24th IUBMB-15th FAOBMB Congress

Phillip Nagley and Paul Gleeson report on the 24th International Congress of Biochemistry and Molecular Biology held in Seoul, Korea

General aspects of the Congress

The 24th IUBMB–15th FAOBMB Congress was held in Seoul, Korea, 4-8 June 2018. The meeting was held in COEX, the very well-appointed Convention and Exhibition Centre located in the Gangnam area, which is an upmarket business and residential district across the Han River from the city centre of Seoul.

Bronze sculpture of crossed wrists from the Gangnam Style dance by Psy in the eastern square of COEX in Gangnam District. The sculpture plays the song when a person stands underneath.

The theme of the Congress was Integrating Science for Bio-Health Innovation and attracted more than 3,500 registrants from 55 countries. This included about 500 people who participated in the Seoul Bio Forum.

Changing of the Guard at Deoksugung Palace.

The Congress was organised into a program of 13 plenary talks, commencing at the opening session on the afternoon of 4 June. On most days, there were five parallel sessions of symposia each morning and then twice during each afternoon.

The plenary speakers at the IUBMB–FAOBMB Congress in Seoul maintained the outstandingly high standards that one expects at an International Congress of Biochemistry and Molecular Biology. The quality of the speakers and the breadth of the topic areas that they covered are shown in the following list:

Tang Prize Lecture: Tasuku Honjo (Japan)
Cancer immunotherapy by PD-1 blockade

Osamu Hayaishi Lecture (FAOBMB): Vilhelm Bohr (USA)
Nuclear to mitochondrial DNA damage signaling in neurodegeneration and aging

FEBS Lecture: Angela Nieto (Spain)
Cell plasticity in development and disease

Chester Beatty Lecture: Feng Shao (China)
Pyroptosis: from innate immunity to cancer

Kunio Yagi Lecture (FAOBMB): Toren Finkel (USA)
Mitochondria, metabolism and aging

IUBMB Lecture: V Narry Kim (Korea)
MicroRNA regulation

FAOBMB Lecture: Jin-Soo Kim (Korea)
CRISPR genome editing

Takashi Murachi Memorial Lecture: Brenda Schulman (Germany)
Posing a contortionist E3 ligase (anaphase-promoting complex/cyclosome) for stepwise regulation of cell division

FAOBMB Research Excellence Award Lecture: Nieng Yan (China/USA)
How is electrical signal generated? Structural and mechanistic investigations of Na_v channels

Biochemistry Society International Award Lecture: Job Dekker (USA)
Folding, unfolding and refolding of genomes

EC Slater Lecture: Craig Thompson (USA)
Exploiting the metabolic dependencies of cancer cells

Kunio Yagi Lecture (IUBMB): Aaron Ciechanover (Israel)
The ubiquitin proteolytic system from basic mechanisms through human diseases and onto drug development

Osamu Hayaishi Lecture (IUBMB): John Hardy (UK)
Genomic analysis of late onset neurodegenerative diseases

There were many other top quality international speakers in the 47 symposia of this Congress, which

collectively covered various topics in biochemistry and molecular biology, with applications to biotechnology and medicine.

FAOBMB Special Lecture Symposium

In the afternoon of 5 June, a special session was held that included FAOBMB Lectures held only at the triennial Congress. The Ramachandran Lecture, supported by the Society of Biological Chemists (India), was delivered by Professor Manju Bansal, who spoke on the role of DNA structural variability in promoter function. Professor Bansal treasured that she was one of the last students of the famous GN Ramachandran.

This session also included the lectures given by the two winners (male and female) of the FAOBMB Young Scientist Award for 2018. Dr Varodom Charoensawan (Thailand) spoke about his systems biology approaches to investigate the epigenetic landscape of nucleosome and transcription factors. Dr Tatiana Soares da Costa (Australia) described her recent work on counteracting drug resistance in bacteria by the multi-targeted inhibition of an essential bacterial enzyme, dihydrodipicolinate synthase (DHDPS) that is involved in the biosynthesis of both the cell wall and lysine.

FAOBMB Executive Committee. From left: Gracia Fe B Yu (Education Chair), Piamsook Pongsawasdi (Treasurer), Kiyoshi Fukui (Past-President), Zengyi Chang (President), Sheila Nathan (Secretary General) and Paul Gleeson (Fellowships Chair).

Education Symposia and other events

The Congress featured two Workshops on Education, each embedded in the program as a full Symposium. At the first IUBMB Education Workshop, three speakers made presentations on biochemistry teaching and learning in their respective countries: Joon Kim (Korea), Gracia Fe Yu (Philippines) and Janet Macaulay (Australia). This was followed by general discussion involving breakout groups. The second IUBMB Education Workshop, organised by local Korean educators, dealt with education and training in technical areas including the following: protein structure prediction and refinement (Chaok Seok); network-based analysis of omics data (Sun Kim); deep learning for bioinformatics and health informatics (Sungroh Yoon); and bioinformatics for microbiome studies (Byung-Yong Kim).

Nieng Yan receives the FAOBMB Award for Research Excellence. She is the first female scientist to receive this award.

There was a further Symposium entitled 'Challenges and opportunities in translation of academic research'. Presenters dealt with challenges and opportunities in the commercialisation of academic science (Juan Carlos Lopez, Mexico) and a *Nature Biotechnology* editor's view on the academia-industry interface (Andrew Marshall, USA).

Another specialised Symposium, sponsored by the Korean Center for Gendered Innovations in Science and Technology Research (GISTeR), was entitled 'Gendered innovations in biomedical research and publication'. This session dealt with various aspects of gender and how it may be a factor in biomedical research at cellular, organismal and broader levels.

Lunchtime symposia took place each day presented by commercial organisations, covering topics on technical and publication matters.

FAOBMB Special Lecture Symposium, from left: Sheila Nathan (Secretary General), Varodom Charoensawan (Young Scientist Award), Manju Bansal (Ramachandran Lecturer), Tatiana Soares da Costa (Young Scientist Award) and Zengyi Chang (President).

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Gardens of the Bongeunsa Temple in Seoul.

The Seoul Bio Forum was held on the afternoon of 6 June, as a science outreach session for the public under the theme Super Human, the Coming Future. This was organised by Professor Hyunsook Lee (Seoul National University), together with the moderator, Yang-Gu Kang, a science reporter. Three scientists, Dr Sid Chung (Korea University), Dr Daeshik Kim (KAIST) and Dr Kyu-Jin Cho (Seoul National University), presented their work in TED-style format. The subsequent Q&A and panel discussion included the philosopher Dr Jaein Kim. The audience was pre-registered and at capacity of 500 people. Some were undergraduate and postgraduate students, but most were non-scientists interested in public talks on science. The Forum was supported by KAOS foundation, a non-profit foundation for science outreach in Korea.

Poster sessions

Poster sessions, timetabled on each of the three middle days of the Congress, were very active, successful events. There were about 900 posters presented in a dedicated section of the Exhibition Hall, adjacent to the Trade Display. The posters were organised under a total of 14 themes and topic areas to help showcase the wide breadth of science being presented.

Young Scientist Program

The main congress was preceded by a Young Scientist Program, comprising 45 selected young scientists, of whom seven were from Korea and 38 from overseas; all of the latter received assistance to participate in the form of international Travel Fellowships. There was also a novel class of participants, YSP observers (31 attended), many of whom were unsuccessful applicants for YSP Fellowships but for whom funds were provided to attend the YSP as such. With 18 faculty (senior scientists) plus six student helpers, there was a total of 100 at the YSP event. The YSP was held at Yonsei University, Seoul, 2–4 June.

Social events and official functions

The great strength of the Congress was the wonderful opportunity to meet old friends and new colleagues in a relaxed atmosphere, at the same time being able to appreciate the outstanding science presentations. The location of the Congress in the Gangnam area provided lots of dining opportunities for a quick lunch in the extensive COEX mall below the Convention Centre or a relaxed dinner in many of the Korean restaurants in the adjoining streets. The very peaceful Bongeunsa Temple adjacent to the COEX complex provided opportunity for quiet reflection. Participants enjoyed the sights and sounds of Seoul, including the several palaces at various locations around the city area, very accessible by the extensive Metro system.

One highlight of the social program was the Congress Gala Dinner, held at the Grand InterContinental Parnas Hotel, with excellent dining and entertaining musical presentations.

The Closing Ceremony included presentations on upcoming IUBMB events: 27th FAOBMB Conference in Kuala Lumpur, Malaysia, 19–22 August 2019 [supported by IUBMB] and the 25th IUBMB Congress in Lisbon, Portugal, 30 June–5 July 2021. The award of the 26th IUBMB-17th FAOBMB Congress to Melbourne, Australia, in 2024 was announced.

IUBMB General Assembly

The 24th Ordinary General Assembly of IUBMB took place on 6 June. Phillip and Paul were appointed by the Australian Academy of Science as Adhering Body to IUBMB, on the recommendation of ASBMB Council, to represent Australia at this formal triennial business meeting of IUBMB.

From left: Angela Nieto (FEBS Lecturer), Phillip Nagley (Australia) and Sheila Nathan (Malaysia).

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President of IUBMB Congress 2018, Uhtaek Oh.

IUBMB President, Andrew Wang.

IUBMB President Elect, Alexandra Newton.

IUBMB Incoming General Secretary, Jim Davie.

Promotion of the next IUBMB-supported Conference to be held in Kuala Lumpur, Malaysia in 2019. Anthony Ho Siong Hock (left) and Yang-Mooi Lim.

IUBMB Past-President Joan Guinovart (left) with Juan Carlos Slebe (Chile).

Miguel Castanho (Portugal) and Ilona Concha-Grabinger (Chile).

IUBMB General Secretary, Mike Walsh, with wife, Mary.

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FAOBMB dinner. Clockwise from centre front: Yang-Mooi Lim (Malaysia), Phillip Nagley (Australia), Terry Piva (Australia), Tuangporn Suthiphongchai (Thailand), Yau-Huei Wei (Taipei, China), M Wahid Akhtar (Pakistan), Robyn Freedman (Australia) and Piamsook Pongsawasdi (Thailand).

Panellists at the Seoul Bio Forum. From left: Daeshik Lim, Yang-Gu Kang (moderator and co-organiser), Hyunsook Lee (co-organiser), Kyu-Jin Cho, Jaein Kim (philosopher) and Sid Seok Chung.

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A Meeting of Young Scientists in the Harmonious City of Seoul

Australian delegates at the YSP. Clockwise from top left: Lai Yue Chan (University of Queensland), Tatiana Soares da Costa (La Trobe University), Anna Konopka (Macquarie University), Hamideh Shahheydari (Macquarie University), Belal Shohayeb (University of Queensland), Neil Robertson (UNSW) and Ngee Kiat Chua (UNSW).

We are each very grateful to have been awarded a Young Scientist Program (YSP) Fellowship to attend the YSP that preceded the 24th IUBMB and 15th FAOBMB Congress in Seoul, South Korea. The YSP was organised by a superb local team of 15 and was held at the prestigious Yonsei University. Notably, the YSP attracted early career researchers from 20 different countries and, without a doubt, enhanced the experience for the Congress that followed. A total of 45 YSP Fellowship winners were announced, of which seven were from four Australian universities. During the YSP, each participant was given a chance to present their work as an oral and a poster presentation, increasing their visibility throughout the two days. There were six themes for the presentations that covered a vast range of disciplines.

At the end of the first day, the organisers hosted an incredible buffet dinner consisting of Korean dishes and international cuisine for all attendees. It was convenient that the organisers seated participants at tables based on our research theme. This provided an opportunity to interact with others of similar research interests. Furthermore, participants were paired and stayed with a roommate in the provided guesthouse at Yonsei Sangnam Institute of Management during the YSP, helping us to build closer relationships. We were also graced by the presence of the famous Korean singer, Yoon Jong-shin, who happened to be performing at a festival within the university, just five minutes away from our guesthouse. Being in such a comfortable environment helped to build a tight community.

Across the two days, we were fortunate enough to have four incredible invited speakers. Professor Andrew Wang, IUBMB President-Elect, spoke about basic and translational research. Professor Jin-Soo Kim from Seoul National University is internationally recognised in the field of genome editing. Assistant Professor Hyun Woo Park gave us his fresh perspective on starting his own laboratory in South Korea, after recently returning from his postdoctoral experience at the University of California San Diego. Dr Eun-Mi Hur from Calgene in the US presented on her experience working in the immunotherapy pharmaceutical industry. These topics were very engaging as they are relevant to the young scientists who wish to advance their career in science.

All YSP participants gave highly motivational oral presentations and their experience showed through their ability to engage with the audience. The poster sessions established strong networks, which we would not normally be able to easily acquire in big scientific meetings. It was a proud moment when two representatives from Australia, Tatiana Soares da Costa (La Trobe University) and Ngee Kiat (Jake) Chua (University of New South Wales), were awarded prizes for best oral and poster presentations in their respective themes. Throughout the YSP, aside from networking efforts between YSP Fellowship winners, many were able to interact with senior scientists who were attending as the organising committee and/or chairs for the sessions. The continuous conversations between the diverse attendees (both culturally and by career stages) were beneficial for young scientists in terms of increasing visibility, getting new inspiration and making the most out of their time at the YSP. The YSP nurtured the development of all attendees and allowed many genuine connections to be established.

YSP participants visit the Gyeongbokgung Palace in Seoul.

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