

INTERNATIONAL PARTICLE PHYSICS OUTREACH GROUP

Engaging the world with science

S. Goldfarb, University of Melbourne, Lepton-Photon 2021, Manchester, UK, 10-14 Jan 2021



Fundamental Components of Scientific Research

Communication

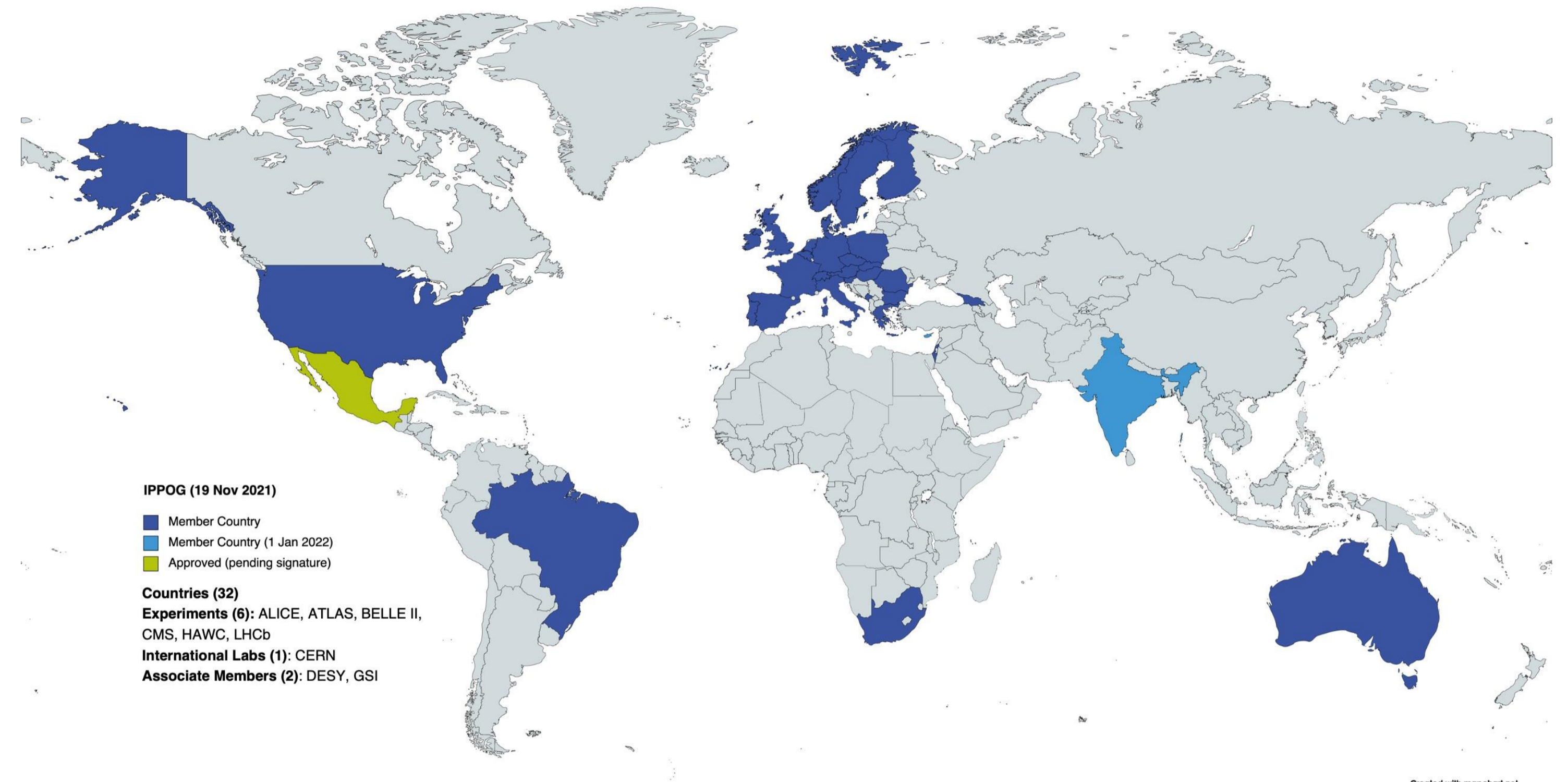
- Develop messages & strategies
- Optimise platforms & networks
- Create effective material
- Implement and evaluate



Education & Outreach

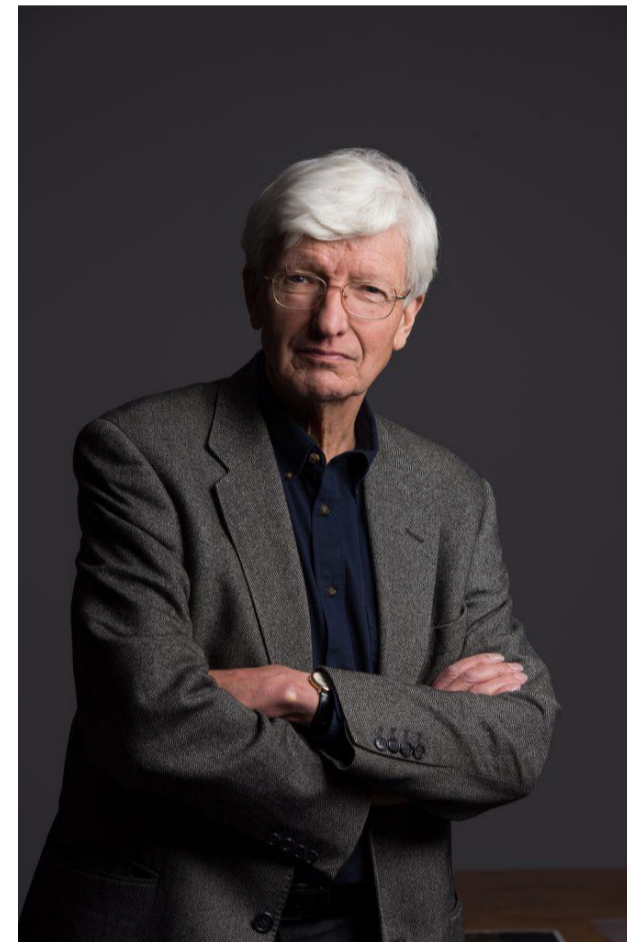
- Establish understanding of scientific process
- Instil appreciation of fundamental research
- Build trust with communities
- Train the next generation of scientists

*The Education, Outreach & Communication we do **today** lay the foundation for **tomorrow's** support and secure the **next generation** of scientists.*



IPPOG Timeline

- 1997** Birth of European Particle Physics Outreach Group (EPOG) formed under the joint auspices of ECFA and EPS-HEPP
- 2005** Birth of International Particle Physics Masterclasses Now in over 60 countries worldwide
- 2011** Global Expansion to IPPOG Israel, Australia, USA, South Africa, Brazil, India, Mexico,...
- 2016** Formal Scientific Collaboration Memorandum of Understanding
- 2022** Celebrating 25 Years of Outreach Excellence Dedicated workshops to extend our capability



"...the particle physics community has a moral obligation to inform the public on its activities. To do this well, experiences must be shared among countries in view of the need to optimize the use of resources."

- Chris Llewellyn-Smith, CERN Director General, 1997

The IPPOG Collaboration

International Scientific Collaboration

- Active researchers, experts in communication and education
- 32 countries, 6 experiments, 1 intl. lab (CERN), 2 assoc. members (DESY, GSI)
- Twice annual collaboration meetings

Goals

- Sustainable development of particle physics outreach
- Improvement of scientific educational standards worldwide

Working Groups

- Explanatory content for hot topics in particle physics
- Expansion of physics Masterclasses to new audiences worldwide
- Applications of particle physics research to society
- Development of exhibitions and material supporting public engagement

IPPOG's Worldwide Activities

International Particle Physics Masterclasses

- Students invited to local institutes to become "Researchers for a Day"
- Introductory lectures, analysis of real data, worldwide videoconference
- 2019: 60 countries, 220 labs, 14,000 students
- 2022: 24 Feb - 9 Apr & 11 Feb (UN Day for Women & Girls in Science)

physicsmasterclasses.org

Global Cosmics Portal

- Central Hub for worldwide classroom cosmic ray programmes

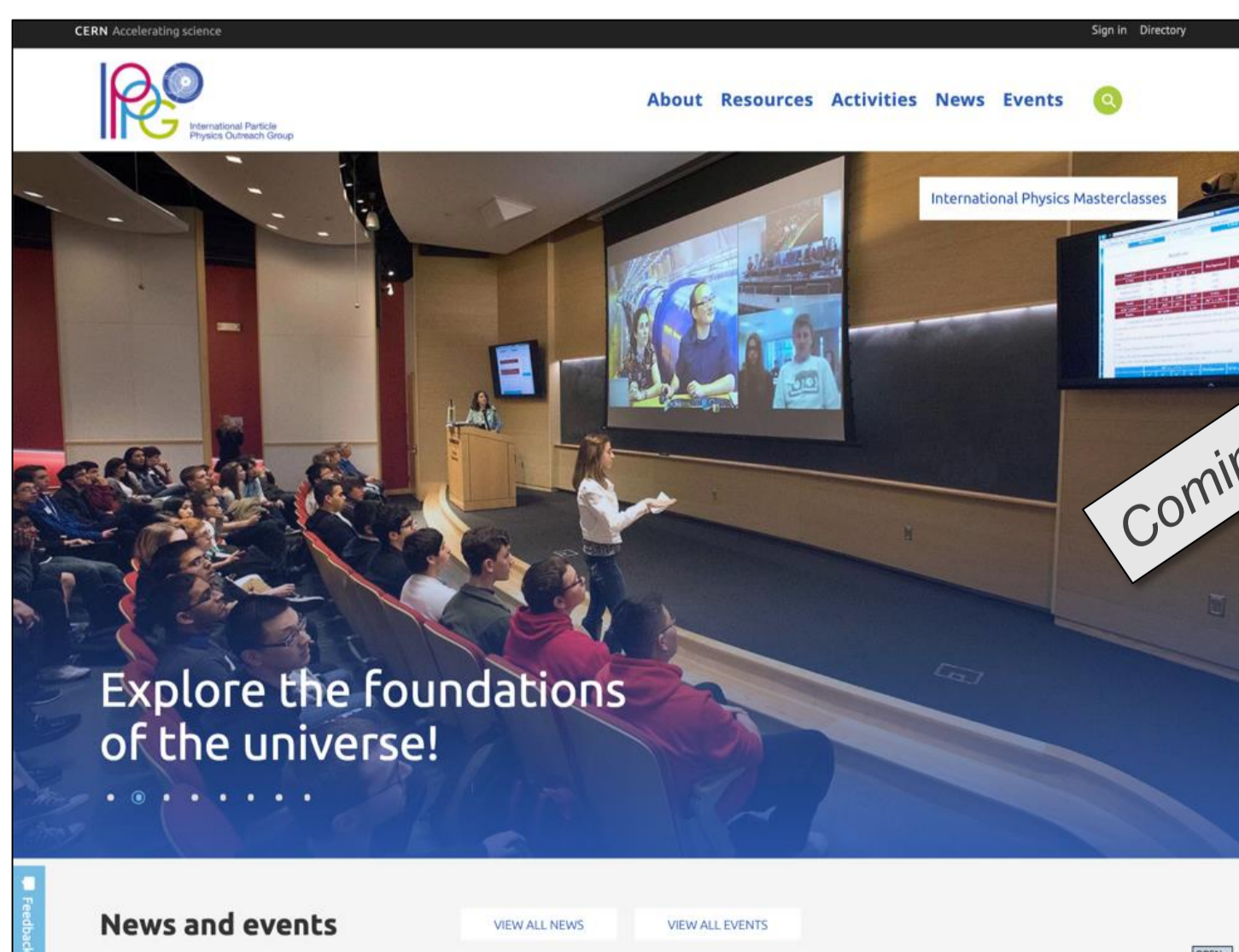
globalcosmics.org

Organisational Support and Promotion of

- International Muon Week, Worldwide Data Day (QuarkNet)
- International Cosmics Day (DESY)
- Beamline for Schools (CERN, DESY)



New online platforms for 2022



ippog.org



ippog.org/ippog-resource-database

Preparing the Future

Support for particle physics and related fields

- Develop material and activities in support of European Strategy Update 2020
- Extend partnerships in scientific, educational and communication societies and networks, including APS, EPS, NuPECC, APPEC, IAPS, EPPCN, Interactions

Support for science education

- New online platforms for educational programmes
- New resource database targeting teachers and students worldwide

Support for everyone

- Continued global expansion of membership and programme reach
- Diversity, Inclusion Accessibility Working Group to support new audiences

IPPOG's efforts stretch well beyond particle physics by teaching students to think critically, thus becoming knowledgeable and productive citizens.