



INTERNATIONAL UNION for PURE and APPLIED
BIOPHYSICS

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Activities of the INTERNATIONAL UNION for PURE and APPLIED BIOPHYSICS
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Editor's Note

January, 2017

It is with a mixture of satisfaction, pleasure and regret that I am putting together this issue of the Annual *NEWS*. This will be the last issue that I will edit.

As you might know, our Secretary-General has indicated he will retire from that office at the 19th IBC in Edinburgh. Thus my role as Executive Assistant to the Secretary-General will also be taken up by someone else.

During the year IUPAB was able to fund 9 Workshops and Summer Schools, from 14 applications received. The reports on those held earlier in the year have been posted already on our website, with only two of the last included in this edition of the *NEWS*. You will find them beginning on **Page 7**.

There is our regular feature on **Page 11** on *Women in Science*, this time our subject is Professor Jane Dyson, who was born and educated in Australia and has lived and worked for many years in the United States.

Professor Anthony Watts and his team are planning what seems sure to be a Congress excellent in every way in Edinburgh. You will find all the details on the IUPAB website under *Conferences*.

As part of the Congress, as in former years, IUPAB will also be providing funds to assist Young Scientists to attend, and the details for these awards are also on both our own website and that of the 19th IBC. This process and the contact with the applicants has been one of the most rewarding aspects of my role.

It has been a great pleasure to have corresponded with so many of the Councillors and the representatives of our Adhering Bodies

over the years since 2009, and indeed to have been able to meet so many at the IBCs in both Beijing and in Brisbane.

Again, I do hope to see many of you in Edinburgh in July, 2017. Please do come and say Hello/Farewell if you have time during the Congress.

With my best wishes for the future,

Louise Matheson

Editor

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Report from the Secretary-General



2016 Biophysics Schools

The funding of these schools is the major mechanism by which IUPAB distributes the income from its Adhering Bodies. In the two years between the triennial congresses, IUPAB provides grants up to \$10,000 to support biophysics schools. The guiding principle for the distribution of these funds is that they support students and early career researchers from under-developed countries. Applicants can be international, national or regional biophysics-based societies but all successful applicants must provide detailed documentation on how the funding is used. The Executive mandates that all of its funds be directed to students rather than to defray the costs of invited speakers, conference venue hire, and other expenses. It is important that all funded students sign off on the funding received.

In previous years, we managed to fund all, or nearly all applicants, usually 5-6 per year. 2016 was different. We received 14 applications. All were assessed by the 17 members of Council who decided to fund nine of the applicants.

Application will open in mid 2017 for the 2018 round of funding.

2017 IUPAB CONGRESS in EDINBURGH

The 19TH IUPAB International Congress will be held at the Edinburgh International Conference Centre, Edinburgh. This is a joint meeting with the 11th European Biophysical Societies' Association (EBSA) conference, the British Biophysical Society, and the Biological Physics Group of the Institute of Physics (IOP). The meeting might prove to be the largest in the history of these societies with over 100 invited lecturers.

Travel Assistance for students to attend the IUPAB Congress in Edinburgh

Travel assistance will be provided for up to 100 students to attend the IUPAB Congress 2017. Travel grants are primarily intended to assist graduate students and/or early career post-doctoral fellows from underdeveloped countries. This funding is **not** intended to cover the entire costs of travel from the applicant's institution to Edinburgh. It is expected that at least some funding will be raised from other sources.

Preference will be given to applicants from under-developed countries. Generally, travel assistance ranges from \$200 to \$1000. Funds will be paid on July 19 to applicants who register in person at the IUPAB Congress Office no later than July 17.

Adhering Bodies

The IUPAB does not have individual memberships. Rather, it is a Union of 56 biophysical organisations, societies and regional associations. These bodies appoint one, two or three delegates (depending on their level of subscription), who then vote at general assemblies on important matters such as the election of officers (Presidents, Secretaries-General and members of

Council), the venues for future Congresses, and any changes in the statutes and rules deemed to be necessary for the running of the Union. At the Edinburgh Congress it is expected that the Adhering Bodies will confirm the membership of new Adhering Bodies and approve the change of membership class requested by some existing Adhering Bodies.

Biophysical Reviews

Biophysical Reviews is the official journal of the Union. Under an agreement between IUPAB and the publisher, Springer DE, negotiated by the then President Dr I.C.P. Smith, the Union agreed to initiate this review-only journal under the leadership of Professor Jean Garnier. Initially, the journal contained 4 issues a year. Four-six reviews were published. From 2017 Springer-Nature will increase the number of issues to six. By the time this Newsletter reaches the Adhering Bodies, *Biophysical Reviews* will be listed and therefore the titles will be easily accessible through PubMed Central.

Invited speakers at the IUPAB-EBSA Congress in Edinburgh will be given the opportunity to publish the text of their presentations in a Special Issue of *Biophysical Reviews* and the authors will be able to share these reviews as a read-only file.

A Personal Note

Finally, I intend to resign as Secretary-General of the International Union for Pure & Applied Biophysics at the Congress in July. After continuous service to the Union as a member of Council and the Executive since 1998, I feel it is time to introduce some “fresh blood” into the Council.

I want to offer my special thanks to Louise Matheson, who has edited the *IUPAB News* so well for so many years. She will retire from her position at the IUPAB-EBSA Congress in July.

Cris dos Remedios
Secretary-General
January, 2017

Report on Summer School on “Imaging Neuroinflammation” at Kotor, Montenegro, Serbia in June, 2016

The Regional Biophysical School “Academician Radoslav K. Andjus” (NERKA) was established in honor of Professor R.K. Andjus (1926-2003), an internationally recognized scientist from the University of Belgrade, a member and founder of Montenegrin and Serbian academies of sciences and arts. This was the sixth school, organized traditionally by the Biophysical Society of Serbia, co-organized by the Faculty of Biology, University of Belgrade, Institute for Marine Biology in Kotor also as the venue, and with the fellowships sponsored by the International Union for Pure and Applied Biophysics (IUPAB).

The topic of the School was to introduce modern methods of biophysical imaging and image analysis in studies of inflammatory phenomena and markers of neurodegenerative diseases. Discussion was stimulated among participants on the translational value of these techniques and the clinical relevance of presented experimental markers. A discussion panel was also organized on the crisis in modern science and the relevance of interdisciplinarity and team work. The techniques covered were MRI, MRS, PET, EPRI, and advanced microscopy (non-linear microscopy- dual photon fluorescence, Fluorescence correlation spectroscopy & microscopy, PALM, STED, CARS, digital holographic microscopy). A multidisciplinary faculty (from 8 countries: Australia, Austria, Canada, Italy, Serbia, Sweden, UK, and USA) was chosen ranging from fields of physics (applications of laser technology and advanced microscopy), physical chemistry (magnetic resonance techniques and applications), biology (experimental models of neurodegenerative diseases), and medicine (clinical studies and markers of neuroinflammation).



The students were from 8 countries: Armenia, Bulgaria, Croatia, Hungary, Italy, Macedonia, Serbia and Slovakia. Altogether 33 students were registered. 15 students were awarded a fellowship on competitive basis.

EBSA Workshop held September 11-16, 2016 at Montpellier, France.

This Workshop on ***Membranes and Lipid-Protein Interactions*** was held at the Hotel Mercure, La Grande Motte, Southern France, with the support of IUPAB.

It attracted 22 students and postdoctoral fellows from nine countries, including Canada. The format of the workshop was similar to that used in previous workshops, and lectures were supplemented by student and lecturer lead case studies, where students discussed their research work, successes and problems to a wider audience.

The Hotel Mercure located on the Marina of La Grande Motte was the ideal venue for the workshop. With its enviable location and right in the vibrant heart of the town, it offered magnificent views of the harbour and sea.

Wine on the table at meal times was mandatory, but the timetable did not allow for a siesta in the afternoons after a lunchtime glass of wine. Being after the main holiday season, the hotel was relatively quiet, and there was always plenty of space to relax, and group tables were conducive to scientific and other conversations.

Invited speakers and lecturers at the course:

- Antoinette Killian, Utrecht, NL - Thermodynamics - Model Membrane Systems to Study Protein/Lipid Interactions
- Pierre-Emmanuel Milhiet, Montpellier, FR - AFM and Related Microscopies for Membrane Biophysics
- Manuel Prieto, Lisbon, PT - Fluorescence - Membrane Biophysics, Phases and Lipid Domains. Cholesterol in Membranes.
- Michael Rappolt, University of Leeds, UK - X-ray and Neutron Diffraction of Lipid Membranes
- Jonas Ries, Heidelberg, DE - Super Resolution Microscopy - Single-Molecule Applications in Membrane Biophysics.
- Sandrine Sagan, Paris, FR - Membrane Active Peptides: Cell Penetrating Peptides vs. Antimicrobial Peptides
- Ilpo Vattulainen, Tampere University of Technology, FI - Molecular Dynamics Simulation - Simulation Techniques in Membranes
- Bonnie Wallace, Birbeck College London, UK - CD Spectroscopy of Membranes

- Anthony Watts, Oxford, UK - Solid State NMR - Drug Targeting

Pierre-Emmanuel Milhiet, as the local organizer, did a great job of finding the location, negotiating with the hotel and keeping the whole workshop rolling, and he is to be congratulated for his efforts and enthusiasm. EBSA supported the workshop to a significant degree, and hopes to hold more of these kinds of events in the coming years.



Women in Science

Profile: Professor Jane Dyson

The Scripps Research Institute, California, USA



Jane Dyson has been Professor since 2013 at the Dept. of Integrative Structural and Computational Biology at the Scripps Research Institute.

She has recently been appointed Editor-in-Chief of the Biophysical Journal from 2017-2021.

Jane is also very active in the Scripps California Network for Women in Science, and was a recent lecturer in the Female Faculty Lecture Series.

Born in England, she immigrated with her family to Australia in the 1950s. Her education was at Australian public schools, followed by the University of Sydney where she earned degrees in

Biochemistry (B.Sc. 1973) and Inorganic Chemistry (Ph.D. 1977). Jane has achieved several awards in both Australia and the USA, including a D.Sc. in the Faculty of Science, University of Sydney.

Her illustrious career began with her early love of science in grade school, and after her Ph.D. studies she took up a post-doctoral position at MIT where she worked with Paul Schimmel on enzymes called tRNA synthetases.

Unfortunately, her research did not go as planned and she was discouraged enough to abandon that field and return to Australia to lecture in chemistry at the University of New South Wales in Sydney. Although her work load was large, she discovered a love of teaching – ***It was the 1970s, and you had to caution your students not to taste the chemicals*** she has been quoted!

Together with her husband, Peter Wright (also a TSRI Professor), Jane moved to San Diego in 1984 where she began studying anti-peptide antibodies in the laboratory of TSRI Professor Richard Lerner, which she found hugely satisfying. From folding of peptides with or without antibodies she moved into independent studies in the folding and structure of proteins

and the role of dynamics in enzymatic reactions. Intrinsically disordered proteins are now a central focus of her research.

Jane Dyson has now been at TSRI for more than thirty years. Her primary research techniques include NMR spectroscopy for study of structure and dynamics, mass spectrometry, and equilibrium and kinetic CD and fluorescence spectroscopy.

She is widely published with around 250 papers, and has received the ***Distinguished Scientist Award*** from the American Chemical Society, San Diego section. Her work has led to new insights into cancer tumour growth, drug design and many unique proteins in the human body.

Part of Jane Dyson's philosophy is that ***No experience is Wasted***. She is quoted as saying ***Everything I've ever done (even if "unsuccessful") informs how I live and how I do science***.

Jane Dyson's career path has perhaps been unorthodox, but seems all the more interesting for being so, and it has certainly proved productive.

Her scientific commitments have not stopped her maintaining interests in both music and the arts, and she has served for several years on the Advisory Board of the San Diego Opera. She has good memories too of her former activities in bushwalking and caving in Australia, and has expressed an interest in perhaps returning to these now that she has a little more time, since her family—a son and a daughter, Nicholas and Kate—have left home to pursue their own careers.

Jane Dyson is a wonderful example of how many ***Women in Science*** manage to combine exciting scientific careers with full and rewarding lives in both family life and other spheres.

October, 2016
Louise Matheson
Editor

Honour for Professor Maurizio Brunori

On Friday January 13th, the Accademia Nazionale dei Lincei (www.lincci.it) elected Maurizio Brunori, Emeritus professor at the University of Rome la Sapienza, to the position of Vice President of the Academy and President of the Class of physics mathematics and natural sciences.

Prof. Brunori is a Past President and very active member of IUPAB for many years.

He is Professor Emeritus at the University of Roma and has a long list of distinguished achievements. His research publications have, for example, focused on rapid reactions of macromolecular biochemical reactions.

The IUPAB congratulates Professor Brunori on this recent significant honour.

