

Introduction to IPPOG and the Particle Physics Masterclasses

A High Energy Afternoon (for a change)!

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L. Levchuk & **S. Lukyanenko**, *National Academy of Sciences of Ukraine*, *Local Particle Physicists*

U. Bilow, *Technical Univ Dresden* & **K. Cecire**, *Univ Notre Dame*, *IPPOG Masterclass Coordinators*

S. Wood, *Univ Notre Dame*, *QuarkNet Masterclass Coordinator*

N. Mysko-Krutik & **M. Barabashko**, *B. Verkin ILTPE of NASU*, *Local Organisers*

II IAS Conference on Condensed Matter & Low Temperature Physics, Kharkiv, Ukraine, 10 June 2021



Who are we?

International Scientific Collaboration

- Active Researchers with Experience in Education & Outreach
- Experts in Communication & Education

Global Network Building

- 37 members: 30 countries, 6 experiments, 1 intl lab (CERN)
- 2 associate members: 2 national labs (DESY, GSI)

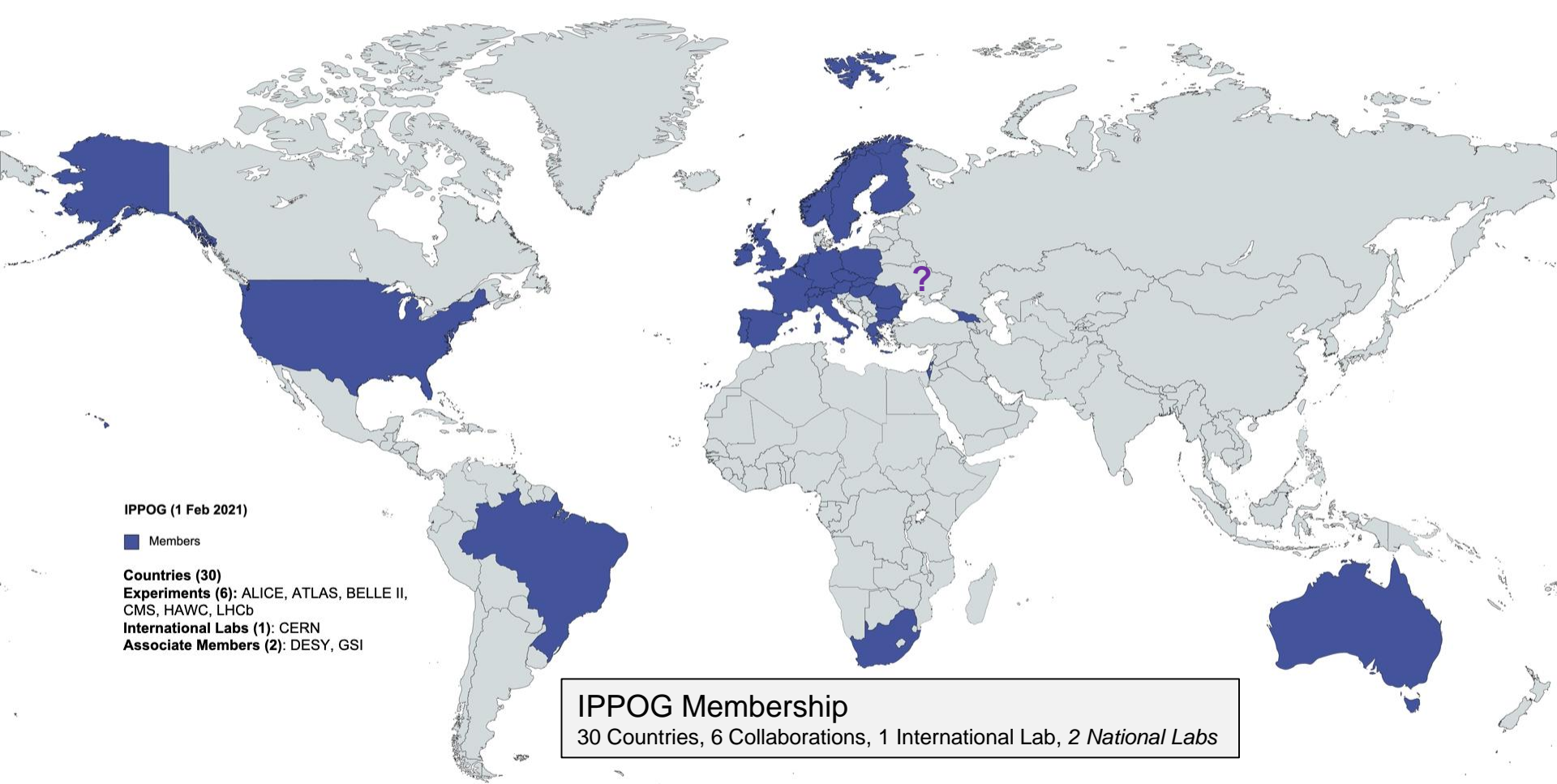
Global Outreach Organisation

- International Particle Physics Masterclasses
- World-Wide Data Day, Global Cosmics, etc.

Local Outreach Support

- Sharing of expertise, best practices, material database
- Resources to support events, kick-start activities





IPPOG (1 Feb 2021)

■ Members

Countries (30)

Experiments (6): ALICE, ATLAS, BELLE II, CMS, HAWC, LHCb

International Labs (1): CERN

Associate Members (2): DESY, GSI

IPPOG Membership

30 Countries, 6 Collaborations, 1 International Lab, 2 *National Labs*



Organisation

Chairs

- Steven Goldfarb (University of Melbourne) 2017-2022 (2nd term)
- Pedro Abreu (LIP, IST Universidade de Lisboa) 2020-2022 (1st term)

Core Team

- **Strategic Development & Communication:** Barbora Gulejova (Universität Bern)
- **Administrative Support:** Anita Bens (CERN)

Coordination

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- **Masterclasses:** Uta Bilow (Dresden University), Ken Cecire (University of Notre Dame)
 - **Global Cosmics:** Sabine Hemmer (INFN), Carolin Schwerdt (DESY)

Organisational Bodies

- **Advisory Boards & Committees:** Finance, Speakers & Publications
- **Steering Groups:** Masterclasses, Global Cosmics, Web Development
- **Working Groups:** Bringing Masterclasses to New Countries, Explaining Particle Physics Hot Topics, Exhibits & Public Events



International Particle Physics Masterclasses

The Flagship of IPPOG

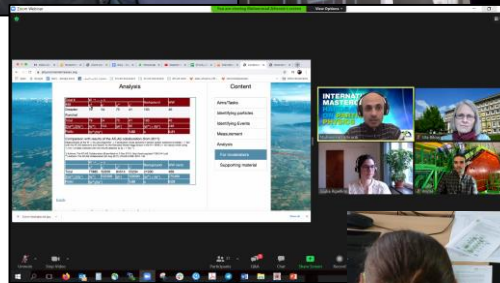
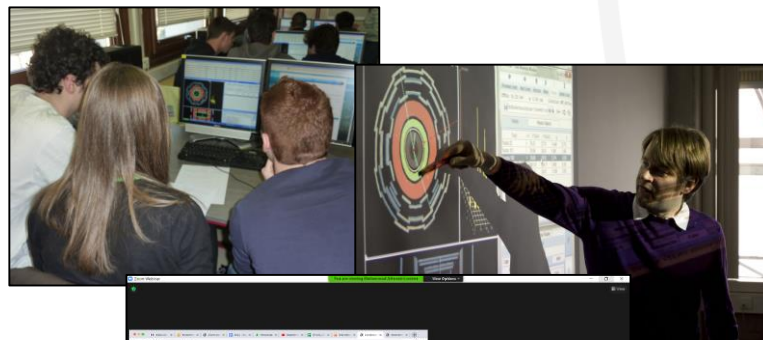
- Students become “Researchers for a Day”
- Invited to research institute or university
- Introductory lectures on research
- Use analysis tools to examine real data
- Worldwide videoconference w/other students

2019

- 60 countries, 220 labs, **14,000 students**

2021 (11 Feb – 27 Mar)

- Feb 11 (UN Day Women & Girls in Science): 7 groups
- CERN (LHC): 137 Masterclasses, **5192 students**
- GSI (Particle Therapy): 33 Masterclasses
- KEK (Belle II): 5 Zoom sessions
- FNAL (LHC, Neutrino): 38 Masterclasses, **600 students**





This Afternoon...

Get some coffee, you are going to be a **High Energy** physicist

14:00 – Welcome by the IPPOG Chairs (Us)

14:30 – Introduction to Standard Model, LHC, and CMS (Leonid Levchuk)

15:30 – Break

15:45 – Introduction to the CMS Masterclass (Uta Bilow, Ken Cecire, Your Mentors)

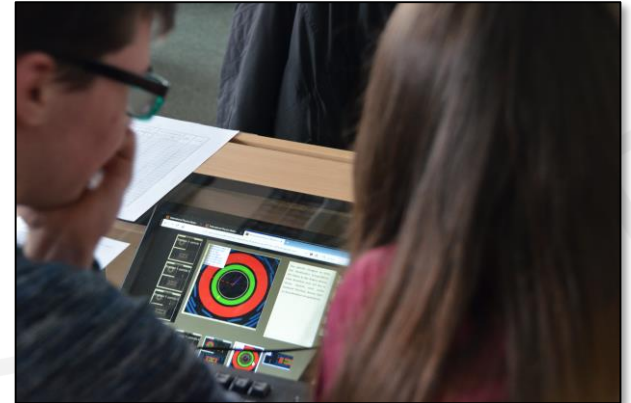
16:30 – The CMS Masterclass Measurement (You)

17:30 – A Mini-Conference to Discuss Results (All of You)

18:00 – End of Programme

Throughout the Afternoon

- Please ask questions!
- We want you to run these next year!





Your Mentors

QuarkNet

Marla Glover, Joel Klammer, Jeremy Wegner, Susan Wetzler, Shane Wood

Local

Philip Kuznietsov, Olha Kravchuk, Bohdan Bidenko, Валерия Чекубашева, Владимир Роговец, M Kolodyajna, Alex Leonov, Eugene Petrenko, Sergei Poperezhai, Ксения Минакова, Ян Костиленко, Валентин Коверя, Ана Бойченко