



# An Introduction to IUPAP

Bruce McKellar  
Past President

**Meeting of Council and Commission Chairs  
Singapore 20180503**



# Brief History

# 1922

## The beginnings...

In 1919 was formed the International Research Council "largely through the representatives of the National Academy of Sciences, Washington, and of the Royal Society, London, to co-ordinate international efforts in the different branches of sciences, under whose aegis international associations or unions in different branches of science could be formed".

In accordance with this principle, the 1922 General Assembly of the IRC convened at Brussels and a number of physicists present decided that the formation of a Physics Union was imperative.

Thirteen countries immediately announced their adherence to the new Union.

An "Executive" or steering committee of ten distinguished physicists undertook to prepare rules, regulations and activities of the organization.

The I.U.P.A.P. was launched.

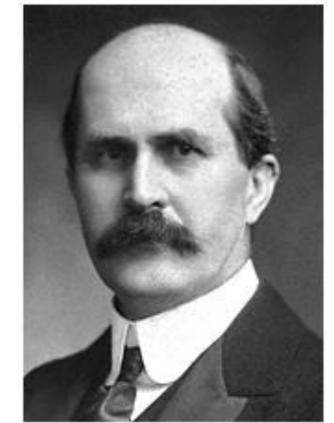
From



The history of our first 70 years  
see the IUPAP website

<http://iupap.org/about-us/the-history-of-iupap-1922-1992/>

# 1922



William Bragg  
First IUPAP President

## The Thirteen

1. Belgium
2. Canada
3. Denmark
4. France
5. Holland
6. Japan
7. Norway
8. Poland
9. Spain
10. Switzerland
11. United Kingdom
12. United States of America
13. Union of South Africa

## The Ten

- W. Bragg, president
- M. Brillouin
- O.M. Corbino
- M. Knudsen
- M. Leblanc
- R.A. Millikan
- H. Nagaoka
- E. Van Aubel, vice-présidents
- H. Abraham, secretary

# 1923 First General Assembly in Paris

- Marie Curie was deeply concerned by the explosion in the number of papers published, and insisted that abstracts be provided and widely distributed.
- Three more members joined (Italy, Sweden, Czechoslovakia)
- Members agreed to contribute to the reconstruction of physics libraries destroyed in the Tokyo earthquake
- The fees were set at 200 French Francs, which is equivalent to about 200 EUR now

# 1925

- Mexico and Australia joined. There were just 5 physicists in Australia who were qualified to be members of the UK Institute of Physics
- The General Assembly lasts 1 hour, following which papers were read by Lorentz on the Michelson Experiment and by Nagaoka on the transmutation of mercury to gold.

# Evolution of IUPAP

## IUPAP 2000 is recognisable as the precursor of IUPAP 2017

Burt Richter, IUPAP  
President, 2000



- The mission of IUPAP is to assist in the worldwide development of physics, to foster international cooperation in physics, and to help in the application of physics toward solving problems of concern to humanity.
  - IUPAP carries out this mission by sponsoring international meetings; fostering communications and publications; encouraging research and education; fostering the free circulation of scientists; promoting international agreements on symbols, units and standards; and cooperating with other organizations on interdisciplinary problems.
    - ~~47~~ **55** countries are members.
    - There are ~~20~~ **18** subdisciplinary commissions.
    - ~~Three~~ **Four** affiliated organizations.
    - There are links to other international science organizations.
    - Our budget is approximately ~~\$300,000~~ **600,000**/year of which about ~~60~~ **40**% goes to sponsor international conferences (“~~seed~~” money). The IUPAP sponsors most of the leading international conferences in physics.
    - ~~Five~~ **FOURTEEN** special committees and working groups exist for important international issues. These are established for an initial period of three to ~~five~~ years, then evaluated, and either continued or disbanded.



**IUPAP in 2018**

# 18 Commissions

- The first scientific commission, on Units, was established in 1931 at the third General Assembly
- Now there are 18 Commissions:
- Organise the major international conferences in their field
- There are 251 places to be filled on commissions (the director of the BIPS is exofficio a member of C2)

2. Symbols, Units, etc
3. Statistical Mechanics
4. Astroparticle Physics
5. Low Temperature Physics
6. Biological Physics
8. Semiconductors
9. Magnetism
10. Condensed Matter
11. Particles and Fields
12. Nuclear Physics
13. Physics for Development
14. Physics Education
15. Atomic Molecular and Optical Physics
16. Plasma Physics
17. Laser Physics and Photonics
18. Mathematical Physics
19. Astrophysics
20. Computational Physics

# 13 Working Groups

[WG1: International Committee for Future Accelerators \(ICFA\)](#)

[WG2: Communication in Physics](#)

[WG5: Women in Physics](#)

[WG7: International Committee on Ultrahigh Intensity Lasers \(ICUIL\)](#)

[WG9: International Cooperation in Nuclear Physics \(ICNP\)](#)

[WG10: Astroparticle Physics International Committee \(ApPIC\)](#)

[WG11: Gravitational Wave International Committee \(GWIC\)](#)

[WG12: Energy](#)

WG13: The measurement of Newton's Constant  $G$

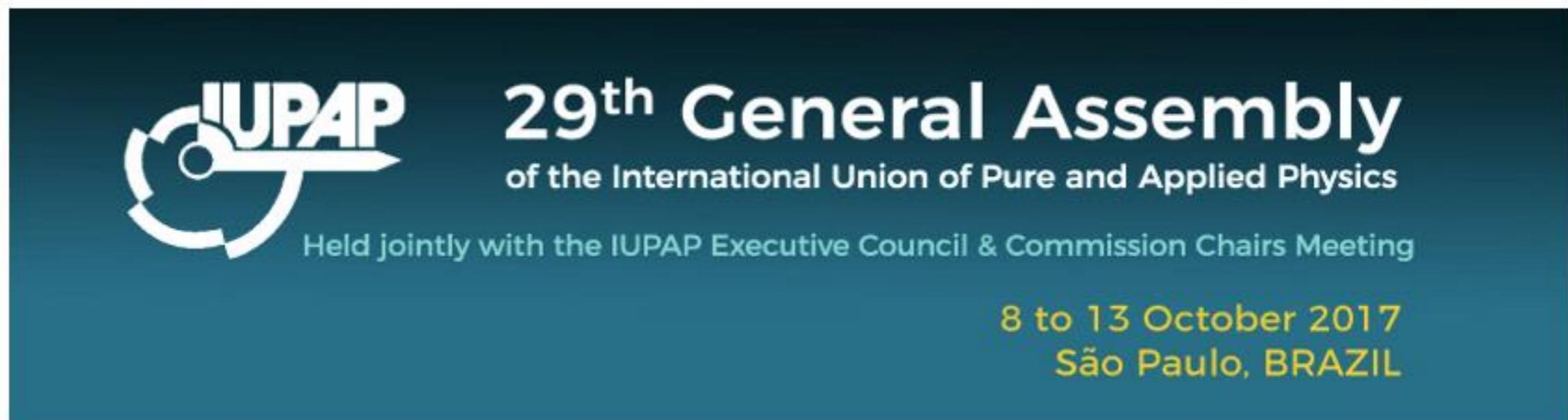
WG14: Accelerator Science

WG15: Soft Matter

WG16: Centenary (under construction)

WG17: Physics in Industry (under construction)

Some working groups have had close links with working groups of the OECD Global Science Forum



[iupap.org/general-assembly/29th-general-assembly/](http://iupap.org/general-assembly/29th-general-assembly/)

# Commentary: International Union of Pure and Applied Physics and you

## PHYSICS TODAY

Physics Today **70**, 10, 10 (2017); <https://doi.org/10.1063/PT.3.3707>

[http://iupap.org/wp-content/uploads/2015/05/IUPAP\\_OCT\\_2017\\_7\\_low.compressed.pdf](http://iupap.org/wp-content/uploads/2015/05/IUPAP_OCT_2017_7_low.compressed.pdf)

**What does IUPAP do for physicists?**

**[June 2017 Newsletter](#)**



# 55 Members with 259 total shares

Russia	18
USA	18
China: Beijing	15
France	15
Germany	15
Japan	15
UK	15
India	15
Italy	12
Korea	10
Brazil	8
Canada	8
Spain	8
Sweden	8
China: Taipei	5
Australia	4
Belgium	4
Czech Republic	4
Netherlands	4
Poland	4

Switzerland	4
Denmark	3
Finland	3
Hungary	3
Norway	3
South Africa	3
Austria	2
Israel	2
Mexico	2
Singapore	2
Algeria	1
Argentina	1
Chile	1
Costa Rica	1
Croatia	1
Cuba	1
Cyprus	1
Egypt	1

Estonia	1
Ethiopia	1
Ghana	1
Greece	1
Iran	1
Ireland	1
Kenya	1
Latvia	1
Lithuania	1
New Zealand	1
Peru	1
Philippines	1
Portugal	1
Romania	1
Saudi Arabia	1
Senegal	1
Slovak Republic	1
Slovenia	1
Tunisia	1

# Governance

- Governed according to the STATUTES  
(<http://iupap.org/about-us/statutes/>)

The Statutes of the International Union of Pure and Applied Physics  
(as adopted by the General Assembly, 2011)

## I. Mission

A. The mission of IUPAP is to assist in the worldwide development of physics, to foster international cooperation in physics, and to help in the application of physics toward solving problems of concern to humanity.

- And BYLAWS (<http://iupap.org/about-us/statutes/bylaws/>)

Bylaws of the International Union of Pure and Applied  
Physics

- You should make yourself familiar with these

# Governance

## The General Assembly

A. The General Assembly is the highest governing body of the Union. It:

- Creates and amends these statutes (requires a two-thirds majority of those present).
- Sets and amends the procedural bylaws (requires a three-fifths majority of those present).
- Elects the Executive Council that oversees Union activities between General Assemblies.
- Elects members of its Commissions.
- Sets the members' dues.

# Governance

## The Council

E. The Council has all of the authority of the General Assembly between General Assemblies except those items specified in Section III of these statutes, subject to ratification at the next General Assembly. It may fill vacancies in the Commissions that occur between General Assemblies.

# The Statutes

- The Statutes are somewhat antiquated, and the GA asked Council to consider updating them for the electronic age
- If you decide that you want to do this, the target is to decide on the new statutes by October 2019, circulate to members, get feedback, make changes and send out to members by June 2020

# To summarise

International collaboration, consultation and competition has been an integral part of physics for over a thousand years, and almost 100 years ago the International Union of Pure and Applied Physics was set up to facilitate international conferences. It has expanded its actions, but is now facing more challenges, including

- Freedom of movement of scientists
- Freedom from harassment in conferences and the workplace
- Distortion of publication practices because of the use of “objective metrics” to judge physicists
- A proliferation of fake conferences and fake journals
- Finding ways to involve mid career researchers in IUPAP

It is our task to address these and other concerns of the global physics community