

14th IPPOG Meeting – CERN

News from the Coordination

- H.P. Beck, IPPOG Chair, Universität Bern
- S. Goldfarb, IPPOG Chair, University of Melbourne
- B. Gulejova, Scientific Secretary, CERN

Lisbon (13th IPPOG Meeting)



REPORT

from

13th IPPOG meeting CERN, 20-22 April 2017

(by Barbora Bruant Gulejova)

PARTICIPANTS

COORDINATION TEAM (CT):

Hans-Peter Beck (University of Bern), Steven Goldfarb (University of Melbourne), Barbora Bruant Gulejova (CERN)

MEMBERS REPRESENTATIVES:

Pedro Abreu (Portugal), Nicolas Arnaud (France), Marge Bardeen (USA), A Melo (Slovakia), Farid Ould-Saada (Norway), Catia Peduto (Italy), Dirk Ryc Stoicea (Romania), Charles Timmermans (Netherlands)

CANDIDATE MEMBERS REPRESENTATIVES:

Andrei Gorisek (Slovenia), Despina Hatzifotiadou (ALICE), Natascha Kramme Mackeprang (Denmark), Jiri Rames (Czech Republik), Kate Show (ATLAS), Jon-Ivar Adilierud (Ireland), Peter Watkins (UK)

ASSOCIATES:

Angelos Alexopoulos (CERN), Katarina Anthony (ATLAS), Uta Bilow (TU Dresden), Beatrice Bressan (TO-TEM), Kenneth William Cecire (University of Notre Dame, US), Catarina Espirito Santo (LIP), Yiota Foka (GSI/FAIR), Christine Kourkoumelis (University of Athens), Marzena Lapka (CMS), Celso Martinez Rivero (IFCA, Spain), Achintya Rao (CMS)

WEBPAGE

https://indico.cern.ch/event/622184/

Report from 13th IPPOG meeting, 20-22 April 2017, LIP, Lisbon

CONTENTS

1. GENERAL IPPOG ISSUES.

1.1. WORD From LIP MANAGEMENT	3
1.2. IPPOG NEWS	3
1.3. IPPOG INTERNAL AFFAIRS	4
1.4. IPPOG PUBLIC WEBPAGE and EXTERNAL COMMUNICATION	4
2. IPPOG STORIES / IMPACT	-
2.1. AN INSIDE VIEW FROM IPPOG	
2.1.1. Advantages of ALICE's membership in IPPOG	
2.1.2. How USA/Fermilab/Quarknet benefits from processing the control of the cont	
2.2. INSPIRING SUCCESS STORIES	
2.2.1. Event "Nuit des O	n'
2.2.1. Event "Nuit des D 2.2.1. Event "Nuit des D 2.2.2.1. Event "Nuit d 2.2.2.1. E	L
more merring	_
Deur Hever	9
e hor	9
oelli.	9
AUDIENCE	10
	12
AUDIENCES / NON-CONVENTIONAL METHODS	12
4.3. EXHIBITIONS and EVENT HIGHLIGHTS	14
4.4. IMPACT OF EDUCATIONAL PROGRAMS for STUDENTS and TEACHERS	16
5. VARIOUS REPORTS	
5.1. MASTERCLASSES 2017	
5.2. PHYSICS FOR EVERYONE – FIELD, SYMMETRIES, MASS	
5.3. IMPACT of SCIENCE on SOCIETY and SUSTAINABLE DEVELOPMENT – showcased by CERN	
5.4. COSMIC RAYS GOING GLOBAL – STATUS QUO AND PLANS	
5.5. INTERNATIONAL PHYSICS OLYMPIAD 2018	
5.6. AGENCY CIENCIA VIVA	27
5.7. COUNTRY, EXPERIMENT and LAB HIGHLIGHTS	28
5.7.1. USA/FERMILAB/Quarknet: International Muon Week	28
5.7.2. PORTUGAL - Upgrading the communications & outreach structure @ LIP	28
5.7.3. UK – STFC Report	29

Report from 13th IPPOG meeting, 20-22 April 2017, LIP, Lisbon



European Particle Physics Outreach Group

Minutes of the First Meeting of the Network on Public Relations and explaining Partic **CERN Member States**

19/09/97

Present: See Appendix 1

(1) INTRODUCTION

The Director General, Chris Llewellyn Smith, welcomed the participants and gave a brief introduction to th network. He stated that the particle physics community has a moral obligation to inform the public on its ac is essential in view of the public's influence on the politicians who provide the funding for research. He stre among countries in view of the need to optimise the use of resources. He illustrated this by pointing out that NASA in investment in public information systems (e.g. 23 people on Hubble Space Telescope public comi be selective. It was important to decide: (1) whom are we trying to reach and (2) what are we trying to achie

As to who should be carrying out public communications, he considered that it had to be <u>built</u> 20th Birthday, given:

(a) that they are based in the Member States, and also larger i 200 research physicists at CERN),

(b) reaching the general public ce range.

He pointed out how coordinating role but stressed that this was a particle ph reviewed potential ar ding, ensuring graphics and text are transferred from national pamp PPARC pamphlet on me Vienna virtual reality project, LHC PR on CD-Rom, sharing experience wit supporting material for talks.

He emphasized the importance of being selective on future actions, and collective decision making, pointing good long range investment while teachers can amplify the effect. He indicated that if good projects were id appropriate funding. He concluded by announcing that Frank Close has agreed to act as the coordinator of the Division for one year from December 1, 1997.

Appendix 1: Participants

Christian Gottfried Meinhard Regler, RECFA Representative

Czech Republic

Jiri Rames, Institute of Physics, Prag

Finland

Riitta Rinta-Filppula, CERN

Geneviève Edelheit, IN2P3, Paris

Christine Kourkoumelis, Univ. Atl

G. Pocsik, Eotvos Lorand University, Budapest

Alessandro Pascolini, Univ. Padova

Netherlands

u, Institute of Nuclear Physcis

Maria Abreu, CERN

Slovak Republic

Pavol Murin, Inst. of Exp. Physics, Slovak Academy of Sciences

lember State languages and

Antonio Ferrer, Univ. of Valencia

Erik Johansson, Univ. of Stockholm

Claude Joseph, Univ. of Lausanne

United Kingdom

Christine Sutton, Univ. Oxford

DESY

Petra Folkerts

John Fergusor Frank Close Maurice Jacob Peggie Rimmer Neil Calder Mick Draper



IPPOG In The News



Mais de 700 pessoas, entre as quais o ministro Manuel Heitor e o comissário europeu Carlos Moedas, manifestaram-se este sábado, em Lisboa, em defesa da ciência em Portugal e no mundo. Com palavras de ordem como a que dá título, a esta peça, lembraram que "os factos não tomam partido".



IPPOG In The News

Fisica: ecco le iniziative dell'INFN rivolte agli studenti delle scuole superiori di tutta Italia

I ragazzi hanno l'opportunità di conoscere le ricerche di frontiera della fisica delle particelle confrontandosi con i loro coetanei all'estero

A cura di Filomena Fotia 20 settembre 2017 - 10:34



Precision resistor.

CHF 0.01



Sono numerose le iniziative cui collabora l'Istituto Nazionale di Fisica Nucleare (INFN) rivolte agli studenti delle scuole superiori di tutta Italia, in cui i ragazzi hanno l'opportunità di conoscere le ricerche di frontiera della fisica delle particelle confrontandosi con i loro coetanei all'estero.

Si incomincia con una novità assoluta il 14 novembre: quest'anno per la prima volta dall'International Particle Physics Outreach Group (IPPOG), di cui l'INFN è un

ar loro insegnanti ad analizzare i veri dati degli esperimenti del CERN e poi si collegheranno in una videoconferenza (in lingua inglese) per confrontare il risultato complessivo con gli altri gruppi di studenti del mondo, che in contemporanea hanno analizzato gli stessi dati. Requisito per la scuola è possedere una buona connessione internet e delle postazioni multimediali. Gli insegnanti interessati possono rivolgersi a Kenneth Cecire (Kenneth.W.Cecire.1@nd.edu), che fornirà loro tutte le informazioni utili per il corretto svolgimento della giornata W2D2.

Cosmic-ray Detector Awarded for Contribution to International Competition

Eleven students from UCS Hampstead have won a cosmic-ray detector after reaching the top 30 entries in the Beamline for School's Competition 2017 (BL4S) established by CERN



The "Absolute Uncertainty" team (all 15 to 17 years old Noah Grodzinski, Chris Harley, Geno Racklin Asher, Av from UCS Hampstead, which successfully made it to the fi round of the competition out of 185 teams from around the world.

One of the team, Michael Aarons (17 years) explained how they were encouraged to take part in the competition by their school's Physics department, "We are all physics enthusiasts, and were excited by the opportunity to run our own experiment. There aren't many opportunities to enter competitions and work in such large teams, and this really was a team effort." The team entered with a proposal to study the consequences of Van Allen Belt radiation on the efficiency of satellite mounted solar cells, for which they were shortlisted. Michael is keen to inspire other physics enthusiasts to enter next year, and has the following advice for future teams, "Go with your gut and don't look at what everyone else is doing. Don't be afraid to be innovative!"

signing a proposal to utilise a particle accelerator in an innovative fashion. Now entering its fourth year International Particle Physics Outreach Group (IPPOG) to test the impovation, problem-solving and on skills of teams, with the winners g portunity to conduct an experiment for 10 days on-site at CERN in Geneva, Switzerland.



IPPOGers In The News







The **Ordre des Palmes académiques** (Order of Academic Palms) is a national order of <u>France</u> for distinguished <u>academics</u> and figures in the world of <u>culture</u> and <u>education</u>. Originally a decoration founded by <u>Emperor Napoléon</u> to honour eminent members of the <u>University of Paris</u>, it was changed into its current form as an Order on 4 October 1955 by <u>President René Coty</u>. [1]



Current Membership

	Signing Organisation	Country/Lab/Experiment	Date signed
1	NIKHEF	Netherlands	22 Sep 2016
2	DESY for KET	Germany	23 Sep 2016
3	Physics Department of University of Oslo	Norway	21 Oct 2016
4	LIP	Portugal	1 Nov 2016
5	The Section for Elementary Particle and Astroparticle Physics of the Swedish Physical Society through the Swedish LHC Consortium	Sweden	1 Nov 2016
6	CHIPP	Switzerland	4 Nov 2016
7	Ministry of Education, Science, Research and Sport	Slovak Republic	15 Nov 2016
8	Institute of Atomic Physics	Romania	17 Nov 2016
9	Helsinki Institute of Physics	Finland	29 Nov 2016
10	FWO + F.R.SFNRS	Belgium	30 Nov 2016
11	CERN	CERN	19 Dec 2016
12	INFN	Italy	21 Dec 2016
13	CNRS/IN2P3	France	23 Dec 2016
14	The Henryk Niewodniczański Institute of Nuclear Physics Polish Academy of Sciences	Poland	29 Dec 2016
15	CoEPP	Australia	14 Feb 2017
16	The University of Notre Dame on behalf of QuarkNet	USA	14 Mar 2017

New Membership

IPPOG Collaboration

Addendum No. 6



INTERNATIONAL PARTICLE PHYSICS OUTREACH GROUP

Addendum No. 6

01 November 2017

to the

First Scientific to sign Collaboration to Memorandum of Understanding (MoU) for the International

Particle Physics Outreach Group (IPPOG) Collaboration

Participation of the ATLAS Collaboration

Considering that:

IPPOG is a network of scientists, researchers, science educators, and communication specialists from across the globe, whose mission is to maximize the impact of education and outreach efforts related to particle physics and to stimulate the younger generation to pursue careers in science, technology, engineering and mathematics.

ATLAS is one of the four major experiments at the Large Hadron Collider (LHC) at CERN. It is a general-purpose particle physics experiment, run by an international collaboration, and designed to exploit the full discovery potential and the huge range of physics opportunities that the LHC provides.

IPPOG MEMBERSHIP

13

Done in 2 originals and signed by the undersigned authorised representatives:

For the ATLAS Collaboration

Spokesperson

Date and Place: 01. 11. 2. 47

For the IPPOG Collaboration

Hans Peter Beck

IPPOG Chairperson

Date and Place: Q1.11, 2017 CERIO

IPPOG Chairperson

Date and Place: Ol. 11. 2017

01 November 2017

Page 1/4



Candidates

Candidate Membership expires 18 Dec 2018

- Countries
 - Austria, Bulgaria, Czech Republic, Denmark, Greece, Ireland, Israel, Spain, South Africa, UK
- Scientific Collaborations
 - ALICE, CMS, LHCb, TOTEM
- Labs
 - DESY (as a lab)



Expressions of Interest

Brazil

- Marcelo Gameiro Munhoz, Universidade de São Paulo, Brazil, member of ALICE collaboration and member of Education Committee of the Brazilian Physics Society
- Ready to sign MoU and Addendum.

Belle II

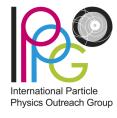
- Toru lijima and Zdenek Dolezal joined IPPOG meeting at CERN in November 2016.
- Ready to sign MoU and Addendum.

Turkey

 Bilge Demirkos is coordinating and running Masterclasses in Turkey, and is interested to make Turkey a Member in IPPOG.

GSI/FAIR

 Yiota Foka active in ALICE Masterclass program, and is interested to have GSI/FAIR join IPPOG.



New Representatives

BULGARIA



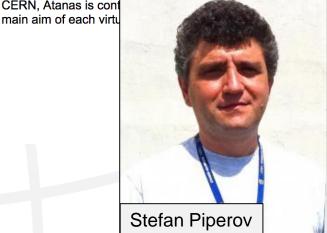
Atanas Ivanov Batinkov Software engineer European Organization for Nuclear Research CERN, Geneva, Switzerland University of Sofia, Sofia, Bulgaria Atanas.Batinkov@cern.ch

Atanas' interests, experience, and skills coincide highly effective in the domain of IT - starting from embedded software to parallel programming. Although his primary degree is in Computer Science and Technologies he believes that continued application of constantly evolving science drives the change in technology. Thus, accompanied by his curious nature and encouraged to follow his desire of exploring and developing in a real scientific environment, Atanas joined CERN as a DQM Engineers for the CMS experiment in 2012. Three years later he remained associated to the CMS experiment but took on a new adventure as a software engineer with the Level 1 muon Trigger group.

Atanas is currently pursuing his Master's degree in Nuclear Physics from the Faculty of Physics at the Sofia University in Bulgaria. He has proven track record

as devoted multidiscip lernal contributor for CERN, Atanas is conf

sits' initiative.The science learning.





New Representatives

SWITZERLAND



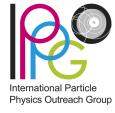
Katharina Müller Senior Physicist Physik-Institut, University of Zurich, Winterthurerstr. 190, 8057 Zurich, Switzerland kmueller@physik.uzh.ch

More Information: http://www.physik.uzh.ch/~kmueller

Katharina is a senior scientist at the University of Zurich working on the LHCb experiment at the Large Hadron Collider at CERN. She studied physics at the University of Zurich and received her PhD with a measurement of the proton structure function at the H1 experiment at the electron-proton collider HERA. Her current research interests are measurements with electroweak bosons or prompt photons as well as central exclusive production and diffraction with the LHCb experiment. All these processes probe the structure of the proton and are complementary to the measurements by the ATLAS and CMS experiments. Katharina teaches master and undergraduate courses at the University of Zurich and is advisor for physics students. Since 2015 she is also working for the Science Lab of the University of Zurich that offers courses for schools at the university in order to promote MINT (mathematics, informatics, natural sciences, and technics) areas in education.

Katharina takes an active part in several outreach activities at the University of Zurich, such as Scientifica, a scientific outreach event for the general public in Zurich, information days for high school students, visits of the laboratories of the institute as well as education days for teachers. She is involved in the organisation of the IPPOG masterclasses in Zurich and offers courses in physics at the Science Lab for school classes coming to the university – among them a course in particle physics. "I really enjoy working with young students, it is very motivating and gives immediate feedback."

Katharina is Switzerland's representative to IPPOG since 2017.



New Representatives

UNITED KINGDOM



Darren Price
STFC Ernest Rutherford Fellow and Senior Research Fellow
School of Physics and Astronomy University of Manchester Oxford Road
Manchester M13 9PL, UK
Darren.Price@cern.ch

Darren Price is currently an STFC Ernest Rutherford Fellow in the experimental particle physics group at the University of Manchester.

Following a degree in Mathematics from the University of Cambridge, he started his career in particle physics research working on the SuperNEMO experiment in Manchester, and obtained his PhD from Lancaster University working on the ATLAS experiment.

After a post-doctoral fellowship at Indiana University, where he worked on both the ATLAS experiment at CERN and the DZero experiment at the Fermi National Accelerator Laboratory, Darren obtained an EU-funded Marie Curie fellowship which brought him back to Europe.

His research spans study of quantum chromodynamics and heavy flavour physics, Vector Boson Fusion, and searches for dark matter and other invisible phenomena at the LHC.

Darren is currently exploring how to maximise the re-interpretability of data from experimental searches for new phenomena at the LHC, both to enhance the future potential of the data and enable its use for scientific research by the public.

Darren is a UK STEM Ambassador, and regularly contributes to a wide range of public engagement activities such as hands-on masterclasses, museum exhibitions, lectures, interviews, teacher-training events, science fairs and festivals.

Darren has co-led the annual one-day Manchester Particle Physics Masterclass since 2013, which has a typical cohort of 200 school students.

Darren is an advocate for widening participation, engaging with minority groups and those with low science capital.

"Particle physics offers us a great opportunity to capture the public's imagination, encourage curiosity, share our vision that science is for everyone, and inspire and educate the next generation of scientists and engineers."

Darren became the UK's representative to IPPOG in 2017.



Thank You



Pete Watkins has been a very active member of IPPOG since ???? and continues to participate in several working groups and steering groups. His contributions have been crucial and greatly appreciated!



Thank You



Jiri Rames has been representing the Czech Republic since the very beginning of EPPOG and has made many important contributions. He will be replaced by **Vladimir Pleskac.**



Exhibits Working Group

Chair

Catia Peduto

Members

Barbora Gulejova, CERN, Panagiotis Charitos, CERN (FCC), Marge Bardeen, Fermilab, Celso Martinez, Spain, Pedro Abreu, Portugal, Christine Kourkoumelis, Greece, Beatrice Bressan, TOTEM, Natascha Hoermann, Austria, Panja Luukka, Finnland, Angelos Alexopoulos, CMS, Nicolas Tracas, Greece

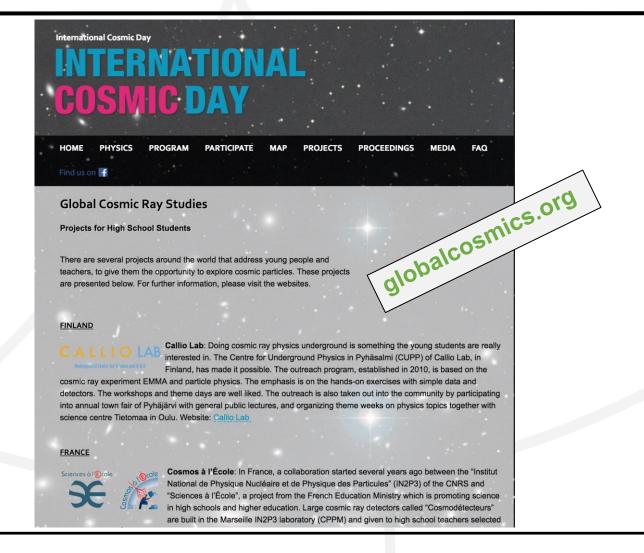


Mandate

"Gather best practice of exhibits from the IPPOG countries with all their useful information and put them in the IPPOG resources database."



Global Cosmics Working Group





Particles4U Competition



The IPPOG Particles4U Competition



Particles4U

Particles4U is a competition for young students and teachers, sponsored by the European Physical Society (EPS), and organised by the International Particle Physics Outreach Crupu (IPPOG). We at IPPOG are scientists, communicators, and educators engaged in particle physics outreach around the world. But, sometimes, we need the help of experts, and that is where you come in...



Particles4U Competition

The Challenge

If you are a student or teacher in primary or secondary school with a passion for particle physics, then we have a challenge for you. Create an educational, fun, and inspiring tool showcasing how elementary particles are present in our everyday lives. This could

be an object, prototype, lesson plan, activity, game, experiment, or even a work of art. Use your creativity! Just make sure to include an educational aspect - something that will get the message across that science is a fundamental part of our lives.

Eligible Participants

There are two categories: one for primary level students (age 12 and under) and their teachers, and one for secondary level students (age 13 and up) and their teachers. Individuals, groups, classrooms, and even groups of classrooms from anywhere in the world are welcome to participate. This includes aspiring artists, musicians, and writers, as well as math and science wizards. Your goal is to teach the rest of the world how particle physics is everywhere and how it affects our lives in many ways.

The Awards

The top two teams in each category will win:

- A visit from an IPPOG particle physicist, who will present the latest research in the field and answer your questions (in your local language whenever possible);
- · A special gift from CERN and an award certificate for each individual, in recognition of their achievement;
- · A genuine working particle detector for each winning classroom, for measuring cosmic ray muons.

How to Apply

Please complete the application form by 7 January 2018 including the following:

- · A written description of your creative contribution, including its goals and intended audience;
- Images and/or Video which can help us to better understand its usage and capabilities;
- · Any other supporting material that you think is relevant.

ABOUT

We look forward to seeing your creative ideas!

Contact Us

HOME

For any questions or help with your project, please contact the IPPOG team at ippog.info@cern.ch

MEMBERS

RESOURCES Activities

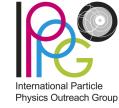
Programs & Events Media

Professional Development & Coaching

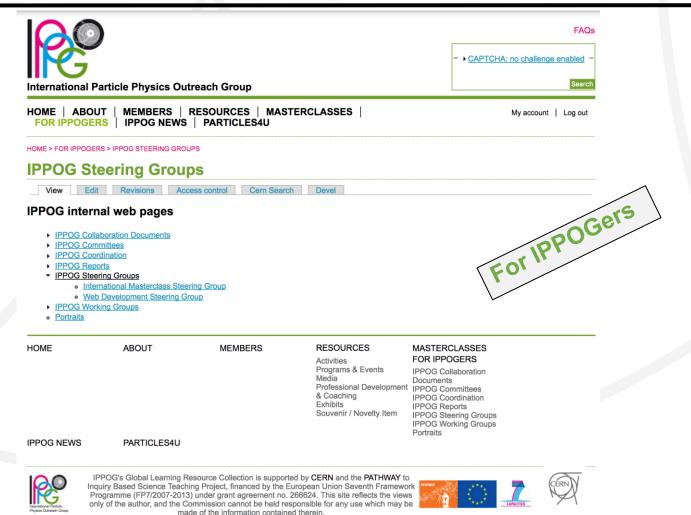
Exhibits
Souvenir / Novelty Item

MASTERCLASSES IPPOG NEWS PARTICLES4U





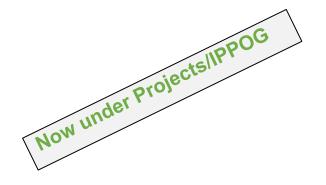
Internal Web Pages





Indico Categories

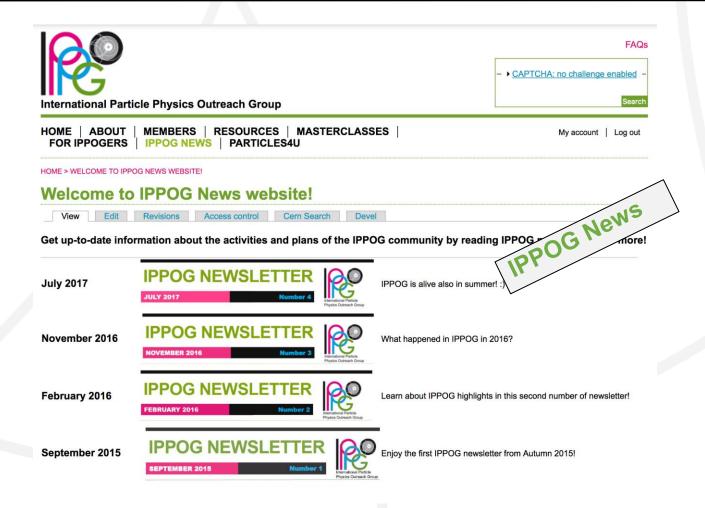




Collaboration Meetings	37 events	m
Collaboration Board	2 events	m
Coordination Team	1 event	m
Advisory Boards	1 event	m
Working Groups	empty	m
Steering Groups	empty	mile
Activities	1 event	



News Letters





Communication

Needed: Social Media Coordinator

- Communication Strategy
- Policy for Supporting IPPOG Events, Communication
- Planning and Development of Content
- Coordination of announcements, sharing, etc.



Communication

Public Web Pages and Resource Database

- Assembled Steering Group
 - S. Boutas (CERN Webmaster), M. Lapka, P. Watkins, B. Gulejova, H.P. Beck, S. Goldfarb (chair)
- Preparing Specifications
 - Drupal 8
 - Compliance with CERN Support
 - Including Infrastructure for Resource Database, Global Cosmics, International Masterclasses
- Call for Tender Follows Completion of Specifications



Communication

Public Web Pages and Resource Database

- Unexpected Help from HST Program
 - Curation of Resource Database Content (the assignment)
 - Proposed structure of pages for teachers / students (extra credit)







Working Group Reports

Explaining Particle Physics Hot Topics to a Lay Audience

Conveners: Dirk Ryckbosch, Thomas Naumann

Bringing Masterclasses to New Countries

Conveners: Uta Bilow, Ken Cecire

Global Cosmic Rays

Conveners: Marge Bardeen, Charles Timmermans



Discussion Panels

Exhibitions and Event Highlights (Sascha Mehlhase)

• This time we propose to focus the discussion on how to handle conferences like ECSITE etc.

Broadening the physics scope of Masterclasses (Rasmus Mackeprang)

 Participants of this panel will be challenged to expand the scope of Masterclasses to cover new physics topics, experiments, and/or laboratories.

IPPOG and gravitational waves (Nicolas Arnaud)

 Gravitational waves are back in the spotlight, thanks to the recent Physics Nobel Prize. Panelists are asked to consider the role of IPPOG in the outreach of gravitational waves physics.

Beauty and Physics (Ivan Melo)

 Thanks to IPPOGer Ivan Melo, there has been an interesting electronic discussion on "Beauty and Physics", subject of the article Ivan published. Let's discuss this beautiful topic face to face.



Saturday Discussions & Votes

Full Membership

Next Meeting Venue

Collaboration Board

- New Members
 - Brazil, Belle II
- Budget 2018
- Annual Fees 2018
- Creation of IPPOG Finance Advisory and Auditing Board (IFAAB)

