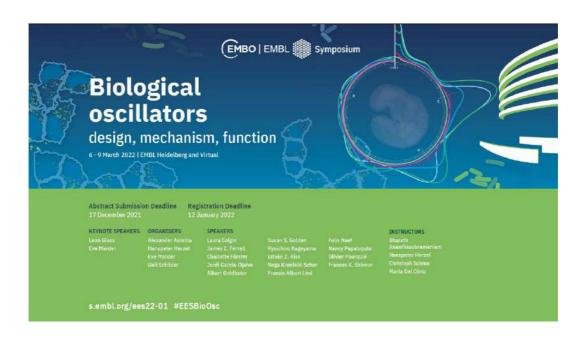
By Edward Geeurickx, An Hendrix

### **UPCOMING MEETINGS**



JAN 13: Event | Meeting details | Registration is still open





Are you interested in oscillatory phenomena and biological dynamics? Join this symposium where we will discuss common mechanisms underlying the generation of oscillations.

JAN 20: On-site Registration | FEB 27: Virtual Registration | Meeting details | Online poster



\*\*Please note that this event will now take place virtually.

How can recent developments in whole-organism physiology pave the way to novel therapies for degenerative disease?

JAN 24: Abstract Submission | FEB 21: Registration | Meeting details | Online poster



We would like to announce a webinar series on "Innovation in Undergraduate Teaching of Life Sciences".

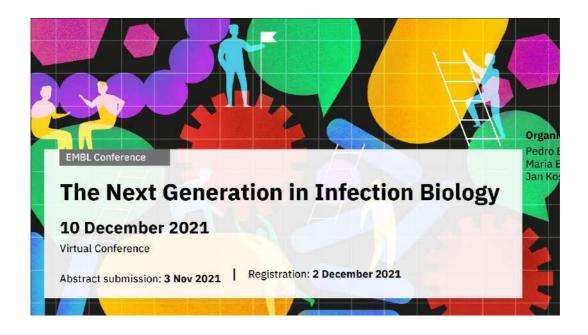
This webinar series replaces and complements the "1st Swiss Symposium on Innovation in Undergraduate Teaching of Life Sciences" (cancelled for now because of the pandemic).

With monthly online seminars in English (usually on Wednesday at 17.30 CET), it aims to create a forum and a community to help improving the quality of undergraduate education in the life sciences.

Guest Speaker: Sara Petchey (Universität Zürich, CH);
The pedagogically-trained teaching assistant: an under-recognized change agent in the improvement of university teaching.

REGISTRATION IS FREE, for LS2 members and non-members, and for the whole Seminar Series. Only registered participants will receive the zoom link of the webinar.

JAN 26 : Event 17:30 hr CET | Registration



Are you part of the next generation in Infection Biology? Then join this platform for late-stage postdoctoral scientists in the field.

JAN 26-27: Event | Online poster



Research targeted at defining conditions for healthy ageing is key to developing sustainable future societies. Moreover, regenerative medicine continuously strives to develop treatments and, as a long-term goal, cures for a variety of age-related disorders. The 2nd FEBS Workshop Ageing & Regeneration will bring together experts working at the forefront of science in both ageing research and regenerative medicine / stem cell biology.

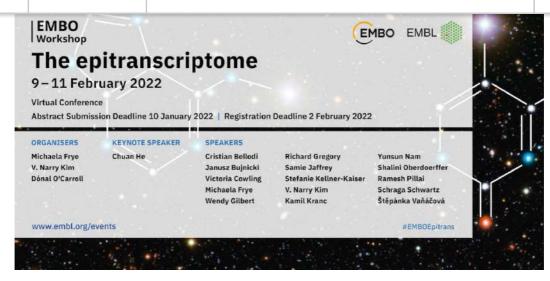
**JAN 26**: Applications and registration deadline | Online poster

\*Maximum number of participants: 100



The <u>2022 ASBMB Annual Meeting</u>, held in conjunction with Experimental Biology, will take place in person April 2–5 in Philadelphia.

JAN 27: Last-chance abstract submission deadline | FEB 7: Early registration ends



Explore all aspects of <u>the epitranscriptome</u>, from methods development to molecular mechanisms, with an emphasis on mammalian development, tissue homeostasis and disease.

FEB 2: Registration | Online poster



We're excited to invite you to the <u>47th Lorne Conference on Protein Structure and Function</u>, taking place February 6-10, 2022.

Given the ongoing uncertainty around domestic and international travel in Australia due to the COVID-19 pandemic, the Lorne Proteins 2022 conference will be offered as a **hybrid model**. We welcome delegates to the Mantra in Lorne, but for those unable to participate face-to-face, all content will be available through a virtual platform.

We are delighted to announce our 2022 Leach Lecturer <u>Professor Leann Tilley</u>, and the IUBMB Jubilee Lecture Dr. Hao Wu.

Registration still open



Now you can by applying for the IUBMB
MilliporeSigma Virtual
Meeting Fellowships with
OPEN DEADLINES to cover registration costs.

**Apply Now** 

## **ANNOUNCEMENTS**





Natalia de Miguel went from Argentina to France to learn from top parasitology researchers which helped her obtain her postdoc position in the US. She is now the Deputy Director of the Instituto Tecnologico Chascomus (INTECH) in Argentina.



**Pornngarm Dejkriengkraikul**, Thailand, came to the US and learned techniques that became very useful in her academic research career in medicine. She is now a Professor at the Faculty of Medicine, Chiang Mai University in Thailand.



Yossef Av-Gay went from Israel to the UK to carry out a genetic research that was not available in his home country. He is now a Professor at UBC Infectious Diseases, The University of British Columbia-Life Science Institute in Canada.



**Bahareh Eftekharzadeh**, Spain, came to the UK during her Ph.D. to get trained in high-resolution microscopy which led to her Postdoctoral stay at Harvard Medical School. She is a Senior Principal Scientist at Nereid Therapeutics in the US.













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