IUPAB News Number 66

September, 4th, 2017

In this issue:

Greetings from the President

Dear Friends from Biophysics,
First, I would like to thank you for the confidence you have placed in me. It is truly an honor to serve IUPAB in the next 3 years as President of this prestigious Institution, that was Presided by recognized Scientists like Feodor Lynen (Nobel Prize 1964) and Kurt Wutrich (Nobel Prize 2002), that make my responsibility very high.
Secondly, I would like to thank the years of learning that I had with brilliant people in the IUPAB Executive (Cris dos Remedios, Roberts Gordon, Patrick Cozzone and Zihe Rao). I had 2 terms as member of IUPAB Council and 3 years as President-Elect who brought me the knowledge to be able to act at in the next 3 years as President. During this period, I have made many friends and it has been an incredible experience.
For those who not know me well, I am Professor at Federal University and I work in the field of ion transporters in renal and respiratory physiology, cell therapy and gene therapy in animal models of lung and renal diseases and the results of our work is has already been used in humans in a clinical trial. I was President of Brazilian Biophysical Society, and we helped to create the Latin American Federation of Biophysical Societies (LAFeBS) and The Latin American Postgraduate Program of Biophysics (POSLATAM). Currently I am Vice-President of Brazilian National Council for Scientific and Technological Development (CNPq), the Federal Foundation for research support in Brazil.
What I learned most in those years is that we do nothing alone and everything we have achieved so far has been the result of collective effort.
This thought I want to bring to the next 3 years of my term as President of IUPAB. I would like to have a greater participation of IUPAB adhering bodies and Council who will be called to have a real participation in IUPAB initiatives for the advancement of biophysics.
I really hope that with an international collective effort through IUPAB, we can make biophysics a real contribution to the development of science for a more just, equal and fraternal world.
I count on you all in this journey.
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Best wishes,
Marcelo Morales

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Presentation of IUPAB News, by the Secretary General

Secretary General, Juan C. Gómez-Fernández, Spain,

.This new number of IUPAB News is published with the aim of informing the biophysical community about news produced by IUPAB and other news interesting for biophysicists. In this case we are publishing the composition of the Executive Committee and the Council of IUPAB, after the elections held during the IUPAB Congress (Edinburgh, July 18th, 2017). Our aspiration and hope is that you will distribute this News to all your members.

We will love to have the coilaboration of all the biophisicists linked to our Union for this enterprise. In particular we invite to all the Adhering Bodies that publish their own Bulletin or Journal to offer us the reproduction of articles and news. You may do so by contacting our Secretary: jcgomez@um.es

New Executive Committee of IUPAB

President: Dr. Marcelo Morales, Brasil, mmorales@biof.ufrj.br
Past President: Prof. Dr. Zihe Rao, China, raozh@mail.tsinghua.edu.cn
President Elect: Prof. Dr. Manuel Prieto, Portugal, manuel.prieto@tecnico.ulisboa.pt
Secretary General, Prof. Dr. Juan C. Gómez-Fernández, Spain, jcgomez@um.es
Treasurer: Prof. Dr. John Baenziger, Canada, John.Baenziger@uottawa.ca

New Council of IUPAB

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The new Council is depicted aat the end of he General Assembly in Edinburgh

Report on the IUPAB/EBSA congress, Edinburgh, July 2017

Anthony Watts (Co-Chair; President EBSA; Chair BBS, Oxford, UK)

Both IUPAB and EBSA held their General Assemblies during the congress and, importantly, the beautiful city of Kyoto in Japan was selected as the venue for the 2023 IUPAB congress – congratulations to Professor Noji and his colleagues for this success.

Edinburgh venue

Edinburgh, Scotland was the venue for the 19th IUPAB/10th EBSA congress in July 2017. Beijing (2011) and Brisbane (2013) were previous IUPAB congress locations, and Lisbon (2013) and Dresden (2015) were venues for previous EBSA (European Biophysical Societies Association) congresses, and it was a real triumph to bring both these organisations together in Edinburgh – IUPAB and EBSA congresses coincide every 6 years. The national hosts were the British Biophysical Society (BBS) and the Biological Physics sub-group of the Institute of Physics (IoP), London.

Typical cool Scottish weather and a Scottish piper greeted just over 1300 registered participants from 52 nations to the congress on its opening day – it would have been 53 but two Iranian scientists could not surmount the logistic difficulties of visa and monetary requirements, despite the student having a potential IUPAB bursary waiting for her on arrival. Chris Dobson (Cambridge, UK) gave a Public Engagement Science Lecture entitled 'Alzheimer's: A 21st Century Plague', sponsored by the Alzheimer's Society (Scottish Division) and attended by over 200 members of the public including sufferers, and a significant number of registered participants – about 1200 people attended. Following this, the Lord Provost of Edinburgh and Professor Andrew Miller (CBE, RSE) welcomed congress participants to Edinburgh on behalf of the City and the Royal Society of Edinburgh. Opening remarks were also made by the Presidents of IUPAB and EBSA (Professors Rao and Grübmuller, respectively) as well as chairs of the congress, Andrew Turberfield and Tony Watts.

Opening and closing plenary lectures were presented by Venki Ramakrishnan and Bob Lefkowitz respectively, both Nobel Laureates, and their lectures were sponsored by IUPAB as the Ramachandran and Katchalski lectures, again respectively. The scientific sessions were suggested by an advisory team from IUPAB Executive Council, EBSA, BBS and the IoP sub-group. All 35 sessions had a UK and a non-UK chair and their suggestions, with input that had been requested from 80 national adherent biophysical societies, were canvassed to establish a truly exceptional quality programme of (230) invited and contributed talks. Being co-hosted by the British Biophysical Society (at 67 years old, one of the first societies) and the Institute of Physics sub-group (much more recently established), the mix of sessions covered very contemporary areas such as Quantum biology, Physics of Cancer and "Why disorder matters", to more traditional areas, including computational biophysics and membrane biophysics. One universal observation was that the whole congress was exceptionally well attended for the full 5 days - a testament to the attractiveness of the scientific programme.

Some 1095 posters were submitted to the congress which made selection of the 115 short presentations, to join the 115 invited speakers talks, a significant task – speakers in those sessions were from just over 40 nations and some 36% were from female scientists, including two of the seven plenary speakers – Petra Schwille (Germany) gave the IUPAB Engstrom plenary lecture, with other plenary lectures from Sheena Radford (UK), Sunney Xie (USA) the Bei lecture (kindly supported by the Chinese Biophysical Society), Helmut Grübmuller (Germany) and Terry Hwa (USA). Additionally, Philipp Kukura (UK) and Jean-Marie Ruysschaert (Belgium) gave the EBSA Young investigator and Avanti-EBSA Lectures, respectively.

Some 36% of the participants were students, with more than a third (160) of those receiving bursaries from IUPAB (60), EBSA (60), British Biophysical Society, Wellcome Trust, Royal Society of Chemistry and other sponsors – the immense efforts in selecting and paying the awardees is due to the hard working Treasurers of IUPAB (Patrick Cozzone aided by Louise Mattheson) and EBSA (Tony Wilkinson and a panel for the EBSA committee).

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ngress – congratulations to Professor Noji and his colleagues for this success. Seven satellite meetings and workshops also took place either before or after the congress, all of which were supported by EBSA. "Teaching Biophysics" and "3Rs and Biophysics" workshops took place within the congress, as did a number of technical and other related demonstrations. The social events at the congress included a welcome reception, a very lively whiskey and beer tasting, and an "all-inclusive and open to all participants" congress dinner. The dinner was followed by a ceilidh with a twist - after a traditional initial introduction to each dance routine, the music became more "pop" orientated and added a special energy to the dancing, which was exceptionally popular with young and not-so young. Many people are known to have taken trips to the Highlands, various distilleries, golf courses and city tours before and after the congress – Edinburgh proved to be a very popular destination.

Bob Lefkowitz's closing lecture was followed by poster prize announcements (one for each of the 35 sessions, and an additional 12 Biophysical Society bursaries presented by Ro Kampman), a closing ceremony in which Jesus Perez-Gill (Vice-President ESAB and chair of the 12th EBSA congress, Madrid 2019) and Marcelo Morales (President IUPAB; 20th IUPAB congress in Rio de Janeiro, 2020) invited participants to the next congresses respectively. Closing remarks were also given by Professor Rao (Past-President, IUPAB), and the chairs of the Edinburgh congress Andrew Turberfield and Tony Watts, who both thanked the small army of helpers and congress management team for their immense efforts, in particular Claire Garland and Jon Roe (IoP) and Claudia Cassidy (Oxford), as well as the cluded presentation of several gifts, including bottles of Scotch whiskey, were followed by a BBS and IoP committee members for their continued support. These formalities, which included presentation of several gifts, including bottles of Scotch whiskey, were followed by a spectacular performance of "Beat the Retreat" from an expert piper and drummers. Everyone looks forward to the increasing development of multi-, cross- and interdisciplinary science that is biophysics, and is witnessed at congresses such as this in Edinburgh. It is through organizations such as IUPAB and EBSA that the area will grow and get the recognition and status of more traditional sciences. Biophysics is an increasing and ever-more attractive field of study, especially to young open-minded scientists who are keen to think across traditional boundaries. The far reaching implications of the work extends from medicine and human health care, to ecological and environmental sciences, with biotechnology and nanoscience enabling technologies.

Many of the IUPAB Travel Bursary Awardees joined some members of the IUPAB Executive Committee, including (left to right: Juan Carmelo Gómez Fermández, Secretary General; Cris dos Remedios, past Secretary General; Manuel Prieto, President-elect; John Baezinger, Treasurer; Gordon Roberts, past-President; Patrick Cozzone, past Treasurer)

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Anthony Watts (Co-Chair; President EBSA; Chair BBS, Oxford, UK)

European Science after Brexit: Science as a cohesive political tool

The result of the Brexit referendum – announced on the 23rd of June 2016 – was an unpleasant surprise for many inside and outside the UK. Shortly after the result was declared, an editorial was released by the journal *Nature* stating that "*Scientists – just like everybody else – have little idea what will happen now that the United Kingdom has voted to exit the European Union*". Much has been discussed since then, but in reality little has advanced, and almost one year on, we still have no idea. Indeed, up until the 29th of March 2017 Theresa May's government had not officially communicated with the European Union about Brexit, almost coinciding – as fate would have it – with celebrations commemorating the 60th anniversary of the 1957 founding Treaty of Rome.

The impact of Brexit on a EU without the UK is unpredictable, and few people are willing to take the risk of anticipating possible political, social and, in particular, scientific consequences. What is clear, however, is a widespread fear about a tough economic adjustment for both, the EU and the UK. Regarding the impact of Brexit on the Spanish economy, the newspaper *El País* recently ran an article (March 11th, 2017) referencing an official document prepared by the Permanent Representation of Spain to the EU Commission on Brexit, which is headed by the vice-president of the government, stating that "*The Spanish economy will lose between 2 – 4 points in growth, exports will fall by about 500 million annually and British abandonment will force Spain to contribute 888 million more to Europe*". Predictions indicate tourism – a key sector for the Spanish economy – will be most affected, particularly in the regions of Andalucía, Baleares, Canarias and Valencia.

The science and technology sector, in comparison, does not appear to be seriously affected in Spain, due to its small weighting in the overall economy and industrial fabric of the country. However, it could be damaged at a British and European level on two fronts: Firstly, for the significant contribution that the UK makes to the European budget. And secondly, for the British scientific leadership and frequent participation in European programmes, either as a host country for scientists (especially the young) or as a partner in scientific networks and integrated projects, along with the strong capacity to influence decision-making in Brussels and to define future political strategies.

The alarms concerning the possible implications of Brexit started to sound before the result of the referendum was known, particularly among scientists working in the UK. In the same editorial of *Nature* cited above it was pointed out that "*Researchers are already mobilizing to lobby for the United Kingdom to remain a participant in EU science programmes (…) But it's unclear whether the United Kingdom will still be attractive to talented researchers*". These fears are well founded. If the UK imposes restrictions on the free movement of people in the wake of Brexit, it is probable that Britain will appear less attractive to the European scientific community and, in turn, the EU may limit the participation of the UK in its research and innovation programmes. A similar scenario happened in 2014, when the access of Swiss researchers to the H2020 programme was restricted in the H2020 programme after the positive national vote to reduce immigration.

The Schengen agreement, which allows the free movement of people across European borders, is one of the union's greatest achievements, and a symbolic indicator of European humanism and liberal tradition. Likewise, there have also been tangible successes with the creation of the Euro and the exchange of university students through the Erasmus programme. These three achievements constitute signs of identity, as if they were milestones forged through hard work in the invariably challenging route towards the construction of a common Europe. Brexit, on the contrary, signifies a point of inflection in this progressive collaboration to achieve European identity, an uncer-

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European Commission

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tain and unexpected interruption in the dream of continental unification.

There is no doubt that Brexit is a product of Euroscepticism arising in the last few years, coinciding with the economic recession beginning in 2008. The decision on Brexit also reflects the social wounds generated by the austerity policies imposed during clumsy crisis management by European leaders. The solutions that are now being considered contemplate the development of a European Union at different rates, with the obvious risk of deepening the social divide between regions and countries. The feeling of national inequality hinders the aspiration of constructing an authentic European Union – with a unique and powerful voice, capable of establishing itself alongside the US and China.

In addition to the free movement of people, the single currency, and the exchange of university students previously mentioned, another essential constructive European milestone – less known in the public consciousness -– is the framework programme for research and innovation, a powerful tool for the promotion and support of scientific research and the development of technology in the EU. The Horizon 2020 programme, currently in effect, was preceded by seven framework programmes, of which the first was launched in 1984. Discussions in the European parliament have now started as to the next framework programme, with a tentative investment of up to 100 billion euros, which will be distributed between 2020 and 2026.

One of the primary objectives of this programme is to promote collaborative investigation throughout Europe and with other partner countries, contributing to the mobility of scientists and business, with the goal of European cohesion in mind. Consequently, the sciences have acquired an extra value, which is more political than scientific in nature, and emerge as a key instrument for the integration of countries into a single Europe. In other words, apart from their indisputable intrinsic value in promoting continental scientific and technical development, the framework programmes also foster high-level professional networking, and hence, trans-national integration of sectors driving the European economy.

We should be conscious, however, that science and technology do not level the playing field as other innovations have done in the past, but instead accentuate the unequal distribution of wealth among social classes as well as nations. It was in the middle of the last century when forward-thinking countries imposed on the rest of the world a model for linear and unidirectional economic progress, based on the financing of science and technological development. The social and environmental consequences of this developmental model remain evident. In fact, the proposal to facilitate the growth of Europe at different rates responds to the economic discrepancies between EU nations, which itself reflects disparities in science and technology development.

Because of this, the European framework programmes must urgently exploit their maximum potential, not only scientifically but also politically. And now, following Brexit, more than ever. The European research and innovation framework programme must today be understood not only as an element of economic progression but also as a cohesive political tool with the potential to combat the dangers of uneven EU development. In this sense, the EU should resist the understandable impulse to break ties with the UK and slam close the door, but to find ways to incorporate the British scientific community into the European integration project. If the Europe of 27 succeeds in achieving the long-awaited goal of political unification, it is not unreasonable to assume that the UK will end up knocking at the door once again.

Experience tells us that groups advance faster than isolated individuals. Nature is plagued with examples, including common social insects (bees, ants, etc.). The evolution of the human spe-

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evolution of the human species itself would not have occurred if not for the communal character of man. In fact, the so called "*collective intelligence*" or "*symbiotic intelligence*", resulting from collaboration and competition between individuals that make up a particular group or population, allows for an improved intellectual capacity by exceeding the knowledge of each isolated element. George Por, whose pioneering research in the 1980's into the development of knowledge networks and the construction of virtual communities involved in self-organisation, defines collective intelligence as *"The capacity of human communities to evolve towards higher order complexity and harmony, through such innovation mechanisms as differentiation and integration, competition and collaboration."*

It can be difficult to admit that the driving force of collective intelligence is "*individual selfishness*", identified by the Scotsman Adam Smith – the father of modern economics – in his seminal work *The Wealth of Nations* (1776): "*It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages*". The Nobel laureate Mario Vargas Llosa recently referred to the work of Smith in the following terms: "*In truth, he was the first to explain to human beings how and why the system operates which lead us to leave the caves and progress in all fields – save from the moral – to conquer the content of material and reach for the stars. A simple and yet complex system, founded on liberty, which transforms selfishness into a social virtue*" (*El País*, March 19th, 2017).

In spite of its many oscillations, the history and social evolution of man is a result of the collective intelligence of a species in which individual selfishness – understood as a social virtue – constitutes the driving force behind the whole, and technoscience -– understood in its dual economic and political role – is one of the key levers of action. In this continuous historical development, the construction of the United States of Europe should be no exception.

Miguel A. De la Rosa
Former FEBS Chairman

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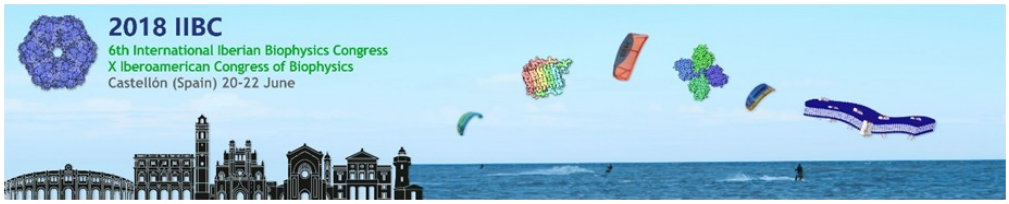

20-22 June, 2018, Castellón, Spain

The Spanish Biophysical Society organize the 6th International Iberian Biophysics Congress and X Iberoamerican Congress of Biophysics

On behalf of the Organizing Committee, it is my pleasure to invite you to attend the **6th International Iberian Biophysics Congress and X Iberoamerican Congress of Biophysics**. This international conference has a tradition of almost two decades. The 2018 edition is organized under the auspices of the Spanish Biophysical Society (SBE), the Portuguese Biophysical Society (SPBf) and the Latin American Federation of Biophysical Societies (LAFeBS).

IIBC-2018 will be held in Castellón (Spain) on 20-22 June 2018, in the campus facilities of Universitat Jaume I. (http://www.uji.es),conveniently located at walking distance from several hotels and the railway station (connected to the nearest international airport of Valencia).

The Universitat Jaume I (UJI) is the public university in the north of the Valencian Community, a region on the European Mediterranean coast located between the cities of Valencia and Barcelona. Established in 1991, the UJI has positioned itself as a university of proximity characterised by its personal attention, smooth-running management procedures and the high levels of participation of its members in university life, due, among other things, to its convenient size, with about 15,000 students, and its integrated, modern, functional and sustainable campus.

IIBC-2018 scientific program includes several *Plenary Lectures*, as well as *Parallel Symposia* on selected topics covering the main research areas of Biophysics. Symposia will host invited talks and also short communications selected from submitted abstracts with preference for young researchers. Following the tradition of previous Meetings, a *New and Notable Workshop* will take place in the morning of the first day. The organizers are committed to make the *Poster Sessions* a place for networking and the occasion of fruitful and lively discussions in a relaxed atmosphere. Reduced registration fees will apply to participants who are SBE members. Moreover, a number of grants sponsored by SBE and SPBf will be available to encourage young researchers' participation. Looking forward to seeing you in Castellón.

Vicente Aguilella
Chair of the Organizing Committee
More information soon in http://www.sbe2018.com

Asian Biophysics Association Symposium

in conjunction with the Australian Society for Biophysics Meeting

Melbourne Dec 2-6, 2018

The Asian Biophysics Association (ABA) was formed in 2006 to promote biophysics research and collaboration in the Asia-Pacific region. It grew out of the successful East Asian Biophysics Symposium (EABS) with original member biophysical societies from China, Hong Kong, Japan, Korea, and Taiwan. In 2006, Australia and India joined and the Asian Biophysics Association was formed. The current President of the ABA is Professor Xiyun Yan from the Institute of Biophysics, Chinese Academy of Sciences.

Every 2-3 years, one of the member countries hosts a major symposium that brings together biophysical researchers from the region and beyond. The next meeting will be held in conjunction with the Australian Society for Biophysics in Melbourne, Australia on December 2nd – 6th, 2018.

The symposium themes will include Biophysics and Medicine; Membrane Biophysics; Structural Biology; Nanobiophysics; Bioinformatics; Neuroscience; Imaging and Super-resolution Microscopy.

There will be a particular focus on Early Career Researchers, with dedicated ECR sessions and ample opportunities for poster presentations and short talks.

We warmly welcome Biophysicists and IUPAB members from around the world to join us in Melbourne in 2018 for stimulating scientific sessions and an opportunity to network and socialise with colleagues. Please see the ABA2018 website for further details.

ABA2018 Executive Committee

Renae Ryan (University of Sydney)

Danny Hatters (University of Melbourne)

Margie Sunde (University of Sydney)

Marc Kvansakul (La Trobe University)

Ray Norton (Monash University)

The Asian Biophysics Association (ABA) was formed in 2006 to promote biophysics research and collaboration in the Asia-Pacific region.

Melbourne: skyline

Activities of the INTERNATIONAL UNION for PURE and APPLIED BIOPHYSICS
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The International Union for Pure and Applied Biophysics (IUPAB) was formed in Stockholm in 1961 as the International Organisation for Pure and Applied Biophysics. It was established as the International Union in 1966, when it became a member of the ICSU (International Council for Science) family. Affiliated to it are the national adhering bodies of 61 countries. Its function is to support research and teaching in biophysics. Its principal regular activity is the triennial International Congresses and General Assemblies.

IUPAB
CONNECTING THE WORLD OF BIOPHYSICS

Important Announcement
Sponsorship Policy of IUPAB

As from now on there will be a change in the sponsorship policy with respect to that posted in: http://iupab.org/about/sponsorship/
So that point 8, will read:

Applications for financial support of Conferences, Schools and other Events must be submitted on the appropriate forms. Please use "Forms" on the index bar and fill in the "Funding Application Form". Completed applications should be returned to the Secretary General at least before June 30th of the year prior to the event if it is scheduled for the first semester of the following year or before the 31st of December if it will take place during the second semester.
If organizers of meetings are seeking only the approval of IUPAB, including the use of the IUPAB logo, but not requesting financial support, applications may be submitted to the Secretary General at any time and will be considered by the Executive Committee by correspondence.

Note from the Editor:
IUPAB News will be happy to reproduce articles previously published by bulletins or other publications of any of our Adhering Bodies. We will be also happy to consider articles written by biophysicists on scientific or other subjects of broad interest for the biophysic community. You may contact the Secreaty General with respect to this matter.

IUPAB is not responsible of the opinions expressed in the articles here included, nor necessary share these opinions.