A Short History of the World Federation of National Mathematics Competitions

(In connection with the 25th anniversary of the organization)

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1   The World of Mathematics Competitions

A mathematics competition for primary school students was held in Bucharest, Romania, as early as 1885[1]. There were 70 participants and eleven prizes, awarded to two girls and nine boys. One cannot completely rule out the possibility that similar competitions were held elsewhere even before 1885. Nevertheless, the Eötvös competition in Hungary (held in 1894) is widely credited as the forerunner of contemporary mathematics (and physics) competitions for secondary school students. The competitors were given four hours to solve three problems (no interaction with other students or teachers was allowed). The problems in the Eötvös competition were designed to check creativity and mathematical thinking, not just acquired technical skills. In particular, the students were asked to provide a proof of a statement. The Eötvös competition model is now widely spread and still dominates a large portion of competition scene.

The year 1894 is notable also for the birth of the famous math journal *KöMal* (an acronym of the Hungarian name of the journal, which translates to "High School Mathematics and Physics Journal"). It was founded by Dániel Arany, a high school teacher in Györ, Hungary. The journal was essential in the preparation of students and teachers for competitions. Readers were asked to send solutions to problems published in the journal. As noted by G.Berzsenyi[2], about 120–150 problems were published in *KöMal* each year. The response was

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[1]Berinde, V., Romania—The Native Country of International Mathematical Olympiads. A brief history of Romanian Mathematical Society. CUB PRESS 22, 2004.

[2]Century 2 of *KöMal*, ed. by Vera Oláh (editor), G.Berzsenyi, E. Fried and K. Fried (assoc. editors)) OOK-PRESS, Veszprém, Hungary.

impressive: about 2500–3000 solutions were received yearly. The best solutions and the names of their authors were published in following issues of the journal. This type of year-round competition helped many young people discover and develop their mathematical abilities. Many of them later became world-famous scientists (for more information in this direction, see the Web-pages of *KöMal*[3]).

About the same time, similar development occurred in Romania. The first issue of the monthly *Gazeta Matematică* was published in September 1895. The journal organized a competition for school students, which improved in format over the years and eventually gave birth to the very effective contemporary national system of competitions in Romania. Soon other countries started to organize mathematics competitions. In 1934, a Mathematical Olympiad (with this name) was organized in Leningrad, USSR (now St. Petersburg).

To compete means to compare your abilities with the abilities of others. The broader the base of comparison, the better. This seems to be the motivation for the natural transition from school competitions to town competitions, to national and finally, to international competitions. In 1959 the flagship of mathematics competitions, the International Mathematics Olympiad (IMO), was born. It took place in Romania with participants from seven countries: Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania, and the Soviet Union (USSR). The second IMO (1960) was organized by Romania as well, but since then it has been hosted by a different country every year (except 1980, when no IMO was held). Over the years, the participation grew dramatically: the 2008 IMO in Spain gathered 537 competitors from 99 countries. Similar was the participation in IMO in Vietnam, 2007: 94 countries with 526 school students. Nowadays this is the most prestigious mathematics competition. Directly or indirectly, it influences all other enrichment activities in mathematics. With its high standards, the IMO prompts the participating countries to constantly improve their educational systems and their methods for selecting and preparing students. This, over the years, yielded a great variety of competitions and mathematical enrichment activities around the world. There are "Inclusive" (open for all) competitions which are intended for

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[3]http://www.komal.hu/info/bemutatkozas.e.shtml

students of average abilities, while "exclusive" (by invitation only) events target talented students. There are "multiple-choice" competitions where each problem is supplied with several answers, from which the competitor has to find the correct one. In contrast, "classical style" competitions (like the IMO) require the students to present arguments (proofs) in written form. In "correspondence" competitions, such as those organized by journals *KöMal* and *Gazeta Matematică* or the contemporary "Tournament of Towns", the students do not necessarily meet each other, while in "presence" competitions the participants are working on the solution of problems in the presence of other competitors. There are even mixed-style competitions, with a presence-style first stage and correspondence-style subsequent stages. The majority of competitions are "individual", what counts finally is the score of the individual participant. There are many competitions however where the result of the whole team is what matters. Competitions may differ also by participants' age (for primary school students, for secondary school students, for students in colleges and/or universities) as well as by participants' affiliation: from one school, from several schools or from all the schools in a town, nation wide competitions, international competitions, etc. Nevertheless, there are many other competitions or competition-like events which completely "escape" such "classification attempts" and essentially enrich the variety of measures oriented toward identification, motivation and development of mathematical talent worldwide.

The world of mathematics competitions today embraces millions of students, teachers, research mathematicians, educators, publishers, parents, etc. Hundreds of competitions and competition-like events with national, regional, and international importance are organized every year. A remarkable international cooperation and collaboration gradually emerged in this field. How the system works could be seen from the following story. The Australian Mathematics Competition[4] (AMC) was started in 1978 with the intention to transfer to Australian soil the positive impact of Canadian Mathematics Competition[5]. However, soon the AMC reached half a million participants. It became much larger than the Canadian Mathematics Competition. In turn, the European

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[4]http://www.amt.edu.au/amcfact.html
[5]http://cemc.uwaterloo.ca

competition "Kangaurou des Mathématique"[6] (modelled, as the name suggests, after the AMC), which started in 1991, started in 1991 and in 2009 had more than five million students from different countries participating.

It would not be an exaggeration to say that the rise and development of Mathematics Competitions is among the characteristic phenomena of the 20th century. The World Federation of National Mathematics Competitions (WFNMC) was a natural response to the need of international collaboration in this area. It is also a tool to enhance this international collaboration.

2   WFNMC in dates

The World Federation of National Mathematics Competitions was founded in 1984 through the inspiration of Professor Peter O'Halloran (1931–1994) from Australia. The Fifth International Congress on Mathematical Education (ICME 5), held in that year in Adelaide, Australia, had a section on Mathematics Competitions. At one of the sessions of this section, chaired by Peter O'Halloran, the creation of an international organization related to Mathematics Competitions was discussed. The response was very positive. A Committee was elected with the mandate to develop the Federation. Peter O'Halloran became the founding President of the Federation. Here is what Ron Dunkley (one of the Presidents of WFNMC after Peter O'Halloran) wrote in Bulletin No 40[7] of ICMI (the International Commission on Mathematical Instruction) about the first days of the Federation: "*...While others assisted in the formation, it was the vision and leadership of Professor Peter O'Halloran of Canberra, Australia, that led directly to the Federation's being*". Professor Peter James Taylor, another Past President of WFNMC, wrote in ICMI Bulletin No 49[8]: "*The founder of WFNMC was Peter O'Halloran, who was President until his death in 1994. He conceived the idea of such an organization in which mathematicians from different countries could compare their experiences and hopefully improve their activities as a result.*" Peter O'Halloran's

[6]http://www.mathkang.org/
[7]http://www.mathunion.org/ICMI/bulletin/40/WFNMC-Report.html
[8]http://www.mathunion.org/ICMI/bulletin/49/Report_WFNMC.html

own reflection on the early days of the Federation is summarized in his "From the President" article in the Journal *Mathematics Competition*[9] : "*In the early 1980s as Executive Director of the Australian Mathematics Competition, I was constantly receiving requests for information and guidance in organizing mathematics competitions from all parts of the world and, in particular, developing countries. I realized that there was a need for an international organization to exchange ideas and information on mathematics competitions as well as to give encouragement to those mathematicians and teachers who are involved with the competitions. Consequently my colleagues in Canberra and my friends at Waterloo and Nebraska launched the Federation at ICME 5 in Adelaide, Australia, in 1984.*"

A significant part of what are now the major activities of the Federation were initiated by Professor O'Halloran himself or during his Presidency. He felt the importance of communications and, in 1985, the publication of *Newsletter of WFNMC* was started. From 1988 it became a journal and got the name *Mathematics Competitions*. During his Presidency the Federation started its own series of Conferences which are conducted every four years (just in the middle between two consecutive ICMEs). The first Conference took place in Waterloo, Canada, from August 16th to August 21st, 1990. It was organized by Ronald Garth Dunkley and his colleagues from the Canadian Mathematics Competition Committee. The next conferences were in:

– Bulgaria (July 23–28 ,1994), organized by Petar S. Kenderov and his colleagues from the Union of Bulgarian Mathematicians and the International Foundation "St. St. Cyril and Methodius";

– Zhong Shan, P. R. China (July 22–27, 1998), with Qiu Zonghu as Chairman, assisted by Pak-Hong Cheung, Andy Liu and Wen-Hsien Sun;

– Melbourne, Australia (August 4–11, 2002), with Peter Taylor as principal organizer assisted by Warren Atkins, Sally Bakker and John Dowsey;

– Cambridge, England (July 22–28, 2006), with Tony Gardiner, Adam McBride, Bill Richardson and Howard Groves as principal organizers.

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[9] *Mathematics Competition*, Vol.3 No. 2, December 1990, Page 2

The next one is to take place in Riga, Latvia, in 2010.

The regular meetings of the Federation during ICMEs (Budapest 1988, Quebec 1992, Seville 1996, Tokyo 2000, Copenhagen 2004, Monterrey 2008) also contribute significantly to the well-being of the organization. In particular, this is the time when the so called "Business meetings" of the Federation are conducted at which organizational issues are discussed and Federation officers for the next 4-year period are determined.

During the Presidency of Peter O'Halloran, the Awards of the Federation were established—"David Hilbert Award" (1990) and "Paul Erdös Award" (1991). The awards are intended to recognize people with significant contributions and achievements in developing Mathematical Competitions and Mathematical Enrichment Programs in general.

In 1992 a *World Compendium of Mathematics Competitions* was published containing information about 230 mathematics competitions around the world. Also since 1992 WFNMC has been "under the umbrella" of the Australian Mathematics Trust (AMT). The support of AMT is of greatest importance for the existence of the Federation.

Further important impulse for the activities of WFNMC and a recognition for what it does for mathematics education came in 1994 when, upon the initiative of Peter O'Halloran, the Federation became the forth Affiliated Study Group of ICMI.

At the "Business meeting" of the Federation during the Conference in Bulgaria in 1994 it was decided that Professor Blagovest Sendov from the Bulgarian Academy of Sciences would inherit the Presidency of WFNMC from Peter O'Halloran in 1996. Soon after the conference, Peter O'Halloran realized he had severe health problems. Before his death on 25 September 1994, Peter O'Halloran passed the leadership to Blagovest Sendov. However, the circumstances in Bulgaria required that Sendov enter the political life. He was elected in the National Parliament and became its Chairman. In early 1996 he resigned from the Federation's Presidency. The latter was passed to Ron Dunkley from the University of Waterloo, Canada, who had been Vice-President of the Federation since its inception. Under his leadership a Constitution[10]

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[10]http://www.olympiad.org/wfnmccon96.html

of WFNMC was approved during ICME-8 in Seville, Spain. Ron Dunkley was President of WFNMC till 2000. At ICMI-9 in Tokyo, Japan, Professor Peter Taylor was elected President of WFNMC. Under his guidance a "Policy Document: Competitions and Mathematics Education"[11] was adopted on August 10th, 2002, at the Federation's business meeting in Melbourne, Australia. Peter Taylor initiated also an amendment of the Constitution of WFNMC which limited the presidential term to four years. It was adopted at the administrative meeting of WFNMC during ICME-10 in Copenhagen, 2004. At the same meeting Professor Petar S. Kenderov from the Institute of Mathematics and Informatics, Bulgarian Academy of Sciences, was elected President of WFNMC. Another amendment of the Constitution was adopted at the administrative meeting during ICME-11 in Monterrey, Mexico. At that meeting María Falk de Losada from Antonio Narino University, Bogota, Colombia, was elected President of the Federation for the term 2008–2012.

3   Goals of WFNMC

The name of the Federation leaves the impression that its major goals are related to competitions only. To some extent, this may have been the case in the earlier stages of development of the Federation when, for example, on page 2 of Vol. 1, No 1, of the journal *Mathematics Competitions* one can find the statement: "*The foundation members of the Federation hope that it will provide a focal point for people interested in, and concerned with, running national mathematics competitions; that it will become a resource centre for exchanging information and ideas on national competitions; and that it will create and cement professional links between mathematicians around the world.*"

In later issues of the *Mathematics Competitions* (again on the beginning pages) one can trace the evolution of the vision for Federation's goals toward improving mathematics education in general. The official viewpoint is now expressed in the preamble of the Federation's Constitution[12]: "*The World Federation of National Mathematics Competitions is a voluntary organization, created through the inspiration of Professor*

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[11]http://www.olympiad.org/wfnmcpol02.html
[12]http://www.olympiad.org/wfnmccon04.html

Peter O'Halloran of Australia, that aims to promote excellence in mathematics education and to provide those persons interested in promoting mathematics education through mathematics contests an opportunity of meeting and exchanging information."

Further, in Article 3 of the Constitution we see:

"*The aims of the Federation are:*
(i)   *to promote excellence in, and research associated with, mathematics education through the use of school mathematics competitions;*

(ii)   *to promote meetings and conferences where persons interested in mathematics contests can exchange and develop ideas for use in their countries;*

(iii) *to provide opportunities for the exchanging of information in mathematics education through published material, notably through the Journal of the Federation;*

(iv)   *to recognize through the WFNMC Awards system, persons who have made notable contributions to mathematics education through mathematical challenge around the world;*

(v)   *to organize assistance provided by countries with developed systems for competitions in countries attempting to develop competitions;*

(vi)   *to promote mathematics and to encourage young mathematicians.*"

The wider viewpoint on the goals of the Federation is outlined also in the Policy Statement[13] mentioned above: "*The scope of activities of interest to the WFNMC, although centered on competitions for students of all levels (primary, secondary and tertiary), is much broader than the competitions themselves. The WFNMC aims to provide a vehicle for educators to exchange information on a number of activities related to mathematics and mathematics learning. These activities include*
 –   *Mathematical competitions of various kinds*

 –   *Mathematical aspects of problem creation and solution, a dynamic branch of mathematics.*

 –   *Research in mathematics education related or pertaining to competitions or the other types of activities listed here.*

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[13]http://www.olympiad.org/wfnmcpol02.html

– *Enrichment courses and activities in mathematics.*

– *Mathematics Clubs or "Circles".*

– *Mathematics Days.*

– *Mathematics Camps, including live-in programs in which students solve open-ended or research-style problems over a period of days.*

– *Publication of Journals for students and teachers containing problem sections, book reviews, review articles on historic and contemporary issues in mathematics.*

– *Support for teachers who desire and/or require extra resources in dealing with talented students.*

– *Support for teachers, schools, regions and countries who desire to develop local, regional and national competitions.*

With qualification, WFNMC also facilitates communication through its Journal and Conferences, in the following areas

– *Topics in informatics parallel to those in mathematics. This applies particularly in that no equivalent body exists for informatics. It takes into account that the disciplines are closely related, that many journals cover both topics, and that in many countries the organisation of competitions in mathematics and informatics, and mathematics and informatics themselves, are closely related.*

– *Recreational mathematics, including mathematical puzzles, particularly as they might inspire the creation of mathematics problems.*

WFNMC is concerned with activities particularly when they have international significance or are significant within their own country."

Further information about the role of competitions for mathematics education, for attracting talent to science, for educational institutions and for the whole society, is contained in a paper presented at one of the sessions of Section 19 ("*Mathematics Education and Popularization of Mathematics*") at the International Congress of Mathematicians in Madrid, 2006[14].

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[14]Petar S. Kenderov, Proceedings of the International Congress of Mathematicians, Madrid, Spain, 2006, p.1583–1598

4 The Essence and the Role of WFNMC

Like any other event with positive social impact, each competition or competition-like event generates a group of people dedicated to it. The group consists of team trainers, problem creators, organizers, and other people involved. Taken together, this group maintains and gives the shape of the event. It determines the current status and the future development of the event. This joint obligation (to keep the event floating) serves as a cohesive factor that gradually transforms the group (of sometimes potential rivals) into a vibrant network where collaboration prevails over rivalry. Such networks have a great "value-added" effect. Learning from others becomes a major source for improvement of own work. Unlike electrical networks in physics, where energy is conserved and where nodes with higher potential lose part of their potential to nodes with lower potential, mathematics competition networks tend to increase the potential of all the "nodes" involved and increase the "energy" in the group. Typical examples of such networks are those associated with the following competitions:

– the IMO,

– Le Kangourou Sans Frontières [www.mathkang.org],

– the Australian Mathematics Competition,

– the International Mathematics Tournament of Towns[15],

– the Ibero-American Mathematics Olympiad[16],

– the Asian-Pacific Mathematics Olympiad[17],

The list is far too long to enumerate all networks that deserve to be mentioned here.

A good mathematics competition journal also creates such a network, which comprises the editorial board, the editors, the frequent authors, and readers. Famous examples are these journals:

– *Kvant* (Russia)[18],

– *Crux Mathematicorum* (Canada)[19],

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[15]http://www.amt.edu.au/imtot.html

[16]http://www.oei.es/oim/index.html

[17]http://www.math.ca/Competitions/APMO/

[18]http://kvant.info/

[19]http://journals.cms.math.ca/CRUX/

 – *Mathematics Magazine* (USA)[20],
 – *Mathematical Gazette* (UK)[21].

The countless other forms of mathematics enrichment also create networks. All these networks operate autonomously and independently from each other though many of the problems they face are similar in nature. Advancements in one network are not easily transferred to other networks. This is where the role of WFNMC is clearly seen:

 – to facilitate communication among the different networks,

 – to identify common problems faced by different networks,

 – to provide a proper framework for discussion of those problems,

 – to help newcomers join one (or more) of the networks.

As a matter of fact, some competition networks are connected to each other because they have common members (people who belong to two or more networks). Such people are of special interest to WFNMC because they, on one hand, know the situation in some networks and, on the other, can directly realize the goals of the Federation in the respective networks. Through them, the role of the Federation becomes feasible. Therefore, the essence of WFNMC is a "Global Network of Networks" which we further refer to as "Competitions Network" though it does not only include competitions.

This global Competitions Network resembles existing networks in other mathematical areas, such as Algebra, Geometry, Analysis, Differential Equations, Numerical Methods, etc. In fact, the Competitions Network covers the classical mathematical area known under the (somewhat misleading) name "Elementary Mathematics". Like other networks, this one operates and lives through its journals, conferences, workshops and e-mail. Periodical regularity of mathematics competition however adds to the strength and vitality of mathematics competitions networks since people meet more often. Unlike other networks which are engaged mainly with research, the Competitions Network also facilitates the dissemination of best practices in curriculum development and in the

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[20]http://www.mathematicsmagazine.com/
[21]http://www.m-a.org.uk/resources/periodicals/the_mathematical_gazette /index.html

work with talented youngsters. New problem-solving techniques, new classes of problems, and new ideas about organizing competitions spread quickly around the world. We should not forget also that, through this global network, the Elementary Mathematics (which constitutes an important part of our mathematical heritage) is preserved, kept alive and further developed.

Since WFNMC is an Affiliated Study Group of ICMI which, in turn, is a Commission of the International Mathematical Union, the Competitions Network behind WFNMC is integrated into the global mathematical community.

The WFNMC provides also a framework and a fruitful environment for the discussion of important issues related to mathematics education, to the work with higher ability students and, last but not least, to its own future.

5 Structure and Activities of WFNMC

The structure of the Federation as well as its current activities have evolved as a result of a long and gradual development which, in some aspects reached its steady state. According to the Constitution (as amended in 2008), the **Executive Committee** of the Federation consist of: President, three Vice-Presidents (one of whom is a Senior Vice-President), Secretary, Immediate Past President (chairing the Awards Committee), Publication Officer (Editor of *Mathematics Competitions*) and Treasurer. There are also three Standing Committees: **The Program Committee** (responsible for the development of programs for Federation conferences and chaired by the Senior Vice-President), the **Awards Committee** (receives and assesses nominations for Federation awards, chaired usually by the Past President), the **Committee of Regional Representatives** (responsible for the implementation of Federation programs in the various regions of the world; currently there are regional representatives from Africa, Asia, Europe, North America, Oceania and South America). The names of the people currently occupying the mentioned positions (for the term 2008–2012) as well as a

lot of other information related to WFNMC can be seen in the website of the Federation[22].

The major activities through which the Federation achieves its goals are:
– Publication of *Mathematics Competitions* Journal;
– Conducting Conferences and Meetings during ICMEs;
– Presentation of Federation Awards;
– Participation in projects initiated and supported by other organizations.

The Journal. Since its very beginning (as *Newsletter of WFNMC*), *Mathematics Competitions*[23] journal has been playing a special role in the life of the Federation. It publishes materials concerning all aspects of competitions and other related activities: problem-solving, problem creation, pieces of interesting mathematics, know-how on organizing competitions, statistical studies on competition results, gender issues, etc. This way it disseminates new and fruitful ideas coming from different parts of the world.

The journal also records the life of the Federation. It is published by the Australian Mathematics Trust (AMT) on behalf of WFNMC. AMT also delivers the Journal free of charge to people from countries that cannot afford a subscription of the Journal. Warren Atkins was Editor of this Journal from its beginning (1985) till the business meeting of WFNMC during ICME 10 in Copenhagen (2004) where, upon his request, the role of Editor of *Mathematics Competitions* was passed to Jaroslav Švrcek from Palacký University in Olomouc, Czech Republic. Over the years the Editor of the Journal was helped in his work by different persons. Here is an (incomplete) list of names: George Berzsenyi, Heather Sommariva, Richard Bollard, Andrei Storozhev, Gareth Griffith, Bruce Henry.

Conferences and Meetings. An irreplaceable role for the Federation is played by its conferences and the meetings during ICMEs. Both events allow the membership of the Federation to meet every two years. The conferences of the Federation have a special flavor. For instance, there are sessions devoted to problem-solving, problem setting and

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[22]http://www.amt.edu.au/wfnmc.html
[23]http://www.amt.edu.au/wfnmc.html

problem improvement where participants work together. Participants are frequently asked to share a favourite problem. Conferences are accompanied by real competitions, sometimes involving the conference participants as well. Among key-note speakers at those Conferences one meets the names of: Paul Erdös, John Conway, Ben Green, Robin Wilson, Kaye Stacey, Anne Street, Jozsef Pelikan, Alexander Soifer, Maria Falk de Losada, André and Jean-Christophe Deledicq, Andy Liu, Simon Singh and many others. In this connection again the special role of the Australian Mathematics Trust should be underlined. Due to its support, persons from non-affluent countries were able to participate in the conferences of the Federation.

Federation's Awards. The Federation has created two international awards – David Hilbert Award and Paul Erdös Award. Both awards are to recognize the contribution of people toward development of mathematics competitions and mathematics enrichment activities in their own countries or internationally. The awards are named after the famous mathematicians David Hilbert and Paul Erdös whose work was a challenge and inspiration for generations of mathematicians. Since 1996 the Hilbert Award has not been awarded. The two awards have been merged and now the Federation has only the Paul Erdös Award. Every two years up to three persons receive this award upon decision of the Federation Executive Committee based on the Awards Committee recommendations. Listed below are the names of the Federation's Awards recipients.

David Hilbert Award:

1991: Arthur Engel (Germany), Edward Barbeau (Canada), Graham Pollard (Australia);

1992: Martin Gardner (USA), Murray Klamkin (Canada), Marcin E. Kuczma (Poland);

1994: Maria Falk de Losada (Colombia), Peter Joseph O'Halloran (Australia);

1996: Andy Liu (Canada).

Paul Erdös Award:

1992: Luis Davidson (Cuba), Nikolay Konstantinov (Russia), John Webb (South Africa);

1994: Ronald Garth Dunkley (Canada), Walter Mientka (USA), Urgengtserengiin Sanjmyatav (Mongolia), Jordan Tabov (Bulgaria), Peter James Taylor (Australia), Qiu Zonghu (P. R. China);

1996: George Berzsenyi (USA), Tony Gardiner (UK), Derek Holton (New Zealand);

1998: Agnis Andzans (Latvia), Wolfgang Engel (Germany), Mark Saul (USA);

2000: Francisco Bellot Rosado (Spain), Istvan Reiman (Hungary), János Surányi (Hungary);

2002: Bogoljub Marinkovic (Yugoslavia), Harold Braun Reiter (USA), Wen-Hsien Sun (Taiwan);

2004: Warren Atkins (Australia), André Deledicq (France), Patricia Fauring (Argentina);

2006: Simon Chua (Philippines), Ali Rejali (Iran), Alexander Soifer (USA);

2008: Shian Leou (Taiwan), Hans-Dietrich Gronau (Germany), Bruce Henry (Australia).

Participation in other organizations' projects

Typical examples are mentioned here in order to illustrate what is meant.

Members of WFNMC are engaged in organizing and conducting various discussion or topic study groups of ICMEs devoted to the role of competitions in mathematics education. The reference[24] is a good example.

The Federation was a key player in the ICMI Study 16 *Challenging Mathematics in and beyond the classroom*[25]. It was finalized in 2009 and

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[24]http://www.amt.edu.au/icme10dg16.html
[25]http://www.amt.edu.au/icmis16.html

the results are published in *New ICMI Study Series*, Vol. 12, Barbeau, Edward J.; Taylor, Peter J. (Eds.), 2009, V, 325 p. 5 illus., ISBN: 978-0-387-09602-5. The progress of the work is reflected in the reference[26].

Several members of WFNMC participated in the development of Project *MATHEU*[27], which was carried out with the support of the European Community within the framework of the Socrates Programme. The outcomes of *MATHEU* Project are oriented toward the creation of a challenging environment which students of higher ability in European schools will be identified, motivated and supported.

6 People involved with WFNMC

Here are the names of the persons who had duties (as officers) with WFNMC:

Presidents of WFNMC

Peter Joseph O'Halloran (Australia), Blagovest Sendov (Bulgaria), Ronald Garth Dunkley (Canada), Peter James Taylor (Australia), Petar Stoyanov Kenderov (Bulgaria), María Falk de Losada (Colombia).

Vice-Presidents

Ronald Garth Dunkley (Canada), Walter Mientka (USA), Pierre-Olivier Legrand (French Polynesia), Matti Lehtinen (Finland), Petar Stoyanov Kenderov (Bulgaria), Anthony David Gardiner (UK), Maria Falk de Losada (Colombia), Peter Crippin (Canada), Alexander Soifer (USA), Robert Geretschläger (Austria), Ali Rejali (Iran).

Secretaries of WFNMC

Sally Bakker (Australia), Sandra Britton (Australia), Alexander Soifer (USA), Kiril Bankov (Bulgaria)

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[26]http://www.springer.com/education/mathematics+education/book/978-0-387-09602-5

[27]http://www.matheu.org/

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