



INTERNATIONAL UNION for PURE and APPLIED  
BIOPHYSICS

# IUPAB NEWS

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



One of the changes in 2012 has been the updating of the IUPAB website. I hope you will agree that it is an improvement. The aim is to make it more user-friendly and easier to navigate, as well as more attractive to website visitors. It is planned to continue this process during 2013.

The coming year will also see the continuation of serious preparations for the 2014 IBC to be held in Brisbane. This promises to be a stimulating and exciting Congress in a spectacular location.

The photograph below was taken by the Treasurer, Professor Patrick Cozzone, at the planning meeting held at the Brisbane Convention Centre in September. It shows (L – R) Professors **Brett Hambly**, Convenor, **Gordon Roberts**, IUPAB President, and **Glenn King** who is Joint Program Chair with Professor Jamie Vandenberg.

With best wishes,

**Louise Matheson**  
**Editor**  
mail@iupab.org



**President's Report**  
**Gordon Roberts**  
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**International Biophysics Congresses**

The next Congress will be held 3<sup>rd</sup>-7<sup>th</sup> August 2014 in the Brisbane Convention and Exhibition Centre, Brisbane, Australia. The IUPAB Executive met with the organisers in

September and were impressed by the facilities in the Convention Centre, by the city itself, and by the planning of the Congress. A number of distinguished scientists have already accepted invitations to give plenary lectures.

It is currently planned that the Congress will be organised around six major themes: Imaging from Molecules to Organisms; Photosynthesis/ Bioenergetics; Membrane Proteins; Protein Structure; Single Molecule Biophysics and Spectroscopy; and Computational Biophysics.

It is hoped that Satellite Meetings before or after the Congress will be an important feature; one-day meetings could be held in Brisbane, two or more day meetings at attractive resorts such as Palm Cove or Heron Island. Anyone with suggestions for possible Satellite Meetings is urged to contact Professor Brett Hambly ([brett.hambly@sydney.edu.au](mailto:brett.hambly@sydney.edu.au)) who is the Chairman of the Organising Committee.

**Task Forces**

The two new Task Forces have begun work; the two Task Force leaders have been identified and are in the process of recruiting members. The *Task Force in Education & Capacity Building*, intended to develop our educational activities, is headed by Professor Bill Williams, of Massey University, New Zealand ([m.williams@massey.ac.nz](mailto:m.williams@massey.ac.nz)). One of the ideas being pursued is the compilation of an annotated list of links to educationally useful video clips on aspects of biophysics available on the web. The *Task Force in*

*Applications of Biophysics* is headed by Professor Kuniaki Nagayama, National Institute for Physiological Sciences, Okazaki, Japan ([nagayama@nips.ac.jp](mailto:nagayama@nips.ac.jp)). An initial project of this Task Force will be to assemble a series of short articles illustrating the real-world applications of Biophysics, in fields from medicine to bionanotechnology, to be made available on the IUPAB website. Both Task Force leaders would welcome suggestions and offers of help.

**Education & Capacity Building**

Support for educational activities is second only to the Congress in the priorities of IUPAB, and financial support is provided to allow students to attend Schools and Workshops, which must have a substantial educational component (see <http://iupab.org/events/sponsorship/>). For 2013, support totalling US\$38,000 will be provided for the following Schools:

- International Conference: Biomolecular Form and Function; Bangalore, India, January 8-11, 2013. On the occasion of the 50<sup>th</sup> anniversary of the Ramachandran diagram.
- International Workshop and School: Computational and Theoretical Modelling of Macromolecular Interactions; Dubna, Russia, June 3-8, 2013
- International Workshop: Biological Surface and Interfaces; Sant Feliu de Guixols, Catalonia, Spain, June 30-July 7, 2013
- International Workshop: Advanced Image Processing for Cryo-Electron Microscopy; Beijing, China, July 7-10, 2013
- International Workshop: Bionanotechnology – Recent Advances, near Lisbon, Portugal, July 10–12, 2013. To be held as a Satellite meeting preceding the EBSA Congress in Lisbon.

- Latin-American Postgraduate Program of Biophysics Course; Rio de Janeiro, Brazil, October 5-9, 2013. Continuing support for a very successful Pan-Latin-American educational programme.

### Resources

Our new journal, *Biophysical Reviews*, edited by Professor Jean Garnier and published by Springer (<http://www.springer.com/life+sciences/biochemistry+%26+biophysics/journal/12551>) has made an excellent start, having published some first-rate reviews. The format of short incisive reviews including free colour figures is an attractive one. It is hoped that in the future this will provide a useful income stream for IUPAB, but its success depends on a steady (and increasing) stream of papers – please consider submitting a review of your area.

### Encyclopedia

At the risk of using this report to publicise my own activities, I would like to draw your attention to the five-volume Encyclopedia of Biophysics (ISBN 978-3-642-16711-9), published by Springer in cooperation with the European Biophysical Societies' Association (EBSA), which I have edited. This examines all fields of modern biophysics and is envisioned both as an easily accessible source of information and as a route into the scientific literature. It includes entries describing both Techniques and Systems.

In the Techniques entries, each of the wide range of methods which fall under the heading of Biophysics is explained in detail, together with the value and the limitations of the information each provides. Techniques covered range from diffraction (X-ray, electron and neutron), through a wide range of spectroscopic methods (X-ray, optical, EPR, NMR) to imaging (from electron microscopy to live cell imaging and MRI) and electrophysiology, as well as computational and simulation approaches. In the Systems entries, biophysical approaches to particular biological systems or problems – from protein and nucleic acid

structure to membranes, ion channels and receptors – are described, with an emphasis on the integration of the different techniques. An online version is available, with extensive cross-referencing through hyperlinks; this will be updated regularly. It is hoped that this will be a useful resource for the Biophysics community.

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## **Report from the Secretary-General**



### **Planning for the 18<sup>th</sup> IBC:**

The IUPAB Executive assembled in Brisbane, Australia on September 3-5 2012 to inspect the Brisbane Convention Centre facilities. Present were President Gordon Roberts, Past-President Kuniaki Nagayama, President-Elect Zihé Rao, Treasurer Patrick Cozzone, Louise Matheson, and myself.

The Executive was impressed by the quality of the facilities and by the professional presentation by the appointed conference organizer (ASN Conventions). A decision was made to book the larger of the two venues in the facility with the expectation that the Congress will attract more than 900 delegates.

Early in 2013 the Council will be contacted by the local organizing committee headed by Professor Brett Hambly with a view to eliciting input regarding the topics and possible invited speakers for the planned concurrent sessions.

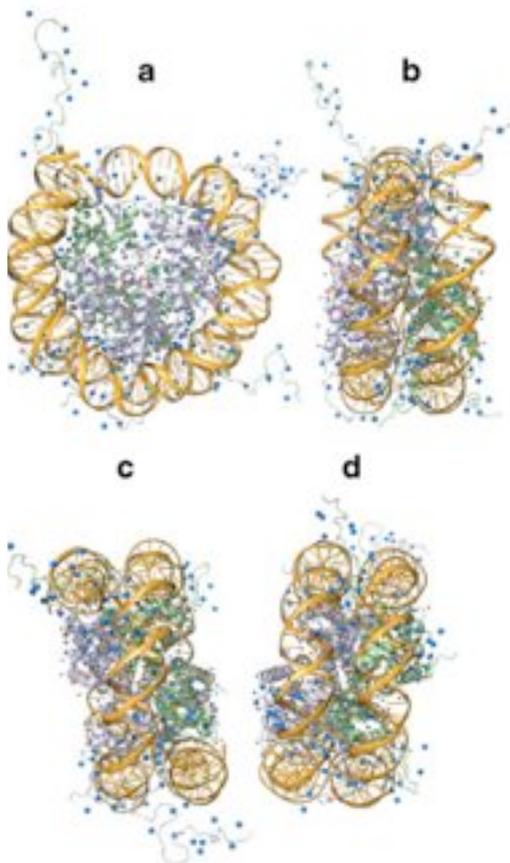
Another issue raised was the subject of satellite meetings. If Adhering Body members would like to become involved with presenting a satellite meeting, planning should start now.

### **Biophysical Reviews:**

The IUPAB flagship publication, *Biophysical Reviews*, has grown in size but the Editor-in-Chief, Prof. Jean Garnier urges all Adhering Bodies, particularly the various national Biophysical Societies, to support *Biophysical Reviews* by promoting this Springer publication. As a matter of course, all members of the Council are offered membership of its Editorial Board, and in return for this privilege they are expected to solicit and achieve the submission of 2-3 reviews in each calendar year.

I refer readers to the Annual Report by the Editor-in-Chief

in this issue of the News. In it he refers to the highly successful *Biophysical Reviews* initiative namely the production of Special Issues. Guest editors were the Secretary-General and Prof. Haruki Nakamura. Twelve reviews were published in a single issue on the topic: Computational Biophysics.



An image from the Special Issue of *Biophysical Reviews* showing computed superhelical wrappings of DNA in nucleosomes (Olson et al. 2012 *Biophys Rev* 4: 171-8, reproduced with permission from Springer).

The principle underlying the production of this issue was

that countries, regardless of their wealth and development, contain gifted computational scientists, particularly emerging scientists. By providing a network of “mentors” and by using the internet and Cloud Computing, it is becoming increasingly possible to do real research even in the absence of complex and expensive equipment required for so-called “wet laboratories”. It is hoped that the initial group of 15 mentors will be utilized and that the group will grow as the idea of computational biophysics increases in popularity.

A second Special Issue ([Biophysics of Protein-Ligand Interactions. An issue to honor Allen Minton](#)) will be published in *Biophysical Reviews* issue #2 in 2013.

If any of the Adhering Bodies would like to suggest a topic for a Special Issue of *Biophysical Reviews*, please contact either the Editor-in-Chief (Garnier Jean <[jean.garnier@jouy.inra.fr](mailto:jean.garnier@jouy.inra.fr)>) or myself.

### **Funding of 2013 Schools and Workshops for Young Biophysicists:**

A major activity of IUPAB is its contributions of funds for schools and workshops in biophysics, particularly those

carried out in emerging countries. In 2012 IUPAB provided a total of \$38,000 to support these workshops. These funds are not intended to cover all, or even most of the costs of running these meetings, but they are intended to assist and encourage the participation of graduate students.

In 2012 six applications were received by the closing date (end of August). All 17 members of the IUPAB Council (including the Executive) were asked to provide a ranked assessment of the applications. All but one member responded with the following result:

Brazil	Requested \$18,000
	awarded \$12,000
China	Requested \$10,000
	awarded \$3000
India	Requested \$20,000
	awarded \$3,000
Portugal	Requested \$5,000
	awarded \$5,000
Russia	Requested \$10,000
	awarded \$6,000
Spain	Requested \$10,000
	awarded \$9,000.

The Council congratulates the recipients and the schools/workshop organizers who are urged to read and understand the conditions that accompany these grants, of which the most important is to ensure that they obtain written receipts from the students who receive financial support.

These organizers are also required to submit a detailed financial statement of expenditure of their allocated funding as well as a scientific report of their meeting.

The reason for the strict adherence to this reporting stems from the requirements of the French Government (IUPAB is incorporated in France and is subject to French law) to provide detailed audited accounting for such expenditures. Failure to properly report will result in the loss of the tax-exempt status of IUPAB.

***Cris dos Remedios***  
***Secretary-General***

## ***Report on Biophysical Reviews***

Biophysical Reviews has inaugurated the editing of special issues devoted to a specific subject. The first one was published in September 2012 in Issue no. 3, on “Computational Biophysics” with Cristobal G. dos Remedios and Haruki Nakamura as Guest Editors. A second special issue is in preparation, to be published in 2013 on “Biophysics of Protein-Protein/Protein-Ligand Interactions” with Damien Hall and Cristobal G. dos Remedios as Guest Editors. We expect to attract more readers of our journal and hopefully more authors to send to us their reviews.

Springer has launched the process of the Impact Factor evaluation. It requires a steady publication of manuscripts of about 25 per year for three years with a minimum of 5 manuscripts per issue. The first value of the Impact Factor cannot be high for a young journal but it is essential to know it for further evaluation of its progress.

Indexation by PubMed is also important for the authors publishing in our journal. After a first attempt made by Springer in 2011, a second request is under way emphasizing that many articles in Biophysical Reviews

are very relevant to the medical research area, and the list of publications in the special issues will give new elements to Pub Med for indexing our journal.

Let me emphasize that the IUPAB members should consider themselves as mobilized to ensure sufficient contributions to our journal, both by submitting manuscripts on their own and by stimulating new authors to publish in our journal.

**Professor Jean Garnier  
Editor-in-Chief**

**Report from Professor  
Anthony Watts,  
Managing Editor,  
European Biophysical Journal**

### ***Europe joins IUPAB***

The European Biophysical Societies Association (EBSA) was elected as a full voting and adherent body to IUPAB at the 17<sup>th</sup> IUPAB Beijing Congress in November 2011.

EBSA was founded in 1984 at the 8th IUPAB Congress in Bristol by representatives of a small group of European societies seeking to establish a collective local presence in Biophysics, in order to support the community with an ongoing multinational role in addition to the established individual national meetings. Over the intervening years, EBSA has grown into an active association of 33 societies in the European area representing ~6000 individuals. Its principal recurrent activity is the biennial EBSA Congresses. Individual societies act as hosts, executing the organisational responsibilities, in conjunction with an international scientific programme committee. The recent 8<sup>th</sup> EBSA Congress (2011) was held in Budapest and attracted just over 850 participants, to be followed in

2013 in Lisbon, Portugal from July 13 -17.

EBSA is also active in promoting workshops, particularly to involve younger biophysicists, and in supporting smaller groups of member societies with joint meetings devoted to specialised research areas.

It also supports laboratory visits, travel Fellowships to the congresses, and has a very active and successful programme of biophysics schools. Several new biophysical societies have also been formed within Europe, with the encouragement and guidance of EBSA and its officers. The General Assembly of EBSA is held during the Congress, when the Association's officers are elected by representatives of adherent societies. EBSA is closely associated with the European Biophysics Journal (published by Springer Verlag), and the journal revenues contribute significantly to the EBSA programme.

The General Assembly of IUPAB, held at the 17th International Congress of Biophysics in Beijing in 2011, accepted the proposal for an IUPAB/EBSA International biophysics congress to be held in Edinburgh in July 2017, to be organised jointly by the British Biophysical

Society and the Institute of Physics (UK). This follows the previous collaboration between EBSA and IUPAB for the joint Biophysics Congress in 2005 in Montpellier.

Both current activities and historical details of EBSA can be found at [www.ebsa.org](http://www.ebsa.org), and short Youtube videos of

some press coverage and social activities at the 2011 Budapest 8<sup>th</sup> EBSA Congress can be found by searching “ebsa Budapest” and “ebsa alberto diaspro”.

Anthony Watts,  
on behalf of EBSA Executive  
Committee



EBSA Executive Committee during a break from a committee meeting in Oxford (left to right: Yves Engelborghs, BE; Antoinette Killian, NL (Secretary); Mike Ferenczi, UK (Treasurer until 2012); Tony Watts, UK (Managing Editor, EBJ, 2000 - on); Laszlo Matyus, HU (President, 2011 - 2013); Manuel Prieto, PT (President-elect); Eric Dufourc, FR (workshops coordinator); José Carrascosa, SP (ISE and EU representative); Helmt Grubmüller, DE; Alberto Diaspro, IT (kneeling, past President). Absent: Tony Wilkinson, UK (Treasurer, 2012 - on), Cathy Royer, FR

## A delegation from the Biophysical Society of China visits Brazil



Brazilian government representatives, professors and scientists from academic institutions and industries.

They also had a very pleasant meeting with Dr. Marcelo Morales, Council member of IUPAB and President of the Biophysical Society of Latin America, to discuss enhancing academic cooperation between the two Societies.

In order to strengthen cooperation amongst the Biophysical Societies of China, Brazil and Latin America, a delegation from the Biophysical Society of China (BSC) led by Professor Zihe Rao, president of BSC and president-elect of IUPAB, visited Brazil and the Biophysical Society of Latin America from November 2-5, 2012.

During the visit, Professor Rao and the Chinese delegation met with Professor Jacob Palis, president of the Brazilian Academy of Science, and Professor Eliete Bouskela, a member of the Brazilian Academy of Medicine.

The delegation also visited the Federal University of Rio de Janeiro where they met with

## **Antonio Benedetto, a European Biophysicist, comes “Down Under” with the 2012 Endeavour Research Awards program of the Australian Government**

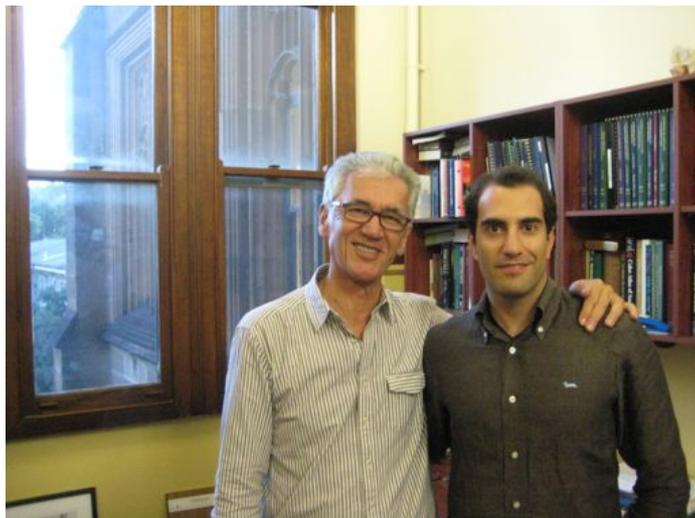
Antonio Benedetto is a young physicist doing research in Biophysics. At the 17<sup>th</sup> IBC in Beijing he was the recipient of a Young Scientist Travel Award.

The main idea at the base of his activity is that the comprehension of how bio-molecules work, e.g. proteins, membrane, enzymes, etc., is possible by using the “instruments” of the physical sciences. Furthermore, he strongly believes that biophysical research is an interdisciplinary activity in which the continuous interaction between physicists, chemists, biologists, medical doctors and engineers can really push important jumps in the knowledge. Looking for this kind of international and interdisciplinary interactions, in March 2012 Antonio arrived in Sydney, Australia under the prestigious 2012 Endeavour Research Awards program of the Australian Government.

The Endeavour Research Awards is the Australian Government's internationally competitive, merit-based fellowship program providing opportunities for citizens of the Asia-Pacific, Middle East, Europe and the Americas to undertake research and professional development in Australia.

Thanks to this Award – consisting of a 6-month fellowship of about 25,000 - Antonio worked as a researcher at the Bragg Institute of the Australian Nuclear Science and Technology Organization (ANSTO) in the group chaired by Dr. Elliot Gilbert. The Bragg Institute leads Australia in the use of neutron scattering and X-ray techniques to solve complex research and industrial problems in many important fields.

During his Australian experience, Antonio collaborated with several scientists and researchers both at the Australian Neutron Scattering Facility (Cy Jeffries, Elliot Gilbert, Prof. Gordon Kearley, and Robert Knott), and at the University of Sydney (Prof. Cristobal dos Remedios), creating the basis for future and productive collaborations that are ongoing.



Antonio with Cris after a research meeting, School of Medicine, Sydney University.

Antonio's research is mainly devoted to the application of neutron scattering and complimentary techniques - such as Infrared Spectroscopy, X-ray Scattering, Dynamic and Static Light Scattering, and Numerical Simulations - to characterise both structural and dynamic properties of systems of biological interest as, for example, dry and hydrated proteins with and without bio-protectant molecules. More specifically, the conceptual focus of Antonio's scientific interests is represented by the investigation of hydrogen-bonding networks at the interface between water and organic molecules; he is interested, in particular, in understanding both the structure-dynamics-function relationship and the role of hydrogen bonds in bio-systems, and how they affect their dynamics and self-assembly properties.

### About Antonio:

<http://antoniobenedetto.eu>

Antonio obtained B.S. and M.S. degrees in Physics, respectively in 2005 and 2007, at University of Messina, Italy, both with a final evaluation score of 110 cum laude /110; during which he was awarded the “Luigi Freddara” National Fellowship for academic merit. In 2007, he won the “Galluzzi Prize for Physics” awarded by the University of Roma Tre for his M.S. degree thesis work. In 2008, under the supervision of Prof. Salvatore Magazu’ - Full Professor of Experimental Physics the University of Messina - he started his Ph.D. in

Physics, during which he performed several neutron scattering experiments at the Institut Laue-Langevin (ILL, France). In the same year he has been awarded the “Gilberto Bernardini” Prize for “excellence in research” by the Italian Physics Society. In 2011 he received his Ph.D. Due to the scientific results presented in his PhD thesis, he has been awarded several prizes, such as “Giovanni Semerano Prize” awarded in 2011 by the Italian Chemical Society, and the “Borsellino-Menestrina Prize” awarded in 2012 by the Pure and Applied Italian Biophysical Society.

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## ***Women in Science***

### **Professor Frances Separovic**

It gives us great pleasure to announce that Professor Frances Separovic, FAA, has been elected a Fellow of the International Society of Magnetic Resonance. She was elected in recognition of her work as a leader in NMR studies of membrane structure and biophysics, mostly using solid state NMR.



During this year, Frances was also elected to the Australian Academy of Science, and as a Fellow of the Biophysical Society (USA).

These accolades are in addition to her 2011 receipt of the ANZMAG

Medal from the Australian and New Zealand Society for Magnetic Resonance, and in 2009 the Robertson Medal from the Australian Society for Biophysics.

Professor Separovic is the Head of the School of Chemistry at University of Melbourne, Victoria, Australia. She is also on the Organizing Committee for the 18<sup>th</sup> International Biophysics Congress to be held in Brisbane, Australia in 2014.

Louise Matheson - Editor

## **OBITUARIES**

### **Dame Louise Napier Johnson, 1940-2012**

Louise Johnson was born in 1940 at Worcester. She studied physics at University College London between 1959 and 1962, moving to the Royal Institution to work with David Phillips, completing her Ph.D. in 1966. For the first time, we began to understand how an enzyme – lysozyme – works; in this case, we had strong clues as to how it selectively cleaved the polysaccharide chain. In Oxford from 1967, her work led to an explanation of the allosteric mechanism of the regulatory enzyme glycogen phosphorylase and provided the basis for a general model describing how protein kinases are regulated.



Dame Louise Napier Johnson, 1940-2012

Louise had a passionate interest in international science, and remained always generous with her time, a huge influence on the emergence of structural biology in the UK and elsewhere, and gave wonderful support to the many new labs established by her students and research colleagues throughout the world.

Tom L. Blundell, Department of Chemistry, University of Cambridge, Cambridge, CB1 2GA, UK  
Correspondence: [tom@cryst.bioc.cam.ac.uk](mailto:tom@cryst.bioc.cam.ac.uk)

The above is taken from an Obituary written by Tom Blundell, and IUPAB is grateful to Tom Blundell and 'Structure' (<http://www.cell.com/structure/home>) for permission to reproduce this. The full text is available at [http://iupab.org/new/2012/obituary-dame-louise-johnson-1940-2012/attachment/louise\\_johnson/](http://iupab.org/new/2012/obituary-dame-louise-johnson-1940-2012/attachment/louise_johnson/)

### **Ivano Bertini (1940-2012)**

Ivano Bertini died of lung cancer on July 7, 2012, whilst still fully scientifically active. He was at the crossroad of many scientific communities, encompassing chemistry, biology, biophysics, spectroscopy and biomedicine. Academia and society as a whole have lost a unique personality, one that will not be easily forgotten.



Ivano Bertini (1940-2012)

As many scientists, Ivano did not believe in life after death but, as Frank Rooney once said: “Immortality is the genius to move others long after you yourself have stopped moving”.

The above is an excerpt from an Obituary by Lucia Banci, Director of CERM, and Claudio Luchinat, President of CIRMMP, Professors of Chemistry at the University of Florence, CERM/CIRMMP, Via Luigi Sacconi 6, 50019 Sesto Fiorentino, Italy. The full text is available at [http://iupab.org/new/2012/obituary-ivano-bertini-1940-2012/attachment/bertini-for-iupab\\_cl\\_lb/](http://iupab.org/new/2012/obituary-ivano-bertini-1940-2012/attachment/bertini-for-iupab_cl_lb/)

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