

# Report

## on the 8<sup>th</sup> Congress in Vienna

20-02-2018 to 24-02-2018

*Helmuth Mayr*  
(WFPPhC-President)

### (1) The Venue

The Congress activities took place in the rooms of the Austrian Educational Competence Centre Physics (AECC) of the University of Vienna. The landlord of these rooms, Prof. Martin Hopf, allowed us to use the seminar room and we are very much obliged to him for that.

We could enjoy the meals in restaurants within walking distance and stayed at a hotel also within walking distance of the AECC.

### (2) Wednesday, February 21<sup>st</sup> - Morning

After enjoying breakfast at the hotel we walked to the AECC. At 09:00, the president, Helmuth Mayr, opened the Congress, thanked everybody for coming, some from very distant nations, gave some local instructions and opened the academic part with a speech about his experiences as trainer and teacher of talented students. He included some general background information concerning typical characteristics of those students.



After that, keynote speaker No-1, Elisabeth Bögl from the Salzburg based Austrian Research and Support Centre for the Gifted and Talented, reported on "Gifted Education in Austria and relevant Studies with regard Competition and Olympiads". One of her very important points was the presentation of results of various studies regarding Olympiads.

Then a coffee break was served in a room nearby, and after that keynote speaker No2, Eleonore Steigberger from the so-called Popperschule in Vienna, gave a lecture about "Popperschule – gifted Education". She described the school's philosophy of personalised learning, including important statements about acceleration, enrichment and grouping within the school's framework. She was assisted by a colleague, Josef Pürmayr from the Popperschule, giving more detailed information on science learning in this special school.



“Competitions of the Young German Physics Society” was the next lecture, given by Hannes Vogel from Germany. He gave a review on conferences of pupils where they can try scientific practice by presenting their own works.



Martin Plesch from Slovakia, president of the International Young Physicists Tournament, gave an insight into “IYPT: From student competition to real science”.



He described a very special situation, where due to special circumstances a “normal” problem became a very special one published as an article in Nature Scientific Reports Journal.

### (3) Wednesday, February 21<sup>st</sup> - Afternoon

After lunch Péter Vankó from Hungary told us about the “Eötvös Competition”, founded in 1894, and the influence of this competition on the education of Hungarian gifted students, including insights into the role of this competition for International Physics Olympiads and the inspiration has given to the European Physics Olympiad.



“Bridging the Gap – Supportive measures for students in the German Physics Olympiad” was the next speech, given by Stefan Petersen from Germany. He pointed out that the German Physics Olympiad is not only a selection system for top students concerning International Competitions, but also a “bridge” between secondary school physics and the mastery of physics.



After a nice coffee break, Sandu Golcea from Romania gave the talk “How large is the term gifted education”, pointing different necessities in different countries very clearly.

The last speech of this day was given by Jan Mostowski from Poland with the title:

“Selected problems from Polish Physics Olympiad”. He described this Olympiad in detail and gave an insight into problems of physics education on high school level for average students and for the gifted, stressing the role of competitions.



## (4) Thursday, February 22<sup>nd</sup> - Morning



This morning started with a lecture of Marianne Korner from Austria with the title “Is Cross-Age Peer Tutoring a Useful Approach to the Preparation of Students for the Physics Olympiad?” (One can read about this topic in the News Letter 2/2017). She introduced this method in detail and discussed the potential benefit of the students’ training for International Physics Olympiads, giving some examples of this method of teaching.

The next point was the workshop “Some Interesting Experiments Used on YPT” given by Paul Pshenichka from Ukraine. He described the behaviour of a ping-pong-ball in a water- or air-stream and gave explanations about Bernoulli equation and Karman Carpets in this matter, enriched by samples from nature, e.g. the size of clouds.



After coffee break Paul Stanley from the USA held a workshop with the title: “Four low cost experimental exercises for an introductory physics course”. He explained that with very simple materials, like paper plates and a piece of woollen textile, one can get good insights into basic electrical phenomena. By using metal plates and water he consolidated these insights, which were probably astonishing to students.

The last workshop of this morning was given by Mihkel Heidelberg from Estonia: “Experimental problems in high level competitions (IPhO, GPhO, EUPhO)”. Among others brought some sets of an experimental problems, consisting a string, fastened within a metal U-profile with some electronic parts. With this system one can investigate the behaviour of a moving string. In addition, it was possible to buy this equipment.



## (5) Thursday, February 22<sup>nd</sup> – Afternoon

This time we got lunch packets and entered a tour bus, taking us to some important sights of Vienna (outside the old city), e.g. the castle “Schönbrunn” and the so-called “Oberes Belvedere”. There was a very friendly tour guide explaining lots of details of the history of the sights. After that, we were taken to the so-called “Riesenrad” (= giant wheel), where we enjoyed a ride and had a phantastic view over the town from a height of 65 m. The excursion ended in a restaurant inside the city where we enjoyed a tasty dinner.

## (6) Friday, February 23<sup>rd</sup> – Morning

The first talk of this day was given by Karel Kolář from the Czech Republic with the name: “Overview of Physics Competitions in the Czech Republic with emphasis on those organised by Charles University”. He described the wide range of physics competitions in his country, competitions for both individuals and teams as well, including multidisciplinary competitions.

After that Jaan Kalda from Estonia spoke about “The role of European and International Physics Olympiads in shaping the educational path of students”. He gave an overview of the first European Physics Olympiad, of the last Nordic Baltic Physics Olympiad and some information on the Gulf Physics Olympiad. He argued that conceptually challenging problems encourage students to choose physics for their undergraduate studies.



The next lecture was given by Josef Pürmayr from “Popperschule” in Vienna/Austria and two of his students. They gave a report on the so-called “Project Tumbleweed”. The core of this project is to create a wind-driven probe, moving on the surface of the planet Mars. This construction has to measure a lot of properties of Mars while “tumbling” over its surface. There was an international competition about such a construction. They won the European youth space contest with their construction, tested in the desert of Oman.

Both students talked about their personal experiences of learning physics at the very special Popperschule, which gave very interesting insights how students feel when being taught in an extraordinary way.

After an enjoyable coffee break with interesting private discussions, as always, the next speaker was Shirish Pathare from India with his lecture: “Indian National Olympiad Program and its contribution to undergraduate education”. He gave an overview of the development over the last 20 years and pointed out the role of different useful problems for the gifted students, the teachers, and the system as a whole.



The next speaker was Lambe Barandovski from Macedonia. His speech was titled: “Six decades of physics competitions in Macedonia – challenges and perspectives”. He pointed out the important role of competitions for highly talented primary and secondary school students and gave an insight into the function who is responsible for them and where the money comes from. We heard that these competitions started in 1957.

After that Paul Pshenichka from Ukraine gave a lecture about: “Student’s personal growth during the participation in physics competitions”. On the one hand he described the different competitions running in Ukraine and on the other he reported on the students’ generated passion for science, based on them.



## (7) Friday, February 23<sup>rd</sup> – Afternoon

After a tasty lunch there was the workshop: “My favourite problem in a physics competition”, open to everyone. A huge number of participants reported on several problems, useful for beginners up to very experienced students, stressing theoretical problems and experimental ones, as well.

During the following poster session, we got insights into different fields of educating physics for very interested and gifted secondary students.

This was the end of the academic program.

After the last coffee break of this Congress there was the WFPhC-meeting. The president welcomed all participants, published a list of all members of the Executive Committee on the screen and reported about activities of the bank concerning “money washing”, due to EU-rules.

After that some details about the News-Letters and the articles published with it were discussed. All people present are asked to hand in an article about their presentation. The next point was the report of the treasurer, Ingibjörg Haraldsdóttir from Iceland. This report was accepted with no additional questions.

Then Lambe Barandovski from Macedonia offered to host the next Congress in Macedonia and agreed to act as local organizer. This offer was gratefully acknowledged. The president thanked all participants for their contribution and attendance.

The last point of the Congress was the presentation of the WFPPhC-Award. The president presented the list of the Award Committee and pointed out, that this committee was totally free in its decisions. Then he gave floor to the head of this committee, Sandu Golcea from Romania.

Sandu Golcea gave a laudation by mentioning the highlights of the person, being awardee this year, and pointed out that the committee had unanimously agreed to give the 2018-award the WFPPhC-president Helmuth Mayr.



*left to right: Paul Stanley-USA, Helmuth Mayr-Austria,  
Sandu Golcea-Romania, Victor Paunescu-Romania*

Helmuth Mayr was deeply moved and pointed out that it was an enormous honour to him to be put in a row with all the other honourable winners of this award.

A very tasty dinner in a restaurant in the city of Vienna was something like the closing ceremony of this great Congress.