



International Union of Pure and Applied Physics



C12: COMMISSION ON NUCLEAR PHYSICS

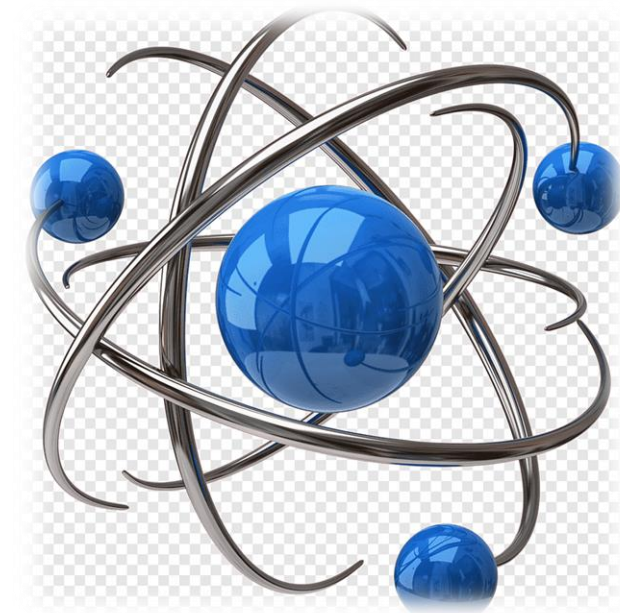
A. Aprahamian

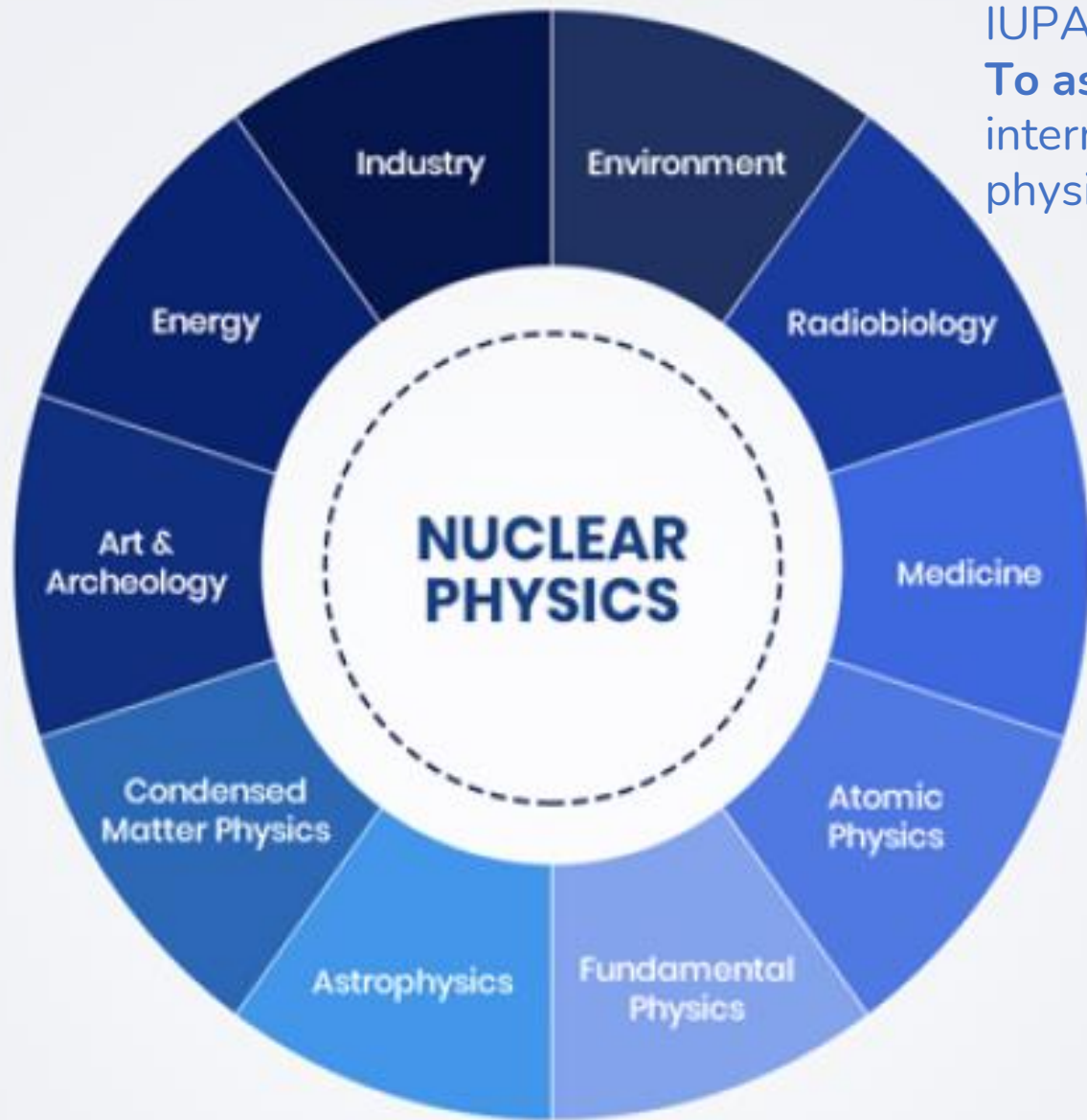
Chair of C-12

Report to Working Group 9, Avignon, France, June 3, 2023

MISSION

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 MISSION:

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.

C-12 is one of 20 commissions

WG9: INTERNATIONAL COOPERATION IN NUCLEAR PHYSICS (ICNP)

Mission/Mandate

1. To promote the **exchange of information** and views among the members of the international scientific community in the general field of Nuclear Physics including:
 - 1.The properties and characteristics of the atomic nucleus and its constituents;
 - 2.The interaction of atomic nuclei with other nuclei, with particles and with radiation;
 - 3.The apparatus and technologies used in nuclear investigations;
 - 4.The applications of nuclear physics to technology.
2. To recommend for Union sponsorship international conferences which qualify for support under Union regulations.
- 3.* To promote the free circulation of scientists; to assist conference organizers in ensuring such free circulation and in resolving potential infringements.
 4. To organize where feasible the award of medals or other testimonials of excellence in its field.
 5. To publish where feasible newsletters, circulars, occasional books, journals or handbooks in its area.
6. To maintain liaison with other IUPAP Commissions, with the Commissions or Committees of other Unions or of the International Council of Scientific Unions (ICSU) or other scientific organizations, with a view to collaborating and cooperating in sponsoring joint conferences and to participating in joint projects when need arises.
7. To make available to each General Assembly of the Union a summary of activities and progress in its field since the previous Assembly.

C-12 responsibilities

Conference Sponsorship: On recommendation from C12 IUPAP supports international conferences within the field of nuclear science.

Young Scientist Prize in Nuclear Physics: The IUPAP YSP in Nuclear Physics is awarded every third year. Typically around 30 nominations are evaluated each time. The award ceremony of the prize winners takes place at the International Nuclear Physics Conference, INPC, the largest and broadest in scope in nuclear physics.

Elements of the Periodic Table: When claims for the discovery of a new element of the Periodic Table is being put forward it is the task of IUPAP and IUPAC to validate the claims. To this end a document was produced in 2017: "IUPAC and IUPAP Procedures for Validating Claims for the Discovery of New Elements and Naming those Elements". It was realised that the criteria and rules that are to be followed in the validation procedure also were in need of a revision. A group of scientists, the Joint Working Group, with C12 participation, were appointed by the two unions to undertake that revision. The report was published in the journal Pure and Applied Chemistry in 2018.

C12: COMMISSION ON NUCLEAR PHYSICS

Members:

D. Bettoni (Italy)
I. Dillmann (Canada)
F. Farget (France)
M. Gaidarov (Bulgaria)
I. Grigorenko (Russia)
T. Johansson (Sweden)
A. Mackova (Czech Republic)
N. Tomofumi (Japan)
M. Wiedeking (South Africa)
Y. Ye (China)
J. H. Yoon (Korea)

Officers:

A. Aprahamian (Chair, USA)
M. Borges (V. Chair, Spain)
E. Wiedmann (Secretary, Austria)

Associate Members:

M. Azwindinni (**C-11**, South Africa)
C.L. Cheng (**C-6**, Taiwan)
J. Yokoyama (**C-19**, Japan)

C-12 Commission on Nuclear Physics

2022: Two Meetings + 1 with WG-9

1. April 5, 2022: Virtual, zoom
INPC status of in-person, hybrid
2. September 13, 2022 : Cape Town, South Africa, **INPC**
Report on INPC
Discussion on Young Investigator qualifications
2025 INPC
3. June 14-15, 2022: SURA headquarters
Washington DC, With WG-9

Conferences:



International Thorium Energy Conference 2023 – CERN, Geneva

Sep 24 – 28, 2023
Europe/Zurich timezone

Endorsement of C-12

Refused IUPAP Endorsement Violation: Free circulation of scientists

Name of IUPAP Commission

C12. Nuclear Physics

Conference title

Onset of Deconfinement and Critical Point

Location

Baku, Azerbaijan

Start date

24/10/2022

End Date

28/10/2022

Name of organiser/contact person

Dr. Anar Rustamov

Phone number

+49 152 06665650

Email

a.rustamov@cern.ch

Conference Website

<https://indico.cern.ch/event/985460/>

Mailing Address

a.rustamov@cern.ch

[Map It](#)

Number of expected participants

150

Have you submitted information to the Liaison Committee of the host country?

No



iINPC2022

Cape Town, South Africa

International Nuclear Physics Conference
Cape Town, South Africa

471 attendees came from 37 countries (100 from south Africa)
512 abstracts (excluding plenary speakers) were submitted
(with a large imbalance in favour of nuclear structure)

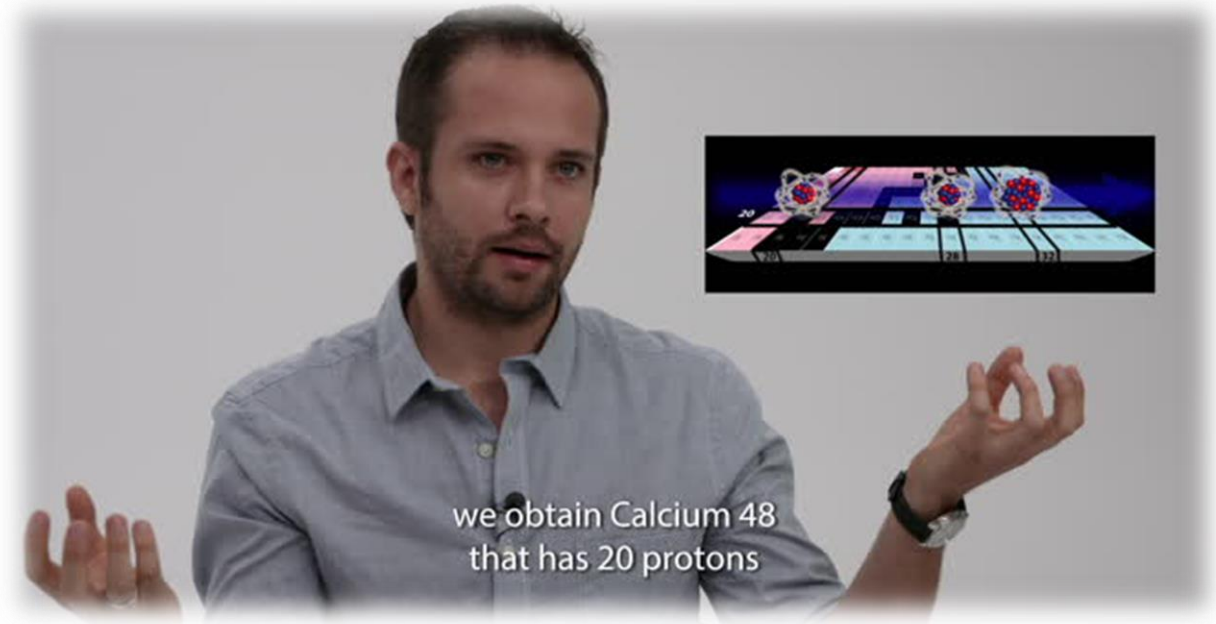
Young Investigator Prize:

3 awards every 3 years

The IUPAP Young Scientist Prize in Nuclear Physics was established by IUPAP in 2005 at the time of the General Assembly in Cape Town, South Africa.

The purpose of the prize, which consists of 1,000 €, a medal, and a certificate citing the recipient's contributions, is: **"To recognize and encourage very promising experimental or theoretical research in nuclear physics, including the advancement of methods, procedures, techniques, or devices that contribute in a significant way to nuclear physics research. Candidates for the prize must have a maximum of eight years of research experience (excluding career interruptions) following the Ph.D. (or equivalent) degree**

Ronald Fernando Garcia Ruiz:
MIT (Faculty)



Carlo Giulio Bruno:
U of Edinburgh (Lecturer)



Volodymyr Vovchenko:
Postdoc at INT/LBL
Faculty U of Houston



IUPAP + IUPAC Procedures for Validating Claims of New Discoveries

Science Brings Nations Together

IUPAP Conference "**Heaviest nuclei and atoms**"

Apr 25, 2023, 12:00 AM → Apr 30, 2023

National Academy of Sciences of the Republic of Armenia



Superheavies in Space

Ani Aprahamian

A. Alikhanyan National Science Laboratory of Armenia (YerPhi)
University of Notre Dame, Notre Dame, IN USA

Science Brings Nations Together
IUPAP Conference “Heaviest nuclei and atoms”
April 25-29, 2023

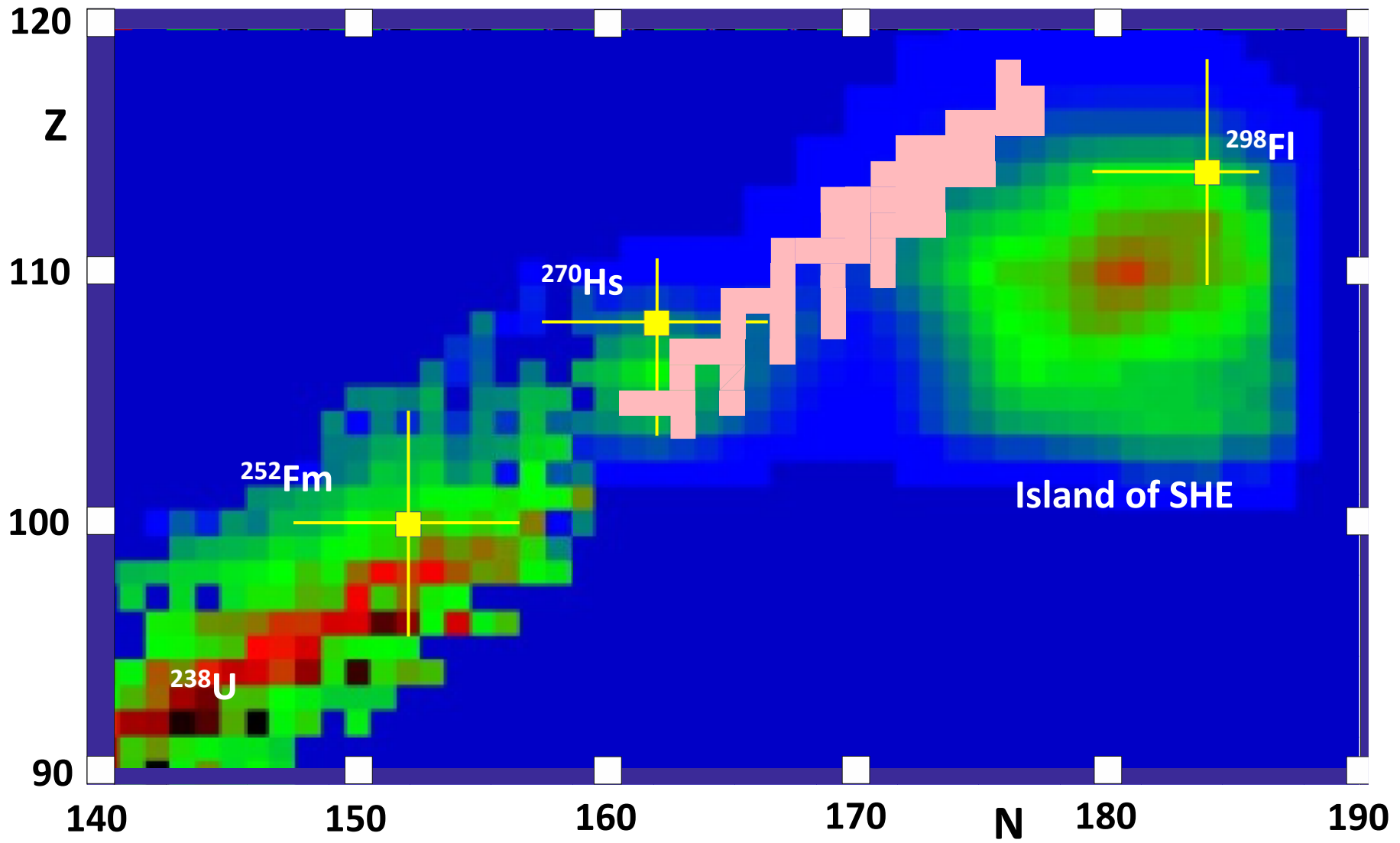
Science Brings Nations Together

113 Nh Nihonium (284)	114 Fl Flerovium (289)	115 Mc Moscovium (288)	116 Lv Livermorium (293)	117 Ts Tennessine (294)	118 Og Oganesson (294)
--------------------------------	---------------------------------	---------------------------------	-----------------------------------	----------------------------------	---------------------------------

From ^{48}Ca induced reactions

Z=174

Macro - microscopic theory (Liquid Drop energy + Shell corrections)





Yuri Ts. Oganessian

A hand-drawn illustration featuring the text "Thank you" in a black, cursive script. The text is underlined with a simple black line. The background is composed of several abstract, painterly shapes: a teal shape on the left, a light beige shape on the right, and a reddish-orange shape at the top right. There are also some small, scattered dots in the teal area. In the top right and bottom left corners, there are simple line drawings of leaves on stems.

Thank you