



2017

ANNUAL REPORTS

BELGIAN NATIONAL SCIENTIFIC COMMITTEES



Académie royale des Sciences, des Lettres
et des Beaux-Arts de Belgique



Koninklijke Vlaamse Academie van België
voor Wetenschappen en Kunsten

RASAB vzw/asbl

The Royal Academies for Science and the Arts of Belgium - RASAB vzw/asbl

BELGIAN NATIONAL SCIENTIFIC COMMITTEES
ANNUAL REPORTS 2017

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INTRODUCTION

The National Scientific Committees' missions are the promotion and coordination of various scientific disciplines in Belgium, mainly seen in an international context. The creation of a national committee is subject to the existence of an international scientific union affiliated to ICSU or a scientific body of ICSU (scientific committees, special committees, etc.) concerning the same scientific discipline.

The National Scientific Committees work under the patronage of the *Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique*¹ and the *Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten*², gathered in RASAB.

The committees are subject to regulations adopted by the Belgian Academies of Sciences and Arts.

The list of the members of the Belgian Scientific Committees can be found on RASAB's website: www.rasab.be.

¹ www.academieroyale.be

² www.kvab.be

NATIONAL COMMITTEE FOR ANTARCTIC RESEARCH

INTERNATIONAL UNION: SCIENTIFIC COMMITTEE ON ANTARCTIC RESEARCH (SCAR)

1. Introduction, mission, goals

The BNCAR is the official representing body of Belgium within SCAR (Scientific Committee on Antarctic Research). This implies that BNCAR members participate, when appointed, to the bi-annual meetings of SCAR as national delegate(s) or member(s) of one of the 3 SCAR Standing Scientific Groups (Geosciences, Life Sciences and Physical Sciences) or of other SCAR Standing Committees (e.g. Antarctic Geographic Information). They also contribute to the inter-sessional activities of these Scientific Standing Groups. BNCAR contributes to establish the Belgian annual report to SCAR and responds to particular information requests from SCAR. It also gives advice or responds on matters raised within international bodies such as the ATCM (Antarctic Treaty Consultative Meeting) and its CEP (Committee for Environmental Protection), CCAMLR (Convention for the Conservation of Antarctic Marine Resources), CCAS (Convention for the Conservation of Antarctic Seals), EPB (European Polar Board). Finally, BNCAR has as mission to promote (Belgian) Polar Science at an international level.

2. Meetings of the Committee

[a] Meeting of 8 June 2017 (Palace of the Academies)

The meeting was organized along a discussion on science and science prospects at the Princess Elisabeth Station, Antarctica. For this purpose, BNCAR invited two externals, Mr. Rachid Touzani (director of the Polar Secretariat) and Ms. Maaïke Vancauwenberghe (science administrator at BELSPO). Mr Touzani did not participate in the meeting as he was no longer director of the Polar Secretariat at the time the meeting took place. As a result of the exchange with BNCAR members, BNCAR wrote a letter to the Secretary of State Ms. Zuhair Demir to urge the instalment of a scientific committee in the new structure around the Princess Elisabeth station, as agreed upon in the Pax Antarctica between the International Polar Foundation (IPF) and the Federal Government. Our request has been taken into account, and according to the proposal, BNCAR will play a leading role in the establishment of a scientific committee.

During the meeting, the instalment of an ASPA (Antarctic Specially Protected Areas) in the vicinity of the Princess Elisabeth station is foreseen.

[b] Meeting of 6 November 2017 (Palace of the Academies)

It was proposed to upgrade the BNCAR website with a Polar research blog to increase the visibility of Belgian Polar research (both Arctic and Antarctic). A test case for the Antarctic field season has been made and will be subsequently evaluated. A further discussion on the scientific committee within the new Polar Institute was held. It was clear that foreign experts need to be part of the commission. One BNCAR member (ex officio) would become advisory member on the Board. Belgian representatives for the next Scientific Union (SCAR POLAR 2018) were assigned during the meeting (see more below).

3. General Assembly of the Scientific Union

There was no General Assembly in 2017. The next assembly will be held in June 2018 in Davos³.

4. Other activities

The XIIth SCAR (Scientific Committee of Antarctic Research) Biology Symposium was hosted in Belgium in July 2017. A. Van de Putte and B. Danis (members/associate members of BNCAR) were the co-chairs of the local organizing committee of this international and highly valued symposium. The main theme for the XIIth SCAR Biology Symposium was *Scale matters*. From the small molecular scale, through population and large ecosystem scale, biological processes and diversity span all these levels.

Understanding these processes as well past and present patterns of biodiversity are essential for understanding possible threats to Antarctic biology and their impact. The aim of this symposium is to focus on understanding biological distribution and trends as well as adaptation and processes both in the marine and terrestrial realm, including the human biology. The symposium was held in Leuven, Belgium from 10th to 14th July 2017.

5. Future perspectives

The next SCAR Open Science Conference will be held in Davos (Switzerland) in 2018. Given the proximity of the event, BNCAR has urged members to make attendance as large as possible, which was very well followed-up. BNCAR is involved in the organization of several side meetings and many members will attend the Open Science Conference. The SCAR delegate will be F. Pattyn

³ www.polar2018.org

and B. Delille (vice-chair) the alternate delegate. The representation in the different standing groups is the following:

- SC-ADM: A. Van de Putte;
- SC-AGI: J.Y. Pirlot;
- Physical sciences: J.L. Tison and H. Goosse;
- Geosciences: P. Huybrechts and N. Bergeot;
- ISMASS: F. Pattyn.

NATIONAL COMMITTEE FOR ASTRONOMY

INTERNATIONAL UNION: INTERNATIONAL ASTRONOMICAL UNION (IAU)

1. Introduction, mission, goals

The formal basic goal of the committee is to coordinate the participation of Belgian astronomers in the activities of the International Astronomical Union (IAU), and in the triennial IAU General Assembly in particular. The committee also serves a role in the dissemination within the Belgian community of developments within other international organisations to which our country participates, such as ESA, ESO, and the journal *Astronomy and Astrophysics*. Finally, the meetings also offer opportunities to react together on matters affecting various astronomical activities in Belgium among which access to new research facilities and public outreach.

2. Meetings of the Committee

The Committee gathered three times in 2017: on 11 January, 27 June, and 30 November. In addition, it also had a joint meeting with the BNEC (National ESO Committee) on 11 March. All these meetings took place at the Palace of the Royal Academies for Science and the Arts of Belgium (RASAB) in Brussels. Recurrent topics of discussion during these meetings were ESO matters, ESA matters, the Astronomy & Astrophysics Board, and the ARIES telescopes under construction in India, which are addressed in the sections below.

3. General Assembly of the Scientific Union

No General Assembly in 2017. The next one is planned in Vienna in 2018.

4. Other activities

[a] UAI matters

A. Lemaître who, as president of the IAU Division A, is our representative at the IAU Executive Committee, reported this year that the astronomical union distributed their first PhD prizes, but that due to a thight schedule there was no Belgian candidate in any division. She urged the committee members to promote these prizes in our institutes. A call for IAU memberships was issued in October. This year, the call was open for regular and for junior memberships. The creation of the latter category should become official at the next IAU general assembly (GA) in

2018. Junior memberships are made for scientists with a PhD, active in astronomy, and who don't fulfil the criteria to become regular members yet. These memberships need to be confirmed every year by the national committee, and should not last more than 6 years. Six applications were received (4 regulars and 2 juniors), and will be reviewed during our next meeting in January 2018.

[b] ESO matters

ESO matters were reported to the BNCA by C. Waelkens (Scientific member of the ESO council). Among the topics that were discussed this year:

- The construction of the Extremely Large Telescope (ELT) has started on 26 May 2017 with the "First Stone Setting". The project is on track within the constraints of the "Phase 1" option, which among other savings implies a primary mirror (M1) without its inner rings. In order to add these central rings at a realistic cost, a decision is needed before 2019, and consequently additional funding needs to be secured by then, through other partners.
- About other possible partners, on 11 July, an arrangement was signed to begin a ten-year strategic partnership between ESO and Australia to give Australian astronomers access to ESO's current research infrastructure. Promising discussions are under way towards accession of other European countries, e.g. Norway.
- The southern array of the Cherenkov Telescope Array will be installed at road level on the ESO concession at Paranal.

[c] ESA matters

ESA matters were reported to the BNCA by W. Verschueren (Belgian representative at the ESA Science Programme Committee, BELSPO).

At ESA's ministerial council the budget for science programme was reduced, leading to a budget loss of about 260 MEUR over the period 2017-2035. A replanning was performed, resulting in the removal of one M mission call in this period.

At the Science Programme Committee (SPC) meetings in June and November, the following decisions were taken:

- adoption of the PLATO mission, which now is in the construction phase B2/C/D with Belgian participation by CSL (Centre Spatial de Liège), KULeuven, and ULiège.
- selection of the LISA L3-mission, now in phase A with contributions from KULeuven, and CSL.

- participation to XARM (X-ray Astronomy Recovery Mission), the Japanese successor of the failed ASTRO-H mission. ULiège could be a contributor.
- participation to the Proba3 mission. ESA will fund the Science Operations Centre (SOC) of the coronagraph at ROB. The development of the LaRa radio science instrument led by ROB continues, while the one of the EXOMARS 2020 mission continues on a very tight schedule. For budgetary reasons, the selection of one M4 mission was postponed and will take place in the SPC meeting of February 2018, while the selection of 2-3 M5 missions (for phase A) is postponed till after the selection of the M4.

[d] Astronomy and Astrophysics (A & A)

Matters related to A&A were reported by R. Van der Linden, our Belgian delegate in the A&A Board. The last board meeting was held in Sofia on April 21, 2017. From the main topics that were addressed it comes out that:

- EDP was selected after the new call for tender launched in March 2017. It will now propose a higher financial return (share-over) to the Journal.
- Norway became formally an A&A member, while Armenia's request to join was approved.
- About three percent of the submitted papers in 2016 were Belgian. Roughly eighty-six percent of the papers were accepted, with an average acceptance time of 93 days, while the average time of publication after acceptance was 46 days. There were about 1850 papers published last year.
- A&A will celebrate its 50th anniversary in 2018 in Vienna at the IAU General Assembly.

[e] ARIES telescopes

J. Surdej regularly reported on the construction and follow-up of the ARIES telescopes.

- The first two calls for observing time on the ARIES DOT telescope were launched. A total of 22 (30) proposals was received during the first (second) call among which 3 (1) were from Belgian teams. Available instruments were the infrared camera and the direct imager in the visible.
- The D-FOSC spectrograph and imager are expected to start their science exploitation in 2018.

[d] A&A FNRS contact group meeting

R. Alvarez organized at the Planetarium of the ROB the FNRS A&A contact group meeting on September 19, 2017. Forty-eight participants attended the meeting, 11 talks and 9 posters have been presented.

5. Future perspectives

Preparations have started towards the creation of an Interfederal Space Agency of Belgium (ISAB). It will take over (and extend) the responsibilities of the current Space Department of BELSPO which will cease to exist.

NATIONAL COMMITTEE BELQUA (QUATERNARY RESEARCH)

INTERNATIONAL UNION: INTERNATIONAL UNION FOR QUATERNARY SCIENCE (INQUA)

1. Introduction, missions, goals

BELQUA is the Belgian contact for INQUA, the International Union for Quaternary Science. The purpose of BELQUA is to support and increase the visibility of Belgian research on various aspects of the Quaternary period, either conducted in Belgium or by Belgian scientists abroad. BELQUA also aims to encourage young researchers and to promote scientific communication. It covers all research fields related to Quaternary science.

2. Meetings of the Committee

[a] Meeting of 10/3/2017 in Brussels

The BELQUA meeting in March 2017 was organized during the lunch break of the BELQUA yearly workshop (see below). The organization of the workshop was evaluated.

The main achievements and conclusions were as follows:

- The organization of a training course for PhD and MSc students on *Quaternary dating techniques and its potentials and pitfalls*, which was proposed during the fall meeting in 2016, was further discussed. A brainstorming session resulted in a provisional list of potential lecturers. The course will consist of traditional lectures followed by hands-on training courses for a number of specific topics. A poster and flash presentation of two minutes for the PhD and post doc students could also be organised.
- Dr. Thierry Camelbeeck announced that he would prefer to resign from the BELQUA NC, because he is already involved in other national committees and believes younger scientists in the field of quaternary research in Belgium can actively contribute to BELQUA by becoming a member. Out of a number of potential candidates to replace Dr. Camelbeeck, Dr. Olivier Dewitte (RMCA Tervuren) was proposed as a new member. Dr. Dewitte is a geomorphologist and will be asked to send his CV prior to the election during the fall meeting of the NC.

[b] Meeting of 28/11/2017 in Brussels

- Dr. Olivier Dewitte was anonymously and unanimously elected to become a new French speaking BELQUA NC member.
- Two new French speaking candidates were proposed to become a NC member, namely Veerle Rots and Mathieu Boudin. They were pre-selected out of a list of nine potential candidates.
- The organisation of the training course on *Quaternary dating techniques and its potentials and pitfalls* was further discussed. Veerle Vanacker will organise the workshop and present a provisional program during the next NC meeting.
- The format and content of a book compiled and edited by the members of the BELQUA NC on the Quaternary in Belgium was discussed. Gert Verstraeten will compile a provisional table of contents, which will be discussed during the next meeting of the NC. The targetted readership of the book will be the general public with a background in geomorphology, Ba and MSc students, school teachers, and readers with a general interest in landscape evolution and their effects on vegetation dynamics (e.g., biologists).

3. General Assembly of the Scientific Union

There was no general assembly of INQUA in 2017. The next general assembly will be organised in 2019 in Dublin (Ireland). Information from INQUA (e.g. the Newsletter, and the table of contents of its journal *Quaternary International*) are distributed via the BELQUA e-mail list.

4. Other activities[a] BELQUA annual workshop on 10/03/2017

The BELQUA workshop of 10 March 2017 was a one-day event in Brussels. Nathalie Fagel (ULg) and Elie Verleyen (UGent) organized and convened the workshop. About 20 people attended the meeting. Dr. Christophe Colin (Laboratoire GEOsciences Paris-Sud, CNRS-Université de Paris-Sud, Université Paris-Saclay) was invited as a key-note speaker on the topic *ENd from deep-sea sediments and seawater and their implications for North Atlantic intermediate and deep-water water hydrology at different times scales*. His lecture was programmed after the lunch break. In addition to the key-note lecture, abstracts were received for 5 oral presentations, covering a wide range of topics and disciplines.

5. Future perspectives

[a] Annual BELQUA workshop

The BELQUA 2018 workshop will be organised by Vanessa Heyvaert and Elie Verleyen on the 16th of March. The workshop will be open to all scientists interested in Quaternary research and will provide young scientists, including advanced MSc students, PhDs, and post-docs the opportunity to present their work. The invited lecture will be given by Prof. Dirk Verschuren (UGent) on the recent results obtained within the ICDP project 'DeepChalla' he is coordinating.

[b] First BELQUA training course

A one or two day BELQUA training course regarding *Quaternary dating techniques and its potentials and pitfalls* will be organised in the fall of 2018. The targetted audience are PhD and MSc students. The course will be linked with the doctoral schools programs in the different universities. More practical issues will be discussed during the spring meeting in 2018.

NATIONAL COMMITTEE FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

INTERNATIONAL UNION: INTERNATIONAL UNION OF BIOCHEMISTRY AND MOLECULAR BIOLOGY (IUBMB)

1. Introduction, mission, goals

The goal of the National Committee is to promote research in the field of Biochemistry and Molecular Biology, by organizing meetings and inviting outstanding internationally renowned scientists. Because of the increasingly interdisciplinary nature of the biological sciences, often symposia are organized together with other societies and other National Committees.

Because of the common goals, the members of the National Committee on Biochemistry and Molecular Biology are also member of the board of the Belgian Society of Biochemistry and Molecular Biology and as such are actively involved in the preparation and organization of all the activities of this Society and of the National Committee.

2. Meetings of the committee

The National Committee organizes its meetings together with the board of the Belgian Society for Biochemistry and Molecular Biology. In 2017 the board met on the 16th of January at the UNamur (Carine Michiels) and the 13th of December in the ULB, Building J, Campus Erasme, Brussels (Jason Perret). In this meeting the overall organization, financial status, membership list of the society are reviewed as well as discussion of the organization of meetings in the coming year. Further organization and exchange of information and ideas was done by email.

3. General Assembly of the Scientific Union

No General Assembly in 2017.

4. Other activities

[a] All members of the National Committee participated in several international scientific events, either as participant or as an invited speaker. However it would be impossible to provide an extensive list of all these activities.

[b] As an elected member of the FEBS (Federation of European Biochemical Societies) Education Committee, Jason Perret was present and participated actively to the 2nd FEBS Education Ambassadors Meeting organized on 7-8th April, 2017 in Paris. He acted as well as chair of one of the workgroups (Working Group on Composing an Inventory: *Key Knowledge and Skills expected*

from a Molecular Life Sciences; Coordinators: Frank Michelangeli (U.K.) and Jason Perret (Belgium).

[c] During the FEBS 42nd International Congress held in Jerusalem September 10-14, 2017 the FEBS Education Committee's organized a congress sessions on *Biochemistry Practicals*, with a Special Session of three lectures and a discussion, closely followed by a Workshop. Both events took place on Monday 11.

Chair: Gül Güner Akdogan, Izmir, Turkey

- Opening Lecture, Bruce Alberts, San Francisco, USA
- e-Biolabs, Gus Cameron, Bristol ,UK
- Wet practicals, Frank Michelangeli, Chester, UK and Jason Perret, Bruxelles, Belgium
- General discussion

[d] Following the FEBS Congress, the FEBS 57th Council Meeting was held at the Crowne Plaza hotel, Jerusalem, 14th-15th September 2017; Jason Perret was the appointed Belgium delegate.

5. Future perspectives

Meetings for the coming year and forthcoming meetings/symposia need to be proposed and organized. During the last board meeting the need to redefine the Societies missions and services to the biochemical community were discussed to adapt to the evolution of the scientific community; these discussions are ongoing along several lines of thought.

NATIONAL COMMITTEE FOR BIOMEDICAL ENGINEERING

INTERNATIONAL UNION: INTERNATIONAL UNION FOR PHYSICAL AND ENGINEERING SCIENCES IN MEDECINE (IUPESM).

1. Introduction, missions, goals

Biomedical Engineering is the multidisciplinary field concerning Engineering research, developments and applications in (bio)medicine.

The Belgian National Committee on Biomedical Engineering aims to bring together the Belgian academics, students, researchers and professionals, active in the broad field of biomedical Engineering.

The aims of the National Committee are:

- Stimulating scientific and educational interactions
- Linking with international organizations and societies
- Representation of the Belgian academic point of view
- Setting up a forum for interested students and professionals.

2. Meetings of the committee

Dates: The Committee met on: February 7th, June 28th, October 10th, November 23rd, December 1st.

Main conclusions:

- Continuing efforts for a yearly Contact Forum in the Academies
- Involving young scientists and professionals, alumni of our master programs Biomedical Engineering
- Streamlining communications (updated informative website)
- Increasing attention to Medical device Technology and entrepreneurship
- Contacts with industry: mostly via the association MedTech Flanders and beMedTech
- Continuing liaison efforts with European, world-wide associations
- Need for continuing efforts in promoting research and development and an awareness of the community of the social impact of the BME field.
- Encouraging a shift of Biomedical Engineering teaching topics into the bachelor

programs in engineering

- In 2018 we should pay attention to the alumni who became the first “biomedical engineers” in Belgium, some 20 years ago.

3. General Assembly of the Scientific Union

The International Union IUPESM will hold its General Assembly in June 2018 during the World Congress on Biomedical Engineering and Medical Physics in Prague (June 7th – 13th 2018), during which event the Federation's officers are elected.

4. Other activities

[a] Belgian Day on Biomedical Engineering (December 1st, 2017)

Contact Forum with 5 invited speakers, a poster session presenting new research results and prizes for 3 posters by young researchers; This year's theme: *Advances in Medical Imaging*.

Goals:

- Bring Belgian researchers in contact with internationally recognized speaker and allow Belgian researchers to present their work in a short presentation and posters (Belgian Day).

Attendance:

- 220 persons attended this Contact Forum: 17th National Day on Biomedical Engineering on December 1st 2017, of which 158 students, 45 PhD students, 6 post-docs, 16 professors, others: professionals in the field.

[b] Collaboration with beMedTech

Thanks to the collaboration with beMedTech, an evaluation of the complete biomedical engineering sectoral presence: in education, in research, and in the professional context has been continued. MedTechFlanders was founded in July 2015 and enlarged membership of start-ups and scale-ups in medical device industry (25 companies).

[c] Liaison with worldwide societies/activities

- Contacts between the National Committee, the World Federation IFMBE, the Union (IUPESM) and ICSU/ISC via Marc Nyssen.
- Contacts between the National Committee and EAMBES (European level umbrella organisation) via Jos Vander Sloten.

- Contacts between the National Committee and MedTech Flanders via Pascal Verdonck.
- Contact between the National Committee and beMedTech, the professional umbrella association, with industry members of the biomedical sector via Pascal Verdonck
- Contact between the National Committee and IEEE-EMBS (the IEEE Engineering in Medicine and Biology Society) and its Benelux chapter via Sabine Van Huffel.

5. Future perspectives

[a] The committee aims at expanding the involvement of students and of captains of industry in the Committee's future activities.

[b] New members of the committee are proposed and integrated: Liesbeth Geeris (Ulg) (replacing Jean Delbeke, retired)

[c] As there are now 5 “master in biomedical engineering” programs (UGent/VUB, KUL, ULB, UCL, Ulg), the Committee aims to become the meeting place for communication between these programs (also for Phd's linked to the masters), in order to strive to a full recognition of the title “Master in biomedical engineering”. Therefore, a special meeting was organized on November 23rd.

[d] Keeping in contact with the alumni. A “Youngsters Board” was set up successfully in 2010 and was fully operational since 2011 and renewed in 2015, 2016 and again in 2017. The youngsters group is consisting of:

- Gerlinde Logghe, coordination
- Annette Caenen
- Vincent Van Eeghem, finances
- Markos & Dries (KUL), companies
- Fan Xiao Ya (ULB), practical arrangements
- Florian Salmen (UCL), PR & IT
- Varun Manhas (ULG), registrations & invoices

6. Clarification of abbreviations

- IFMBE: International Federation for Biomedical Engineering: the “World Federation”
- IUPESM “International Union for Physics and Engineering Sciences in Medicine”, the UNION of which the IFMBE is 1 of the 2 components.

- EAMBES: European umbrella association, regrouping societies and teaching/research departments
- ESEM: European Society for Biomedical Engineering
- EAMBES: European Alliance for Medical and Biological Engineering and Science
- ICSU: International council of scientific unions (links with national Academies)
- IEEE: Institute of Electrical and Electronic Engineers
- EMBS: Engineering in Medicine and Biology Society

NATIONAL COMMITTEE FOR BIOPHYSICS

INTERNATIONAL UNION: INTERNATIONAL UNION FOR PURE AND APPLIED BIOPHYSICS (IUPAB)

1. Introduction, mission, goals

The goal of the National Committee is to promote research in the field of Biophysics, by organizing meetings and inviting outstanding internationally renowned scientists. Because of the increasingly interdisciplinary nature of the biological sciences, often symposia are organized together with other societies and National Committees. Because of the common goals, the members of the National Committee on Biophysics are also member of the board of the Belgian Biophysical Society and as such are involved in the preparation and organisation of all the activities of this Society.

2. Meetings of the Committee and the Belgian Society

- 1st of September 2017. Presentation and approval of the committee's activities and of the financial balance.
- 20th of December 2017. Finalization of the 2018's Belgian Biophysical Society program (meetings, workshops, ...).

3. General Assembly of the Scientific Union

The 19th IUPAB Congress was held in Edinburgh in July 2017.

4. Other activities

- *Pushing the boundaries of cellular and molecular imaging*
"Paleis der Academiën/Palais des Academies", Brussels, 23rd of January 2017.
- *Symposium extracellular vesicles 2017 - The future of diagnostics*
Hasselt University, 7th February 2017.
- *Workshop: DNA Mechanics and Dynamics*
KU Leuven, 10 February 2017
- *Symposium: Molecules and Membranes*
Université libre de Bruxelles, 17th of February 2017
- *Challenges and Opportunities in Protein Analytics*
Université libre de Bruxelles, 10th of March.

- 15th one-day symposium on *Protein Folding and Stability*
University of Liège, 1st of September 2017
- 1st one-day symposium on *current trends in membrane protein biophysics*
University of Namur, 1st of December

NATIONAL COMMITTEE FOR CHEMISTRY

INTERNATIONAL UNION: INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

In memoriam

Many of us will remember Guy Martens. He passed away on Feb 1st 2018 at the age of 84. He was a physical-chemist from the ULB and very proud to be. His teaching (ULB) was his heart and his career in different organization positions in Solvay an achievement. As a representative of the industry in the National Committee as Vice President, later as honorary member, his contribution was positive and innovative. Together with his wife he built up a number of high school education projects. After his wife's death, he retired from the Committee.

1. Introduction, mission, goals

As reported previously, our goals remain unchanged and in line with our strategy guidelines: reconciliate the Public and Chemistry by

- Federate the messages of chemistry (Universities, Technical Colleges, Essenscia, CEFIC, SRC, KVCV, JSC, Teachers , etc.).
- Inform the public, improve and develop the image of chemistry in Belgium in all the aspects. Be the bridgehead of IUPAC in Belgium (input and output).
- Make the promotion of chemistry and sciences to the young generations at the early age, high schools. Encourage them to study sciences and technologies.

It is obvious that these issues and concerns are shared by many ones (all) in the network of organization in Belgium.

So our wish is to be specific, and bring an efficient contribution to the common effort and our actions must be complementary to others considering our limited budgets. The Comité National de Chimie/Nationaal Comité Scheikunde team is particularly well connected with the "chemical" network in Belgium, can impact and spread our ideas and projects.

So in particular in 2017 we developed the here above item 2 and 3 by :

Being very present (as much as possible) as representative of Belgium on the international scene as the "Ambassador of Belgium in the International Union of Pure and Applied Chemistry/IUPAC" and actors in their committees.

Being a real actor in the promotion of science and encouragement of young students

It should be understood also that these policies could only be applied with a financial support.

2. Meetings of the committee

[a] Regular meetings: October, 25 2017.

[b] Project meetings: 3 meetings in the course of the year. (in collaboration with Jeunesses Scientifiques, Olympiads NI and Fr).

3. General Assembly of the Scientific Union

Rita Cornelis (Vice president National Committee) attended the General Assembly of the IUPAC at San Paolo (Brazil) July 2017⁴. She represented Belgium at the Council meeting and WCLM (World Chemistry Leadership Meeting), as President of Division VII at the IUPAC.

4. Others activities

[a] *Science in Space and on Earth* conference

Our goal: encourage students (17/18 years of age) from the younger generation to pursue graduate studies in sciences, life sciences, earth sciences and technology in all aspects and make them understand through our action how sciences are connected to a real world.

With this in mind, the National Committee Chemistry Belgium, "les Jeunesses Scientifiques de Belgique", and the Science Olympiads Organization, organize a *Science in Space and on Earth* one day gathering, at the Royal Academy of Sciences and Arts in Brussels on Saturday May 5, 2018.

We will have approximately 250 participants, both from North and South Belgium. These high-schools students are selected essentially from the finalists of the Science Olympiads Contest (Physics, Biology, Chemistry).

Our intention is to repeat the very successful previous 2016 event by inviting Dutch and French-speaking top scientists/speakers and young generation top researchers/speakers to connect them with this young audience during the talks and exchange afterwards.

⁴ See report on page 83.

We are willing to show the audience how science and technology in Belgium are the best tools for exiting jobs in real life.

Our programme of the day, 5 lectures by:

- Dr. Frank De Winne: European Space Agency
- Dr Emmanuel Jehin and Dr Michael Gillon: Institut Géophysique ULG
- Dr. David Dehenauw: Royal Meteo Institute Belgium
- Dr. Vincent Ginis: Vrije Universiteit Brussel and Harvard
- Dr. Laure Twyffels: Institut de Biologie Moléculaire Charleroi

In parallel, the participants will have a access to Xperilab at lunchtime.

The Xperilab truck, sponsored by le "Musée des Sciences Naturelles, and Solvay, crosses the country to give young people an opportunity to experience science and technology is now very popular in Belgium.

[b] International

The list of Belgian Scientist who are active in IUPAC Divisions and Committees in 2017 reads as follows:

- Paul Baekelmans *COCI Committee of Chemistry and Industry Titular Member*
- Michael Berglund *SIAM Subcommittee for Isotopic abundance measurements*
- Rita Cornelis *Division VII Chemistry and Human Health President*
- Edmond Differding *Division VII Chemistry and Human Health & COCI*
- Jan Heeres *Division VII, Subcommittee Drug Delivery ad Discovery*
- Brigitte Van Tiggelen *IUPAC 100, Chemistry & History*

Emphasizing the voluntary input of Belgian Chemists to IUPAC.

Report to the IUPAC/COCI (Committee Chemistry and Industry IUPAC) to the COCI meeting at San Paolo by Paul Baekelmans implemented in May 2017: *Health and Safety Training Programme in Solvay 2017* (two weeks in Solvay dedicated to the training of technicians from Kenya and Egypt).

Attendance at the IUPAC/COCI meeting in London, November 19, 2017: Paul Baekelmans

IUPAC-Solvay International Prize for Young Chemists. The prize rewards every year the best PhD thesis from the world! The prize is supported by Solvay. Acting as a selection committee member representing Solvay and the National Committee: Paul Baekelmans.

Preparation to the 100yrs of existence of the IUPAC at the General Assembly in Paris 2019.

5. Financing

It is more and more obvious that the commitment of the National Committee to actions such as promotion of science, sustainable chemistry, education, etc... where we are participating is requesting money.

It should be emphasized that in the year 2017 and near future, the financial contribution by a Belgian Chemical Company, Solvay is quite significant and contributes to the image of Belgium and the image of Science

This approach was definitely made possible by the close relationship the committee has with the Industry.

This statement is substantiated by the following investments and donations:

- Participation at meetings: 2,000 €
- Science in space and on Earth: 1,000 €
- Support to science in space and on earth: 8,000 € (Fonds Ernest Solvay)
- Xperilab at the Academy: for free
- Contribution to the IUPAC 100yrs: 30,000 €
- International IUPAC-Solvay Prize for Young Chemists: 20,000 €
- Health and Safety Programme: total Costs (not included allocated time) 2017: 5,500€

Total: 66,500 €. Moreover, Industry contribution (not detailed here) by Essenscia in order to promote science chemistry, to motivate the young generation is very significant.

NATIONAL COMMITTEE FOR CRYSTALLOGRAPHY

INTERNATIONAL UNION: INTERNATIONAL UNION OF CRYSTALLOGRAPHY (IUCr)

1. Introduction, mission, goals

Crystallography is the study of the atomic and molecular structure of diverse substances using microscopy and diffraction techniques in order to understand the relationship between atomic structure and properties of these materials.

The objectives of the National Committee of Crystallography are to promote cooperation in crystallography, to contribute to all aspects of crystallographic research, to catalyze the relations of crystallography to other sciences, to promote crystallography for the general public, and to represent Belgian crystallographers in international associations.

The committee has its own web site⁵, which are administered by Johan Wouters, and organizes a annual crystal growing competition for pupils at secondary schools and biannual Belgian Crystallography Symposium BCS.

2. Meetings of the Committee

[a] The first meeting took place on 15 March 2017 in Brussels (Academy Palace). During this meeting the ninth edition of the Belgian Crystallography Symposium BCS-9 organized by the National Committee of Crystallography in the Academies Palace in Brussels on 26 October 2016 has been evaluated. The program item flash presentations (12 in total) was a very interesting formula to stimulate also the audience and will be maintained in future editions. An overview of the inscriptions and preparations of the Belgian Crystal Growing Competition was given and the date of the prize awarding ceremony in the Academies Palace was fixed at 17 May 2017. During the ceremony Prof. Anne De Wit (ULB) will deliver a lecture about *Chemical gardens*. The committee has decided to maintain the new initiative 'Invite a crystallographer' also during the next school year. This lecture is also useful for a more general public (a powerpoint presentation is available). Vouchers for free lectures will be given as prize for the Belgian Crystal Growing Competition. In order to prepare the Belgian membership of the International Organization for Crystal Growth (IOCG) a small subcommittee for crystal growth has been initiated which will also start the preparations of the organization of a symposium in 2018. Finally, the Belgian representation for the Council Meeting of the European Crystallographic Association (ECA) and the General Assembly of the IUCr have been discussed.

⁵ www.sites.google.com/site/xallobe and www.iycr2014.be

[b] Some members of the Committee were present at the judging (Namur, 6 May 2017) and prize awarding ceremony (Brussels, 17 May 2017) of the Crystal Growing Competition.

[c] The second meeting in the Academy Palace in Brussels on 18 October 2017 was opened with the reports of the ECA Council Meeting and IUCr General Assembly in Hyderabad by the Belgian representative (Dominique Maes). The first preparations for the Belgian Crystallography Symposium BCS-10 (scheduled on 17 October 2018) and the preliminary timing of the 2018 edition of the Belgian Crystal Growing Competition were made. Two requests by schools in Knokke-Heist and Brussels for a lecture in the framework 'Invite a crystallographer' were handled further. As the creation of a subcommittee on crystal growth has been approved by both Sciences Classes of the Academy, an official application of membership of the International Organization for Crystal Growth will be submitted. Tom Leyssens (UCL, member of the subcommittee) has organized a meeting of the subcommittee on 6 October 2017 in Beerse to discuss future initiatives. Finally, the Committee has initiated the preparations for the elections of members in 2018.

3. General Assembly of the Scientific Union

The IUCr General Assembly took place in Hyderabad in the evenings of August 22, 23 and 26. At the three meetings Belgium was represented by Joke Hadermann and Dominique Maes. Luc Van Meervet attended the meetings as General Secretary and Treasurer of the IUCr.

The most important agenda items were:

- The applications of membership from “Albania and Kosovo”, Tunisia, Bangladesh and Singapore were approved. The membership of Chili was suspended (no payment).
- The financial situation of the Union is still fine although there were deficits in the last years. Most of the income of the Union comes from the journals (86.6%). Members were asked to publish more in the IUCr Journals.
- The Associates program was presented, i.e. a personal membership that provides some benefits like access to journals.
- The reports of the IUCr Executive Committee and IUCr commissions were presented.
- The eleventh Ewald Prize has been awarded to Professor Sir Tom Blundell for his work as one of the worldwide leaders in crystallographic innovation, especially at the interface with life sciences. The Executive Committee proposed to create a new WH and WL Bragg Prize for a young scientist in Crystallography. There was a big discussion about the rules for this prize: what is a young scientist/early career? For the next conference in Prague the Executive Committee will develop “rules” and award the prize according to these rules. The proposed rules will then be fine-tuned during the next General Assembly.

- IUCr Congress and General Assembly in 2023: two candidates, San Diego and Melbourne, have presented their bid. For San Diego, there was a big discussion on the visa application issue. With a vast majority (72.7%), Melbourne was chosen.
- Results of the election of the Executive Committee: President: Sven Lidin (Lund, Sweden), Vice president: Hanna Dabkowska (Brockhouse, Canada), General secretary and treasurer: Luc Van Meervelt (Leuven, Belgium), Immediate past president: Marvin Hackert (Austin, USA), Members: Wulf Depmeier (Kiel, Germany), Graciela Diaz de Delgado (Merida, Venezuela), Santiago Garcia- Granda (Oviedo, Spain), Radomír Kuzel (Prague, Czech Republic), Jennifer Martin (Nathan, Australia) and Masaki Takata (Tohoku, Japan). The new appointed IUCr Executive Secretary is Alex Ashcroft (Mike Dacombe has retired).
- The next General Assembly will be held during the IUCr Congress in Prague (2020).

4. Other activities

[a] The National Committee of Crystallography has organized in 2017 with support of both academies and sponsor Acros Organics a successful seventeenth edition of the Crystal Growing Competition for pupils of the secondary schools. For this edition alum has been chosen as crystallizing compound. The judging of the submitted crystals took place on 6 May 2017 in Namur. During the proclamation on 17 May 2017 in the Academies Palace in Brussels also a small number of geodes have been exposed and evaluated.

[b] Dominique Maes has represented the Committee at the Council Meetings of the European Crystallographic Association ECA in Hyderabad (28 August - 1 September 2016). Joke Hadermann is Officer of the ECA Executive Committee. Frederic Hatert is co-chair of the Special Interest Group on Mineral and Inorganic Crystallography. Yaroslav Filinchuk is secretary of the Special Interest Group on Crystallography under Extreme Conditions.

[c] Frederic Hatert and Joke Hadermann are active members of respectively the IUCr Commission Inorganic and Mineral Structures and the IUCr Commissions Aperiodic crystals and Electron Crystallography. L. Van Meervelt has participated as General Secretary and Treasurer to the meetings of the IUCr Finance Committee in Leuven and IUCr Executive Committee in Hyderabad. As councillor D. Maes has participated to the meetings of the International Organization for Crystal Growth.

[d] As a continuation of the IYCr2014 activity 'Invite a crystallographer' several (honorary) members have delivered lectures in secondary schools.

5. Future perspectives

- Organisation of the seventeenth Belgian Crystal Growing Competition in 2018 (see www.chem.kuleuven.be/bcc).
- participation by Belgian schools at the International Crystal Growing Competition.
- Organisation of the 10th Belgian Crystallography Symposium BCS-10 in Brussels (October 2018).
- Belgian membership of International Organization for Crystal Growth.

Laureates Belgian Crystal Growing Competition 2017 - Academy Palace - 17 May 2017



NATIONAL COMMITTEE FOR GEODESY AND GEOPHYSICS

INTERNATIONAL UNION: INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS (IUGG)

1. Introduction, mission, goals

The BNCGG serves as a link between IUGG and the Belgian scientists working in the fields of Geodesy and Geophysics. This activity reaches a climax every four years at the IUGG general assembly. The BNCGG is then charged to propose to the Academy the national delegates to IUGG and to its eight Associations:

- International Association of Cryospheric Sciences (IACS);
- International Association of Geodesy (IAG);
- International Association of Geomagnetism and Aeronomy (IAGA);
- International Association of Meteorology and Atmospheric Sciences (IAMAS);
- International Association of Hydrological Sciences (IAHS);
- International Association of the Physical Sciences of the Ocean (IAPSO);
- International Association of Seismology and Physics of the Earth Interior (IASPEI);
- International Association of Volcanology and Chemistry of the Earth Interior (IAVCEI).

In the meantime, the BNCGG organizes regularly conferences by known Belgian or foreign scientists.

The BNCGG tries also to encourage the participation of young scientists to the IUGG General Assemblies by attributing grants.

Belgium was among the 9 countries that established the International Union of Geodesy and Geophysics (IUGG) on July 28, 1919 in Brussels. The Belgian National Committee for Geodesy and Geophysics (BNCGG) was created shortly after in 1921. The running expenses were covered until 1950 by the National Cartographic Institute and later on by Royal Academy of Belgium, now split into the "Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten" and the "Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique".

In parallel with the BNCGG, exists since 1955 an "Association sans buts lucratifs de droit belge" called "Comité National Belge de Géodésie et de Géophysique, Bruxelles". It is charged to administrate the finances of the Committee.

2. Meetings of the Committee

The traditional annual BNCGG General Assembly has been held on January 19 in the Nicolet room of the Royal Belgian Institute for Space Aeronomy (BIRA-IASB). The introductory conference was given by Dr. Johan De Keyser, IASB-BIRA on the topic of *ESA's Rosetta comet mission: What have we learned so far?*

3. General Assembly of the Scientific Union

No General Assembly of the IUGG in 2017.

Scientific Assemblies of the IUGG Associations held during 2017

- IACS, 13-17 February 2017 Wellington, New Zealand
- IAG/IASPEI, 30 July-4 August 2017, Kobe, Japan
- IAGA/IAMAS/IAPSO, 27 August-1 September 2017 Cape Town, South Africa; R. Maggiolo (BIRA-IASB) participated to this conference as Belgian representative for IAGA.
- IAHS, 10-14 July 2017, Port Elizabeth, South Africa
- IAVCEI, 14-18 August 2017, Portland, USA

Contributions to IAVCEI 2017

Summary

- 1 Scientific session convened
- 18 abstracts (posters and oral presentations)
- 1 Award: special recognition as an Outstanding Student Presentation (Inga Tarasenko, Pierre Delmelle, Charles Biolders, Alicia Guevara - *Crusting of volcanic tephra deposits: an experimental study*. Submission 922)

Session convening

- Corentin Caudron (Université Libre de Bruxelles) et al. convened a scientific session entitled *Statistical approaches and integrated methods for improved forecasting of volcanic eruptions*.
- Matthieu Kervyn (Vrije Universiteit Brussel) et al. convened a scientific session entitled *Volcanoes and human societies*.

Abstracts

1. Benoît Smets, Nicolas d'Oreye, Matthieu Kervyn, François Kervyn - *The Nyiragongo lava lake (D.R. Congo): current state of knowledge and perspectives*. Submission 27

2. Nicolas d'Oreye, Dominique Derauw, Halldor Geirsson, Benoît Smets, Sergey Samsonov, Julien Barrière, Adrien Oth, Nicolas Theys, Celestin Kassereka, Ludibvine Libert, Adriano Nobile, François Kervyn – *Recent activity in Nyiragongo active crater, Democratic Republic of Congo – remote sensing and in-situ measurements*. Submission 312
3. Audray Delcamp, Hannes Mattsson, Lucia Gurioli, Christian Bircher, Engelbert Sakoma, Lore Steyaert, Houria Belkus, Matthieu Kervyn - *Towards an understanding of the North Tanzanian maar crater formation from a cross-disciplinary perspective*. Submission 328
4. Florian Barette, Caroline Michellier, Sophie Mossoux, Sam Poppe, Benoît Smets, Eléonore Wolff, François Kervyn, Matthieu Keryvn - *Assessing lava flow risk at Nyiragongo volcano, DR Congo. Part 2: Lava flow hazard map*. Submission 413
5. Julien Barrière, Adrien Oth, Nicolas d'Oreye, Nicolas Theys, Jeffrey Johnson, François Kervyn – *Monitoring volcano seismicity, infrasound and SO₂ degassing patterns in the Virunga Volcanic Province, Democratic Republic of the Congo*. Submission 501
6. Antoine Dille, Sam Poppe, Sophie Mossoux, Hamidi Soulé, Matthieu Kervyn - *Small scale lahars at Karthala volcano: comparing probabilistic Q-LavHA and LAHARZ simulations*. Submission 798
7. Christelle Wauthier, Benoît Smets, Andy Hooper, François Kervyn, Nicolas d'Oreye - *Steady-rate and longterm ground deformation associated with dry gas vents in the Lake Kivu area* - Submission 1099
8. Sam Poppe, Olivier Galland, Nico Buls, Gert Van Gompel, Eoghan Holohan, Matthias Rosenau, Régis Mourgues, Matthieu Kervyn - *An unusual patient: 4D X-ray Computed Tomography of analogue magma intrusion experiments*. Submission 179
9. Engielle Mae Paguican, Matthieu Kervyn - *Quantitative analogue modelling of volcano landscape evolution in response to tectonics and erosion*. Submission 377
10. Adrien Oth, Julien Barrière, Nicolas Bakundukize, Georges Mavonga, Josue Subira, Niche Mashagiro, Benjamin Kafudu, Silvanos Fiama, Gilles Celli, Jean de Dieu Bigirande, Alain Joseph Ntenge, Laurent Habonimana, Charles Bakundukize, François Kervyn - *KivuSNet: A broadband seismic network for the Lake Kivu & Virunga Volcanic Region, Democratic Republic of the Congo*. Submission 310
11. Adriano Nobile, Nicolas d'Oreye, Benoît Smets, Halldor Geirsson, Francois Kervyn de Meerendre – *Deep and Shallow Magma Plumbing system interactions at Nyamulagira volcano, Central Africa, revealed by high temporal resolution InSAR time series and GPS*. Submission 580
12. Inga Tarasenko, Pierre Delmelle, Charles Biielders, Alicia Guevara - *Crusting of volcanic tephra deposits: an experimental study*. Submission 922

13. Hazel Rymer, Glyn Williams-Jones, John Murray, Pierre Delmelle, Kerry Reid, Guillermo Caravantes-Gonzalez - *Precursors to the current activity at Masaya volcano, Nicaragua*. Submission 841
14. Alain Bernard, Edgardo Villacorte, Katharine Maussen, Raymond Maximo, Corentin Caudron, Ma. Antonia Bornas - *Carbon dioxide in Taal volcanic lake: a simple gasometer open to the atmosphere*. Submission 748
15. Ma. Antonia Bornas, Danikko John Rivera, Robjunelieaaa Lim, Renato Solidum, Alain Bernard - *Reconstructing the 1754 eruption of Taal Volcano, Philippines: First results from deposit stratigraphy, particle analysis and geochemistry*. Submission 491
16. Katharine Maussen, Edgardo U. Villacorte, Raymond Patrick R. Maximo, Ma. Antonia V. Bornas, Alain Bernard - *Geochemical evidence for magmatic intrusions at Taal Volcano, Philippines Taal volcano*. Submission 305
17. Raymond Patrick Maximo, Alain Bernard, Katharine Maussen, Ryan Rebadulla, Ericson Bariso, Deborah Fernandez - *Insights into the magmatic-hydrothermal activity using major and trace elements and isotopic values of thermal spring waters from active volcanoes in the Philippines*. Submission 333
18. Micah Angeli Sayco, Maurizio Battaglia, Alain Bernard, Ma. Antonia Bornas, Edgardo Villacorte, Renato Solidum - *Insights on Recent Ground Deformation of Taal Volcano based on continuous GPS Measurements*. Submission 715
19. Corentin Caudron, Tárсило Girona – *Towards forecasting phreatic eruptions using volcano-seismic tremor*. Submission 625
20. Raphael De Plaen, Corentin Caudron, Thomas Lecocq, Andrea Cannata, Valérie Ferazzini, Flavio Cannavo – *Single-station monitoring of volcanoes using seismic ambient noise: Application to different types of volcanoes*. Submission 186
21. Clare Donaldson, Corentin Caudron, Robert Green, Bryndís Brandsdóttir, Þorbjörg Ágústsdóttir, Jenny Woods, Robert White - *Volcano monitoring with seismic noise-based methods: insights from the Northern Volcanic Zone, Iceland and Kīlauea, Hawai'i*. Submission 1108
22. Tárсило Girona, Corentin Caudron, Christian Huber - *Source of volcanic tremor at openly-degassing volcanoes*. Submission 217

4. Others activities

[a] Conference on Climate change in the polar regions, 12 May 2017

A mini-conference on the subject of *Climate change in the polar regions* was organized by the Belgian National Committee for Geodesy and Geophysics (BNCGG). The conference took place on

12 May 2017, starting at 9:30 at the Royal Meteorological Institute of Belgium. The detailed program follows below:

9:30	Welcome
9:45-10:25	Frank Pattyn - ULB: <i>Sea-level response to ocean warming of Antarctic ice shelves: from global to regional scale.</i>
10:25-11:05	Francois Massonnet - UCL: <i>Past and Future Climate Variability at High Latitudes.</i>
11:05-11:20	coffee break
11:20-11:45	Alexander Mangold- RMIB: <i>Aerosol-cloud-precipitation interaction at Princess Elisabeth station in the perspective of climate research.</i>
11:45-12:10	Roeland Van Malderen - RMIB: <i>Contributions of RMI to polar stratospheric ozone research.</i>

[b] Joint conference with the UNITER Doctoral School, 20 October 2017

A mini-conference on the subject of *Climate-Earth Interactions* was organized by the Belgian National Committee for Geodesy and Geophysics (BNCGG), in association with the FNRS Doctoral School "UNITER".

The conference took place in Louvain-la-Neuve (UCL Campus) on 20 October 2017, with the following programme⁶:

14:00	Cedric Gillman & Elodie Gloesner (Royal Observatory of Belgium): <i>Habitability in the Solar System.</i>
14:25	Cedric Gillman & Elodie Gloesner (Royal Observatory of Belgium): <i>Habitability of past and present Mars.</i>
14:50	Jean-François Müller (Royal Belgian Institute for Space Aeronomy): <i>Biogenic volatile organic compounds emissions: what can we learn from spaceborne formaldehyde data?</i>
15:50	Sophie Opfergelt (ELIE / UCLouvain): <i>The fate of mineral nutrients in thawing permafrost: emerging views and challenges;</i>
16:20	Steeve Bonneville (Université libre de Bruxelles): <i>Fungi, plants and rocks : the triptych that started the colonization of land?</i>
17:00	Liane G. Bening (GeoForschungsZentrum Potsdam, Germany): <i>A geo-bio perspective on why Greenland melts</i>

The mini-symposium gathered about 40 participants.

⁶ <http://www.climate.be/php/bncgg/>

[c] Joint conference with the Royal Academy for Overseas Sciences, 11 December 2017

The Belgian National Committee on Geodesy and Geophysics (BNCGG) and the Royal Academy for Overseas Sciences organized in collaboration a one-day scientific workshop entitled *Disasters and Resilience in the 21st Century* on 11 December 2017 at the Palace of the Academies in Brussels.

The symposium consisted of 18 oral and 33 poster presentations on Overseas research activities in the wide range of fields of geophysics, glaciology, biology, meteorology, climatology.

The full abstract booklet is appended to this report⁷.

5. Future perspectives

[a] The next BNCGG General Assembly is planned on Thursday January 18, 2018

[b] The next American Geophysical Union (AGU) meeting is planned from 10 to 14 December in Washington DC, USA.

[c] The next IUGG General Assembly will be held in Montreal, Canada in 2019 (9-18 July).

[d] The next European Geophysical Union (EGU) conference will be held from 8 to 13 April 2018 in Vienna, Austria.

⁷ See abstract on page 86.

NATIONAL COMMITTEE FOR GEOGRAPHY

INTERNATIONAL UNION: INTERNATIONAL GEOGRAPHICAL UNION (IGU)

1. Introduction, mission, goals

The National Committee for Geography represents Belgian scientists working in the field of Geography in the work of IGU (International Geographical Union). This Committee is a forum for exchanging views on the landscape of Geography in Belgium.

2. Meetings of the committee

The National Committee for Geography met two times in 2017: 18 February and 7 October. The themes discussed were at the meetings:

[a] *Position of geography in society, secondary schools and the academic world.*

If in the academic world the Belgian geography occupies today a notable place among the sciences and that Belgium is ranked well in the international rankings, Belgium is always confronted with a lack of new students. The job market is facing a lack of geographers to which the number of annual graduates is unable to respond. And despite the fact that degrees offered by geography departments are more and more numerous, including international programs. For the same purpose Christian Vandermotten prepared an investigation on the position of geographers on the labor market. To help fill this lack of geographers by increasing the influx of new students, the NCG is supporting efforts by the National Geographical Institute and Agoria to promote geography in secondary schools. A delegation of the NCG has, with a view to preparing the BeGeo 2018 activity, met several times with the National Geographical Institute and Agoria, (for example on 18/12/2017 at the IGN). In the same context, several discussions were held to take initiatives to promote geography in society.

[b] *Geo-Olympiad*

Geo-Olympiad will be organized in Paris by the French National Committee of Geography at the occasion of the IGU Congress in Paris in 2022. The Belgian Committee is available to share the Belgian experience in this area.

3. General Assembly of the Scientific Union

No General Assembly in 2017.

4. Other activities

[a] Belgian Geography Days

The Belgian Geography Days - an initiative of the NCG - were organized this year on 17/11 at ULiège. They will be held again in 2019 at UGent. The Belgian Geography Days are an opportunity for young researchers to meet and present their research.

5. Subcommittees

[a] Subcommittee National Atlas

The large '*Atlas*' project subsidized by the FeBELSPO allowed the publication of 5 of the 6 volumes. Only the volume *Atlas of Cities* has not been issued. The takeover of the publisher Academia Press by Lannoo negatively influenced the distribution and marketing of the Atlas.

The annual subsidies of the Federal Science Policy are used for the Digital Atlas. Without these subsidies, this project cannot be operational and updated. The 2016 subsidies received in 2017 will largely be used for the purchase and commissioning of the new version of the software used, "Géoclip". The 2017 subsidies will allow new data to be put online. However, the subsidies have not yet been awarded.

[b] Subcommittee for Cartography – SIG

This report describes the activities of the Cartography / GIS Subcommittee of the National Geographic Committee. Detailed information about the activities can be found on our website⁸.

Website

After the end of the international mapping year, there was a need for a new general website for the Subcommittee. A website has been created, so there is now a clear distinction. On the main page, the most important news messages have been added. There is also a page containing information about the committee itself (function & members). In addition, additional pages are planned for recurring activities. In conclusion, the hypertext link to the old web page for the International Cartographic Year has been preserved, to archive the activities that took place during this year.

National Mapathon

Following the great success of the 1st edition in 2016 (with 200 participants), we again organized a

⁸ <http://ncgeografie.be/nl/cartogIS/>

national day of the Missing Maps Mapathon on Saturday, March 25, 2017, introduced by the National Committee of Geography (Subcommittee Cartography and GIS), in collaboration with Belgian OpenStreetMap. The universities of the three regions (Brussels, Flanders and Wallonia) have opened their doors for a whole day of mapping. The participating universities were: ULB, VUB, KUL, UCL, ULg, UNamen, UMons and UGent.

This time, the Mapathon focused on Sierra Leone, one of the countries with the highest figures of infant and maternal mortality in the world. Public health, which was already functioning badly in the country, was still weakened by the Ebola virus epidemic, which cost to medical employees their lives. In the Kenema district the figures are the most dramatic: 224 out of 1000 babies die before their first year. In addition, there has been a focus on projects in Northern Nigeria and Zambia.

In 2017, the participation was even higher than last year. A total of 355 people registered for the event and 40.000 objects (mainly buildings) were measured. An extensive report with dynamic maps and a summary of the top 50 participants is available online⁹.

Barbara Petchenik Drawing Competition 2017

Every two years, the International Cartographic Association (ICA) organizes the Barbara Petchenik Drawing Contest for children under 16 years old. The aim of this contest is to stimulate children to put their vision of the world in a creative way. Preselections are organized in all countries. Six images of the drawings sent (2 per age group) are selected for the international competition that takes place during the biennial international cartographic conference. In 2017 this conference was organized in Washington DC. The organization of the Belgian part of the competition (the preselection) is in hand of the Subcommittee of Cartography and GIS and takes place in close collaboration with the National Geographical Institute, which also manage the logistical organization of the preselection. The international competition was held from 1 to 7 July 2017 during the International Cartographic Conference. Unfortunately, Belgium was not among the winners of the competition this year.

International Cartographic Exhibition 2017

On the occasion of the International Cartographic Conference - July 1-7, 2017 in Washington DC - an international cartographic exhibition was also held. The subcommittee was responsible for organizing the participation on the Belgian side:

- Announcement of the event with institutions, firms and universities;

⁹ <https://github.com/tgrippa/Mapathon2017>

- Collection of Belgian shipments;
- Communication of the organization and implementation of the participating products.
- Shipments were subdivided into the following categories:
 - Cards
 - Atlas
 - Digital products
 - Electronic services
 - Educational products
 - Others

None of the Belgian shipments won an award during this edition.

NATIONAL COMMITTEE FOR GEOLOGICAL SCIENCES

INTERNATIONAL UNION: INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)

1. Introduction, mission, goals

The National Committee of Geological Sciences forms part of the "Classe des Sciences de l'Académie royale de Belgique" and the "Klasse der Wetenschappen van de Koninklijke Academie van België". The mission of the committee is to promote geology and to co-ordinate at a national and international level, the activities of the geological departments that are present in the different Belgian academic and scientific institutions. Members of the committee also act as representatives of Belgium in the International Council of Scientific Unions (ICSU). At present, the national committee co-ordinates the activity of a number of commissions and working groups such as the National Commission on Stratigraphy (sub-divided in specific sub commissions) and the Working group on Structural Geology. The National Committee of Geological Sciences of Belgium has close relationships with the International Union of Geological Sciences (IUGS), which is also a member of ICSU. The IUGS is a non-governmental organization that promotes and encourages the study of geological problems, especially those of worldwide significance.

2. Meetings of the committee

In 2017 the National Committee of Geological Sciences (NCGS) met in two sessions: on March 23th and December 7th.

During the first meeting the NCGS there was a further discussion on the proposal of the internal regulation (IR) of the NCGS. The first proposal for the Internal Regulations was written by Noël Vandenberghe. This proposal was for the first time discussed on the NCGS meeting of May 12th, 2016. After the discussion it was for the first time adjusted by Noël Vandenberghe and again discussed on the NCGS meeting of December 8th, 2016. After this discussion it was fine-tuned by Peter Van den haute and was again discussed on the NCGS meeting of March 23rd, 2017. After this discussion it was finally adjusted by the president of the NCGS, Johan Lavreau. During the period April 21st, 2017 and May 2nd, 2017 a ballot was held per e-mail on its approval among the fourteen active members of the committee at the date of the first meeting of the year 2017. Nine answers were received. All nine answers approve the Internal Regulation of the NCGS. The Internal Regulations which are fully applicable from May 3rd, 2017 were sent to RASAB as follows:

1. To accomplish its role of coordinator of activities dealing with the geological sciences in Belgium, it is recommended that the NCGS is composed of members that belong to universities, scientific and technical institutes, scientific societies and industrial companies that the NCGS acknowledges as being involved in geology and its outreach (reference to meeting reports NCGS 2014/2015).
2. Membership rules for the National Committees are defined by the Royal Academy of Sciences of Belgium (RASAB/NC). Mandates in the NCGS last for 4 years. They are renewable. In case of early resignation of a member, a new member can be elected for the duration of the mandate of the resigning member.
3. The NCGS installs subcommittees such as the National (sub-)Commission of Stratigraphy, National (sub-)Commission of Geoheritage and appoints a chairperson for each subcommittee. The time span of his/her mandate in the subcommittee is concurrent with that of his/her NCGS mandate. Subcommittees report to the NCGS, but can create their own internal working rules.
4. Two regular meetings are scheduled per year, preferably in February and in September. At the end of each meeting, the date of the next meeting is fixed. The secretary asks RASAB for the reservation of a meeting room in the buildings of the Academy in Brussels.
5. If necessary, additional meetings can be organized at the initiative of the president or at the request of any member of the NCGS.
6. Voting occurs according to the rules imposed by the RASAB/NC. It can also be organized by post or electronic mail.
7. The agenda of a regular meeting at least covers the following items:
 - a) Discussion on the present state of geosciences in Belgium and the need for specific initiatives.
 - b) Presentation by the different members of the upcoming activities organized by the institutes/ societies they are attached to.
 - c) Discussion of possible synergies in the activities proposed, establishing of missing activities and discussion on how to remediate this.
 - d) Actualization of the program of upcoming events, summarizing all activities in all institutes and by all societies involved in a single time table to be published widely and to be put on the website of the NCGS.
 - e) Matters related to international contacts: IUGS and its international commissions (stratigraphy, geoheritage ...), UNESCO, IGCP projects, IGC.
 - f) Miscellaneous

g) Date of the next meeting

The agenda is sent to the members by the secretary at least 2 weeks before the meeting date.

8. The NCGS obliges itself to maintain a website. This website is hosted RASAB or by one of the institutes that are represented in the NCGS, through one of its members. This member, together with the NCGS secretary, is responsible for keeping the website informative and up to date. Links to the website have to be promoted among all the institutes and societies involved in geology in Belgium.
9. Honorary membership of the NCGS is restricted to past presidents. The procedure is outlined in article 4 of the NC General Regulations. At the initiative of the president, honorary members can be invited to meetings for advice.

During the first meeting a preliminary list of candidates of new active members of the NCGS was proposed. During the second meeting of the NCGS (December 7th, 2017) ten new active members of the NCGS were welcomed in the NCGS. The possible internal activities of the NCGS were discussed. Following upcoming activities which were organized by the institutes/societies were reported by active members of the NCGS:

- “Pierres et Marbres de Wallonie’ organises an exposition in Brussels from November 17th, 2017 until January 17th, 2018 : ‘Le sous-sol de la Wallonie, pas de pétrole mais beaucoup de bonnes pierres! : GEO-logue/loog/logist. Espace Wallonie de Bruxelles, Rue de Marché aux Herbes 25 -27, 1000 Bruxelles (Francis Tourneur)
- Geologica Belgica organises a ‘Job Day’ for the master students on March 9th, 2018 at Ghent University (Stephen Louwye)
- 6th International ‘Geologica Belgica’ meeting from the September 12th-14th, 2018 in Leuven (Robert Speijer).
- These activities are put on the website of the NCGS.

3. General Assembly of the Scientific Union

No General Assembly in 2017.

NATIONAL COMMITTEE FOR LOGIC, HISTORY AND PHILOSOPHY OF SCIENCES

INTERNATIONAL UNION: INTERNATIONAL UNION OF HISTORY AND PHILOSOPHY OF SCIENCE (IUHPS)

1. Introduction, mission, goals

According to the mission of the National Committees, as stipulated in the Royal Decree of 2 April 1979, the National Committee aims to promote and coordinate research activities on Logic, History and Philosophy of Science in Belgium, primarily with regard to the international representation of Belgian scholarship in the International Council of Scientific Unions.

The National Committee is the Belgian member of the International Union of History and Philosophy of Science (IUHPS), both of its Division for History of Science and Technology (DHST) and its Division of Logic, Methodology and Philosophy of Science (DLMPS).

In practice, the main goals of the National Committee include:

1. To represent Belgian scholarship on the international level by being present as a member or spokesperson with international organizations (IUHPS, European Society of History of Science).
2. To coordinate Belgian scholarship by setting up collaborations and joint projects with other institutions (National Centre for the History of Science [KBR], Gewina [Belgian Dutch Society for the History of Universities and Science], BSLPS [Belgian Society for Logic and Philosophy of Science]).
3. To promote the integration of historical and philosophical studies of science.

In addition to these goals, the National Committee also acts to promote general interest in the history of (Belgian) science, and to disseminate the results of contemporary scholarship to a wider audience.

2. Meetings of the Committee

The Committee met on 24/11/2017

Main points on the agenda included:

- report BESTOR 2017;
- financial report;

- organisation workshop *Faculties of Science at 200: A Transnational Perspective on Belgium and the Netherlands*;
- report on the 25th International Congress of History of Science and Technology: “Science, Technology and Medicine between the Global and the Local” + General Assembly DHST - Rio de Janeiro, Brazil, 23-29 July 2017;
- projects for 2018.

3. General Assembly of the Scientific Union

25th International Congress of History of Science and Technology: *Science, Technology and Medicine between the Global and the Local* + General Assembly DHST

A general assembly was held at the aforementioned Rio de Janeiro conference, which Dr. Van Tiggelen attended (our second representative, Denis Diagre, eventually could not make it). The main conclusions and information were:

- (1) statutes and rules of procedures of DHST updated, soon legal existence will be confirmed (French legal route);
- (2) IUPHST new statutes approved (the previous ones had been lost for years);
- (3) Creation of a new commission: Commission on Science, Technology and Diplomacy;
- (4) Proposed termination of a History of Metrology Commission that hasn't been active was eventually not approved;
- (5) Change of name of the Commission on the History of Modern Chemistry (CHMC) to Commission on the History of Chemistry and Molecular Sciences (CHCMS);
- (6) Coming merger of ICSU and ISSC (social sciences);
- (7) Activities at UNESCO level with International Council for Philosophy and Human Sciences (CIPSH) and the World Humanities Conference in August 2017 in Liège;
- (8) The next ICHSMT will take place in Prague, Czechoslovakia.

4. Other activities

[a] Bestor:

Bestor¹⁰ is an online database on Belgian science and technology developed both for consultation by the general public and as a research instrument for the specialist scholar. It aims to provide a forum for historical research on (recent) Belgian science, to update historiographical sources with

¹⁰ www.bestor.be

newer publications, and to promote the interest in the (history of) Belgian science.

Bestor contains records on Belgian scientists, scientific institutions and scientific societies of the last three centuries, both in French and in Dutch. The different items are interconnected through links, which enable the visitor to follow up on the network of relations between people and institutions. In many cases, historical information is supported by direct links to online available sources. The records also provide references to secondary sources and recent publications.

The information presented in Bestor is supplied and assessed by a small team of collaborators (National Centre for History of Science, members of National Committee, individual collaborators, etc.), under the direction of the National Committee of Logic, History and Philosophy of Science. Administrative support and housing facilities are provided by RASAB. The Bestor database is physically located on the server of the Faculty of Arts of KU Leuven, where matters of technical maintenance are taken care of.

Bestor is supported by an annual subsidy of Belspo, which has been generously accorded to the Committee since 2008.

Staff and management

During most of 2017, Bestor employed 1,5 FTE scientific collaborator (A111). As manager of the project, Lyvia Diser (1 FTE) divides her time between writing new records, coordinating collaborators, updating and maintaining the content of website, Facebook and newsletters, developing public relations and promoting the project. To maintain contact with the academic world, which is essential for Bestor, Diser is voluntary research fellow at the University of Ghent. She also makes use of the UGent library facilities at its Museum for History of Science and its academic libraries.

As envisaged in 2015 and thanks to careful budget managing, an extra collaborator (0,5 FTE) was employed from October 2016 to translate records, translate and create newsletter items, maintain Facebook and manage the French side of the website. This employee, Alix Badot, was not a stranger to the Bestor project. She was employed from its start in 2009 up to 2012. At the same time, Badot was finishing her PhD-dissertation on the history of science and environment at the University of Namur. It was agreed that she would draw from her expertise on this topic as well as her many contacts in the French-speaking scholarly community for the benefit of Bestor projects. Badot left Bestor on the 31th of August 2017, after which Bestor engaged two professional translators to complete the most urgent translations. Apart from this, members of the National Committee have written, read and corrected records. As in previous years, number of amateur historians, under supervision of the Bestor team, have extended existing records with

new data, sources and images (often from personal archives). Supervisor of the project is Professor Geert Vanpaemel (KU Leuven), member of the National Committee.

Outcome 2017

During 2017, several existing records have been revised or extended. Furthermore, 284 new records have been produced, 167 in French and 117 in Dutch. As of January 2018, Bestor contains 1237 French and 1230 Dutch records. Out of the 284 new records, 178 are full articles and 106 are stubs. Stubs are pages with limited content.¹¹ These ultra-short pages have been created to direct readers to the full text counterpart in the other language (more on this project further on). There is neither equality in quantity nor a perfect match of records between French and Dutch versions at all times, it nevertheless remains Bestor's ambition to have two equivalent sets of records in both languages.

The graphs below show how the quick rise in records between 2010 and 2014 slowed down from 2014 onward. This is explained by a priority shift from large scale translation efforts to the more time-consuming creation of new records (in Dutch). In 2016 and again in 2017, Bestor decided to make these new Dutch records available in French, while continuing to produce new records in Dutch. This explains the larger increase of records in those two years. With a few exceptions, all of the new French full articles are translations. Almost all Dutch records are newly created.

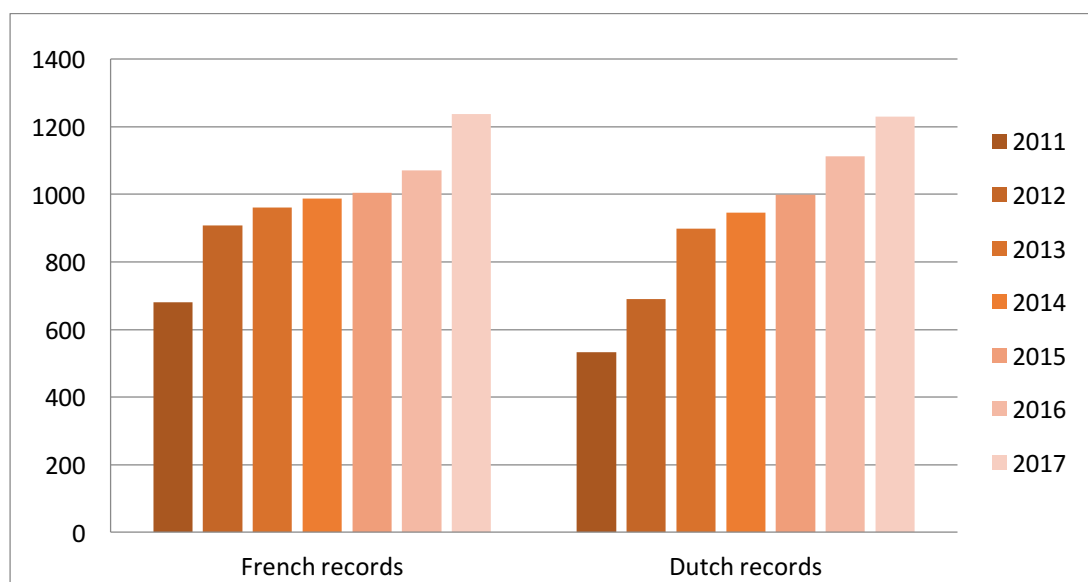


Figure 1: Evolution in number of records

As in previous years, the majority of the records are still **biographical**: 732 French and 726 Dutch scientists' biographies (versus 607 and 651 in 2016). However, following a trend started in 2016, only 30 new full text biographies were produced in 2017, representing 10% of the total amount of

¹¹ The Mediawiki Article Count software does not take them into account in its statistics.

records produced in 2017. In 2016, less than 30 % of new records were biographies, in comparison to 50% in 2015 and 2014. The remaining new biographies are in fact stubs, short pages containing a short description and a link to an existing full text article in the other language.

Furthermore, there are 131 (F) and 88 (D) records on scientific societies, 80 (D) and 42 (F) records on prizes and awards in science, 17 (F) and 39 (D) on scientific journals. National scientific heritage and 'lieux de mémoire' are represented by 95 (D) and 79 (F) records. There are records on most of the Federal research institutions and their staff, such as the Royal Observatory (98 records, D and F), the Botanical Garden 44 records (D), the Meteorological Institute (17 records, D and F), the Royal Museum for Art and History (23 records, D and F) and the Royal Academy. In 2016 the number of 'Science Stories'¹² rose from 28 to 36 (D and F).

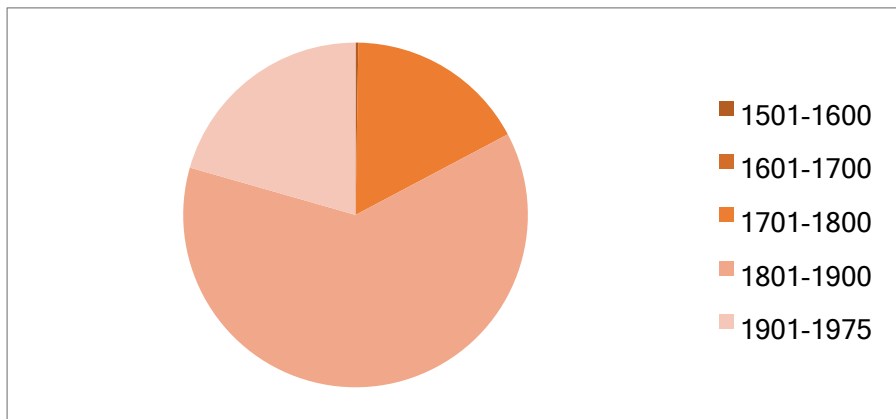


Figure 2: Chronological overview of biographical records FR and D (by date of birth)

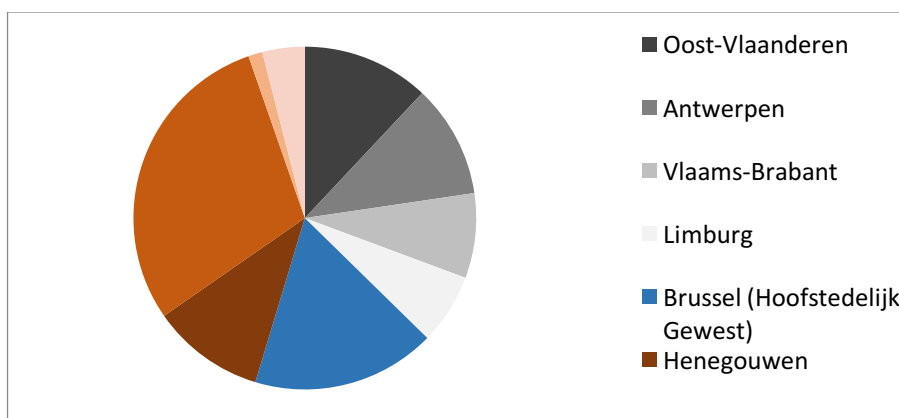


Figure 3: Records of the project 'Plaatsen van wetenschap/Sites et sciences', according to geographical distribution

¹² 'Science Stories' are attractive and richly illustrated short essays on key events in the history of Belgian science. Because of their many links, these pages function as a stepping stone towards other records in Bestor.

This year's new records were created in the framework of **two thematic inventory projects**, as recorded in the 2016's report. One focused on important sites, buildings and places in Belgian history of science, the other on the jubilee year 2017 (1817-2017), that celebrated the start-up of the Belgian scientific infrastructure, including university science faculties.

The first project, Plaatsen van Wetenschap/Sites et Sciences had its take-off in November 2016. It documents sites and places that are meaningful in the history of Belgian scientific activity, such as university buildings, campuses, laboratories, national, regional or communal research institutions, observatories, museums, gardens and other less traditional places, like research vessels or discovery sites. The aim of the project was to provide anchor points for the history of Belgian science into the local communities. Bestor can thus serve as a guide and stimulus for local teachers, journalists or simply tourists to visit places of interest concerning Belgian science. So far, 32 of the 45 projected new records have been created, including 3 Science Stories, on the ship the Belgica, the science faculties and the meridian lines of Quetelet. Some results were already presented in the newsletter or on Facebook, for example on the Neolithic caves of Spiennes.

The second project revolved around the universities' golden jubilee year 2017. Two Science Stories were created: on the foundation of the Belgian science faculties and its professors and on the high days of the 1870, when Belgian universities built their stunning architectural palaces. Furthermore, 8 biographies of professors of the early science faculties were created in Dutch and French, while 10 existing biographies were updated with new information and sources. All 18 were grouped under one category, making it easy for readers to browse through them. All this was done with the explicit aim to present a trending topic to the newsletter and Facebook audience.

In addition to these inventory projects, new records were created in close **collaboration with readers and members of the National Committee**. Coaching volunteers is a profitable activity: in total 20 new records have been composed. For example, after the presentation of the monuments project to the public (Facebook, Newsletter, homepage of Bestor and related organisation ETWIE) readers continued to tip-off statues of scientists in their neighborhood. All this new information made it possible to create 6 extra records with photographs provided by readers. As a result of this, today this overview contains every science monument on Belgian soil and of Belgian scientists abroad, making it the most complete overview at the disposal of the public. Volunteers also helped in the extension or revision of existing records. A partnership was set up with a genealogist to add personal data and digitalized birth and death certificates to biographies who still lack this crucial information. Amongst the other regular volunteers, we count a horticultural scientist who for several years now proposes valuable additions to the ever

growing list of renowned Belgian horticulturists, while collaboration with a former KMI-collaborator allows Bestor to enrich the database with fruits from his field of expertise.

As in previous years, a quarterly **Bestor newsletter** was published, in French and Dutch. Newsletters generally present topics related to the history of Belgian sciences or today's Belgian science world. Part of the topics are linked to ongoing or finished inventory work. Others refer to trending topics (F and D). This resulted in numerous new records, and Science Stories.

<p>N° 1 (jan-febr-ma)</p> <p>Publication date:</p> <p>13 01 2017</p>	<ul style="list-style-type: none"> · Wetenschap aan de Rijksuniversiteit Les sciences dans les universités d'État · Feestmarathon ter ere van 200 jaar rijksuniversiteit Le marathon festif en l'honneur des 200 ans des universités d'État · Aankondigingen Annonces
<p>N° 2 (apr-may-june)</p> <p>Publication date:</p> <p>07 04 2017</p>	<ul style="list-style-type: none"> · 125 jaar Greenwich Mean Time in België 125 ans de Greenwich Temps Moyen en Belgique 1.1.1 · De Belgische Great Barrier Reef expeditie van 1967 L'expédition belge vers la Grande Barrière de Corail (1967) · Aankondigingen Annonces
<p>N° 3 (july-aug-sept)</p> <p>Publication date:</p> <p>05 07 2017</p>	<ul style="list-style-type: none"> · Het wetenschapsmecenaat van Raoul Warocqué Raoul Warocqué mécène des sciences · Portaal Belgische wetenschapsmonumenten online Portail 'Monuments et Sciences' en ligne · Aankondigingen Annonces

<p>N° 4 (oct-nov-dec)</p> <p>Publication date: 10 10 2017</p>	<ul style="list-style-type: none"> · Wetenschapspaleizen Palais des sciences · KUL en UCL verzusteren rond <i>hun</i> Lemaître KUL et UCL se lient autour de <i>leur</i> Lemaître · Aankondigingen Annonces
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Figure 4: Newsletter topics throughout 2017

The **Bestor homepage** is a dynamic environment where the reader gets a regular update on significant dates and events in the history of Belgian science or the Belgian science today. Alternating focus texts shed light on trending topics or on what's new on the database. The agenda announces upcoming events concerning the history of science, such as conferences, exhibitions or call for papers. It also displays the newest publications on history of science.

After a year with minimal translations, the arrival of Badot at the end of 2016 made it possible to effectuate some large scale **translation operations** (Dutch to French). Priority was given to the most recent projects. Badot focused on the project 'Monuments et science', making 59 records available in French, and on the Women scientists project. After Badot's departure, remaining records were translated by an independent professional at the Centre Européen de Traduction Littéraire, under supervision of Diser (total of 45 records). Next to these two projects, the translation of the newsletter and accompanying records and Science Stories were guaranteed.

Furthermore, in autumn a collaboration was set up with National Committee member Anne Staquet of the Mons University to present Bestor Science Stories as an exercise in the 'ateliers' of linguistics students. This collaboration may be perpetuated after a positive evaluation at the end of the academic year.

There is no strict equality between French and Dutch records. Some records may appear on the Dutch side of the database but not on the French side, and vice versa. It nevertheless has always remained Bestor's ambition to have equivalent sets of records in both languages and, above all, to lead readers to the available information. That is why, halfway 2017 a large scale operation was started **to link all existing biographies** to their counterpart in the other language, or, lacking this, to create a short page (a stub) with a brief biographical description and a link to the full text record in the other language. Of a total of 634 Dutch and 668 French biographies, 520 Dutch and French biographies are now linked, while 103 stubs on the French side and 46 on the Dutch side were created.

In 2017, we have continued to work towards **increasing the user friendliness of the database and disclosing the website content**. A first strategy consisted in the creation of portals. Portals are visually attractive ‘start pages’ on a specific topic. They function as entry gates for this topic. They are rich in images and contain all links to records related to one particular topic. Records of special interest, new articles and related Science Stories are put on display there. In this way the portals help readers navigate through Bestor records. So far 2 portals have been created: on women and sciences (*La Science au féminin/Wetenschap aan de zij-kant*) and on monuments (*Monuments et sciences/Wetenschapsmonumenten*). A third portal, on science and war/peace, is underway. The homepage and the Science Stories underwent a restyling within the wikicode. Two pages were created, *Explorer la base de données* (F) and *Databank verkennen* (D), that list the different ways in which the database can be explored, and are aimed to guide readers in their search. Many readers have made use of it.

Secondly, our focus was on digitally improving website facilities. An extension to load pdf-files onto the website was encrypted in the web code, as well as an extension for Google Analytics. Also a scenario was written out to make some more fundamental improvements to the design of the website. They will be implemented throughout 2018 (see: *Projected activities in 2018-9*). The ICT-team at Faculty of Arts KULeuven takes care of the execution, under supervision of the Bestor team.

Due to the departure of Badot it is presently not possible to follow up on the project ‘Science et Environnement’ as was planned.

Promotion and visibility

As in previous years, the quarterly Bestor email **Newsletter** continued to appear. Fifteen editions in French and in Dutch have come out since its take-off in July 2014. The Dutch newsletter is edited by Diser. The translation has been taken care of by Badot. The letter draws attention to curious stories or significant dates in the history of Belgian science and presents historical background information to Belgian science today. It also presents updates on Bestor projects and brings important recent publications and interesting events related to history of sciences into focus. Links invite readers to continue reading and browsing on the Bestor website.

In 2017 the newsletter underwent a professionalization operation. From now on, the editing, sending and archiving of newsletters, as well as the maintenance of subscribers is done by means of a marketing automation platform (Mailchimp). The maintenance of subscriber lists is fully automatic. New subscribers can easily register through a signup form on the homepage and on Facebook. The marketing automation platform offers a unique view into the reading habits of our subscribers, making it possible to play into their likes and dislikes.

The newsletter is sent out to contacts by email. The list of subscribers contains most science history societies as well as individual scholars, amateurs, teachers and students. Apart from the steady flow of spontaneous subscriptions and online viewers, special efforts have been made to reach out to new groups of subscribers. Promotion for the newsletter was done on the website homepage and on Facebook. Furthermore, Badot has reached out to the French speaking community, starting with scholars and students in her own contact networks. On the other hand, orphan email addresses were weeded out off the subscriber list. This brings the total of subscribers at 352 (D and F).

Because of the switch to a new emailing system, it is difficult to present representative results for 2017. Based on the two last letters of 2017, the opening rate of newsletters is 47 % for the Dutch and 44% for the French version (versus average of 18% in non-profit sector¹³). The clicking rate percentage (based on 3 newsletters) is 10% for the French and 35% for the Dutch version.¹⁴

In an effort to address new target groups, Bestor has launched itself on **social media**. A bilingual Facebook page was started up in April-May 2017. The goal of the page is to introduce Bestor to new audiences, especially young adults – scholars, students etc – who are very active on social media. The Facebook page makes it easy for Bestor to communicate with other related organisations, institutions and platforms, and, most importantly, to tap into their audiences. This way the page is steadily building up its audience. As of now, Bestor Facebook has 65 followers. Since its start up, 79 messages have been posted, announcing publications and events, sharing curious stories, cartoons and videos and responding to current events. They are all richly illustrated and explain the history of Belgian science in a fun and easy way. The messages link to Bestor pages. While the most popular message received over 2225 views, 59 messages received 10 to 100 views and 15 messages received over 100 views, of which 7 received over 300 views. The departure of Badot meant a dramatic decline in messages addressed to the French speaking community.

It is not possible to make general declarations about the **visibility** gain or loss of the website in 2017 in comparison to other years: the new Mediawiki version, implemented in December 2016, does not allow to harvest page view statistics anymore. That is why, in April 2017, Google Analytics was installed. Since it takes a few months for this analytical tool to generate stable statistics, only results from May-June 2017 onwards can be presented. Another consequence of the switch is that a comparison with previous years is not (yet) possible. Following results are presented with some reservations.

¹³ Statistical averages offered by Mailchimp.

¹⁴ By clicking rate percentage we understand: the amount of clicks on links in the newsletter as a percentage of the total of subscribers.

From May 1 to December 31 of 2017 the website received 11.795 visitors who, in a total of 14.432 sessions¹⁵, browsed a total of 26.110 pages. That is an average of 50 visitors a day, visiting about 100 pages. What do Bestor visitors do? The two most visited pages are the French and Dutch homepage. As in previous years, the category page that collects all scientists, *Category:Wetenschappers* (D) scores well, as do the newly created stepping stone pages *Explorer la base de données* (F) and *Databank verkennen* (D). The top ten contains 3 records on statues. The most viewed Science Story is *Monumenten om de tijd te meten: De meridiaanlijnen van Quetelet*. A large number of pages are visited once.

Paginatitel	Paginaweergaven
Bestor	546
Bestor - Belgian Science and Technology Online Resources - Bestor_NL	329
Coeur du premier cyclotron - Louvain-la-Neuve – Bestor	307
Vesalius, Andreas (1514-1564) - Bestor_NL	244
Compermolle, Marie Louise (1909-2005) - Bestor_NL	180
Meridiaanlijn van Quetelet in Brugge - Bestor_NL	134
Stevin, Simon - Standbeeld in Brugge - Bestor_NL	122
Van Overstraeten, Roger (1934-1999) - Bestor_NL	113
Société royale belge de chirurgie – Bestor	99
Dierentuin van Brussel - Jardin zoologique de Bruxelles - Bestor_NL	93

Figure 5: Top ten of most viewed pages in May-Dec 2017

Who are Bestor visitors? The largest visitor audiences are situated in Brussels, Ghent and Liege. University cities are generally well represented. All of them, except for Hasselt and Mons are in the top ten. Bestor is visited by residents of almost all continents in the world. Besides Belgium (71%), the most visits (sessions) come from France (7%), the Netherlands (4%) and the United States (3%). 75% of all 26.110 viewed pages are visited by persons who are on Bestor for the first time, 25% are visited by ‘habitueés’. Most visits are still made by means of a desktop, but the number of visits on mobile devices and tablets is rising steadily.

¹⁵ A session is defined as a group of interactions one user takes within a 30 minutes time frame on the website.

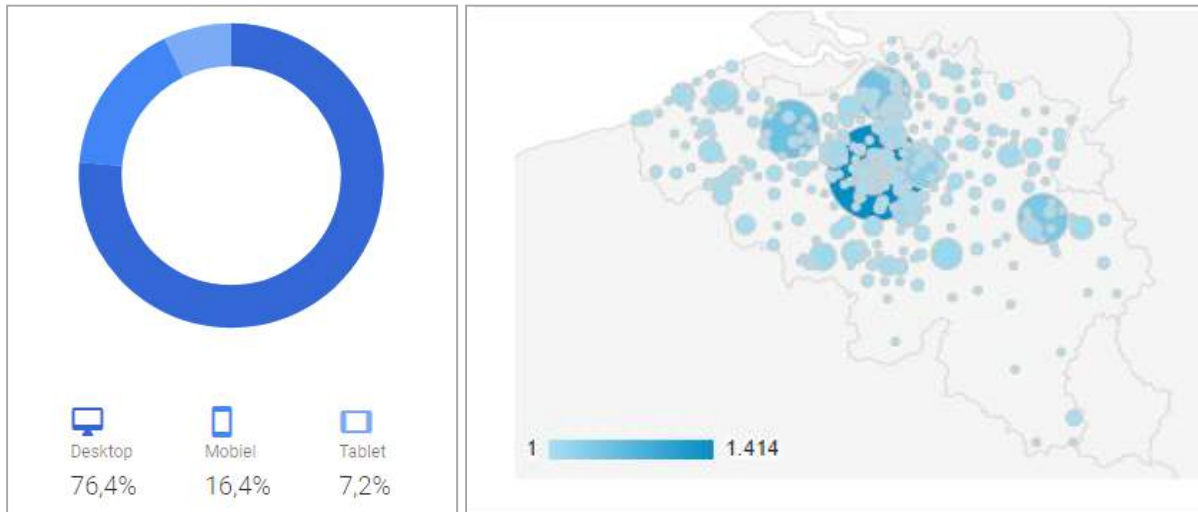


Figure 6-7: Sessions per device and geographic distribution of visitors in Belgium in 2017.

From what channels does Bestor acquire its visitors? From May 1 to December 31 of 2017, most visits (sessions) to Bestor are made via a search engine such as Google (87%). This is not surprising, since Bestor pages are well represented in Google queries. 8 % of visits start directly on the website with no referral (e.g. when someone types the site name or address in the address bar). 3% of visits are referrals from other websites that display a link to a Bestor page. 1,5 % of visits are made via email or social media, of which 194 pages were visited via the Bestor Facebook page and messages, and 329 via the newsletter campaigns.

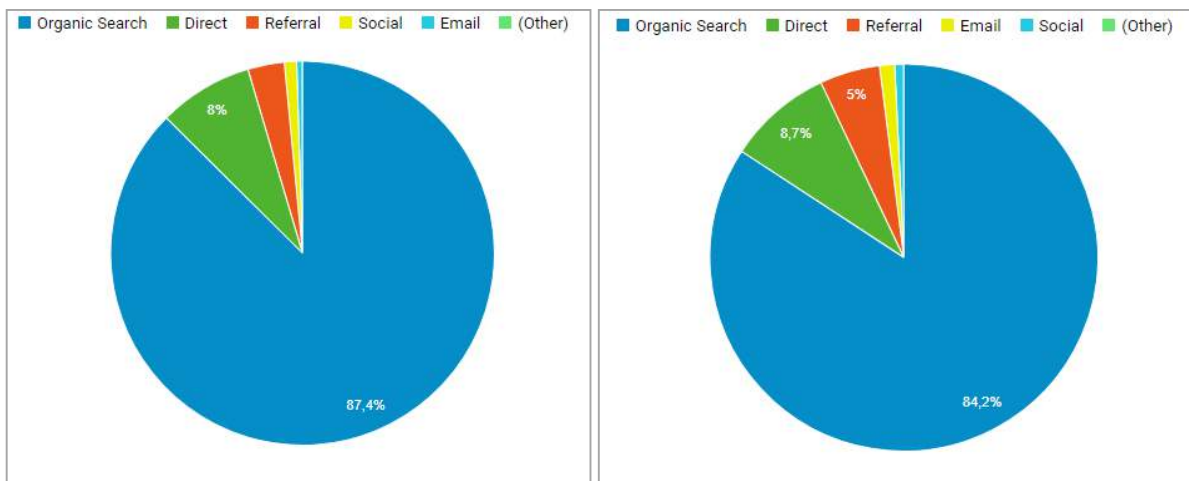


Figure 8-9: On the left: Visitors grouped per channel from which they arrive. Right: Page views per channel.

The statistics suggest that Bestor is primarily used as a research instrument, meaning that, when visitors land on Bestor, they have a topic in mind that they want to explore further. However, the large number of visits to the homepages, where current news on events, publications and database projects are presented, further indicates that Bestor is also successful in performing the role of information platform on what’s new in history of science. Although a large number of

readers who contact Bestor are amateur historians, teachers, scientists with a historical passion etc., the geographical distribution indicates that Bestor remains above all, a tool and platform for scholars and students.

5. Future perspectives

[a] Bestor

In 2018-2019 inventory projects and translations remain important in order to allow the creation of new records. However, as in 2017, we will also continue our special efforts on the disclosure of the available information to readers and on tapping into new reader audiences. To achieve these targets not only in the Dutch but also in the French language section the National Committee will engage a second, halftime collaborator for one year.

Project for the creation of new records

New records as part of thematical inventory projects will be made. **Colonial science** will be the topic of the first inventory project, Wetenschap onder de tropenzone. Bestor will seek collaboration with the Royal Museum for Central Africa (Tervuren), that will reopen for the public at the end 2018 (status quo on February 1) – in particular with Patricia Schuylenbergh, head of Section History and Politics. The output will consist of records on known and less known scientists, explorers, (agricultural) engineers, scholars in the medical field, institutions, expeditions and striking events etc. A portal, grouping all records concerning colonies, will be created to help readers navigate through this rich piece of Belgian history.

The second project will deal with the trending topic of **Science and War**. From mid 2018 onward, Bestor will start preparing the jubilee month November 2018 with a series of trending stories on ‘science in the aftermath of the Great War’ (restoration of the landscape, the newly acquired ex-German colonies, the Flemish university of Ghent etc.) The new stories will be presented in November 2018 to March 2019. At that time also a portal will be up and running. All records and Science Stories concerning war, e.g. on scientists-refugees, scholars that were active in battle, war institutions etc. will be listed on the portal.

In 2019 a third project, revolving around **Women scientists** and their networks will be started up. Bestor has already carried out a project on this topic in 2015-6. However, new material and discoveries call for a reopening. To this end, Bestor will collaborate with scholars, in particular with doctoral researcher Sarah Erman (KULeuven/UNamur/Université Paris Diderot), who studies Belgian women biologists and plant biologists (1875-1940) and who will create and update Bestor

records as a part of her Inspire Fellow-mandate. The total output will consist of some 15 new records, while some existing records will be revised. The new records will be brought to the public's attention. Experience teaches us that the topic of women scientists attracts wide interest.

A third inventory project will be launched mid 2018, that will draw from **the expertise of the new collaborator**. Every new collaborator that is engaged by Bestor, is carefully selected, so as to haul in new knowledge, to be used for the extension of the database.

Apart from this, in 2018 we will complete the inventory project on **Plaatsen van Wetenschap/Sites et Sciences** (14 remaining records of a projected total 45 new records). The project documents sites and places in the public sphere that are reminiscent of important moments in the history of Belgian scientific activity or discovery. The aim of the project is to introduce the history of Belgian science into the local communities. Bestor can thus serve as a guide and stimulus for local teachers, journalists or simply tourists to visit places of interest concerning Belgian science. Also we will continue **working with volunteers** – scholars as well as amateur historians and exact scientists – for the extension or revision of existing records and the creation of new records. Bestor records are always anonymous and subject to adaptations. In order to make publishing on Bestor attractive for scholars and students, we offer them the possibility to upload their original, inadaptable, signed text in the database. In this way, scholars can refer to these publications. To this end an extension was encrypted in the Bestor software, making it possible to upload pdf documents and visualise them in a link in the record.

Projects to disclose website content and increase user friendliness

In 2018-9 Bestor will continue its efforts to increase the user friendliness of the database. The creation of **portals** was started up in 2016 and will be continued. Portals are visually attractive 'start pages' on a specific topic. They function as starting points and entry gates for this topic. The Bestor portals are richly illustrated web spots displaying Science Stories, records of special interest and records on persons, events, institutions etc., related to one particular topic, thus creating an overview for the reader, to help him navigate. Portals are also an appealing and easy way to present a new inventory project to the audience. As mentioned above, a portal on Science and war, and one on colonial science will be created. A third portal will deal with the very topical subject of Belgian scientists and Darwinism. Amongst other things, the reader will have an overview of the 'Who's who' in Belgian evolutionist, fixist or (neo-) lamarckian research, of institutions dealing with these questions, of zoological and other collections, of traces of Charles Darwin in the Belgian public space etc. The portal will be up and running in the autumn of 2019 (following the 160th birthday of *Origin of Species* in November).

Apart from portals, our focus will be on increasing the user friendliness of the website. It is clear that **updating the web design** will be crucial to make this happen. Bestor exists ten years, and has had only limited design update since. Where in the past this was not an issue, today graphic website design developed into a real science with standards on what a user friendly, readable and stylish website should look like. Studies have shown that a modern, clean and elegant web site inspires confidence about its content, whereas outmoded websites raise concern about the validity and the up-to-dateness of the content. Yet more importantly, over the last ten years an increasing amount of website visitors make use of mobile devices and tablets. Analysis of our visitors shows that this is the case for Bestor also (see above). This evolution calls for an adapted interface design, that is elegant, readable and user friendly on all of the devices used. In cooperation with the ICT team at KULeuven, we will update the interface (or so called 'skin') of Bestor from 'Classic Monobook' to 'Mediawiki Tweeki', a clean wiki-as-a-website skin, that hides internal functionalities from the interface of the visitor, and that is highly compatible with all sorts of devices and screens. On certain pages wiki-content will have to be adapted accordingly. It is not yet clear what workload this will represent for the Bestor collaborators. Apart from that, adding Facebook and newsletter widgets to the homepages will make it an even more dynamic environment. Finally, Search Engine Optimisation will be implemented. It may be necessary to hire a trainee for the execution of these projects. She or he would then be supervised by both the ICT team at KULeuven and by Bestor.

Promotion and dissemination

The Google Analytics statistical information on the channels and interests of visitors (see above) will be used to make our promotion more targeted, especially to determine which promotional efforts will be most useful. We determine four fields.

- 1) Social media: We will continue to tap into new **Facebook** audiences, by grasping every opportunity to share messages with other organisations and being active on their pages.
- 2) In the following years Bestor will continue its **newsletter**. Extending the mailing list of the newsletter will be a primary goal. In 2017 our focus will be to increase readership in the French speaking community, with a special attention to French teachers (of science and history).
- 3) Referral (i.e. being mentioned and linked by other websites): we will **increase our presence on related websites** about history, sciences, biographies, Belgium, etc.), such as Historiek.net, cultuurgeschiedenis.be, etc and newsletters of related organisations. Every newsletter and finished project will be paired with an online publication/promotion elsewhere. Offline, we will continue our efforts to be present in **magazines and publications** such as the *Nationaal*

biografisch woordenboek and the *Biographie Nationale* etc. Bestor will also be present at important events related to history of science, science communication and scientific heritage, as well as scientific conferences.

4) Organic: we will further improve our findability on search engines such as Google by encrypting Search Engine Optimisation in our web code. We will sit together with the ICT team at KULeuven to discuss the best strategies.

[b] Workshop “Faculties of Science at 200: A Transnational Perspective on Belgium and the Netherlands”

This workshop seeks to pool scholarly resources in Belgium and the Netherlands so as to provide better insight in the circumstances and effects of the erection of academic faculties of science (1817) in the United Kingdom of the Netherlands. A collaboration with GEWINA and possible French partners is currently being explored, perhaps to coincide with Belgium as a host for Gewina’s annual autumn meeting.

[c] Young Researcher’s Day

The sixth installment of YRD will be organized in Brussels on 20 and 21 september 2018, and this in collaboration with BSLPS. Organization is currently under way.

NATIONAL COMMITTEE FOR MATHEMATICS

INTERNATIONAL UNION: INTERNATIONAL MATHEMATICAL UNION (IMU)

1. Introduction, mission, goals

The National Committee aims at stimulating and coordinating in Belgium research in mathematics, both in *pure mathematics* and *applied mathematics*, including *education in mathematics*. In fact the distinction between pure and applied mathematics is not always easy to make and there are increasingly many interactions. Speaking of pure mathematics, we think of algebra, geometry, analysis, logic, combinatorics, topology, set theory...

and often applications to mathematical physics! Applied mathematics consist among others of numerical analysis, statistics, treatment of signals; the use (and the necessity of creating new) advanced mathematics is currently expanding and covers areas such as econometrics and finance, theoretical informatics, bio-mathematics...

One of the main goals of the committee is to form a bridge between the International Mathematical Union (IMU) and the Belgian scientists who work in the area of Mathematics. As such we choose the delegates that represent Belgium at the General Assemblies of the IMU and suggest their names to both Academies. Together with the Belgian Mathematical Society we take care of informing the Belgian mathematical community by means of the "Newsletter of the Belgian Mathematical Society and the National Committee for Mathematics".

The National Committee consists of 16 members, with linguistic parity. Its members are chosen, taking into account a good gender representation, a well-balanced participation of the different universities, and a good representation of the different important mathematical domains

2. Meetings of the Committee

The National Committee for Mathematics had no face to face meeting but only electronic exchanges when questions were raised.

The members of the Committee have been regularly informed, by e-mail, about initiatives of the IMU or about the proposals of the IMU for which the opinion of the NCM was requested. All members and honorary members of the NCM received the Electronic IMU-Newsletter and the IMU-Bulletin.

3. General Assembly of the Scientific Union

No Assembly of the Scientific Union in 2017.

4. Other activities

The Newsletter appeared five times in 2017 and was distributed both electronically and in a paper version.

5. Future perspectives

A meeting of the Committee is being organized; it would take place in March 2018.

NATIONAL COMMITTEE FOR MECHANICS

INTERNATIONAL UNION: INTERNATIONAL UNION OF THEORETICAL AND APPLIED MECHANICS (IUTAM)

1. Introduction, mission goals

The Committee aims at promoting the Mechanical Engineering through inter-university Students and Staff exchanges, organization of a bi-annual National Congress of Theoretical and Applied Mechanics, organization of a Doctoral School (GrasMech), development of relationships with European and International Mechanical Engineering non-profit associations or initiatives (ECCOMAS, EURASEM, IUTAM, IACM...) and awarding the (Belgian) “best thesis” in Mechanical Engineering on an annual basis.

2. Meetings of the Committee

Three administrative meetings were organized in 2017.

[a] January 26, 2017. Main discussions:

Establishing a short list of 5 candidates for the Best Thesis Award.

[b] February 21, 2017. Main discussions:

Best Thesis Award, 2016 is granted to Thibaud Detroux (ULiège). T. Detroux will also be the Belgian candidate for the ECCOMAS best thesis award.

[c] December 5, 2017. Main discussions:

Procedure for the election of the new president.

New members of the Committee:

- Pierre Lambert (ULB) for Gérard Degrez (ULB)
- Thierry Massart ULB) for Christine de Mol (ULB)
- Geert Lombaert (KUL) for Geert Degrande (KUL)
- Patrick Guillaume (VUB) for Dirk Lefeber (VUB)
- Tine Tysmans (VUB) for Danny Van Hemelrijck (VUB)
- Anne-Marie Habraken (ULg) for Emilie Marchandise (UCL)
- Eric Colon (ERM/KMS) for Walter Bosschaert (ERM/KMS)
- Véronique Feldheim (UMons) for O. Verlinden (UMons)
- Grégoire Winckelmans (UCL) for V. Legat(UCL)
- David Meons (KUL) for W. Desmet (KUL)

All candidates unanimously accepted.

Former members will become “Honorary members”, except E. Marchandise.

Official letter has not been sent to RASAB yet. We are still waiting for one new member from Gent in replacement of B. Verhegge that has just been retired.

3. General Assembly of the Scientific Union

No Assembly of the Scientific Union in 2017.

4. Future perspectives

- Election for the “Best (Belgian) Thesis in Mechanical Engineering” for 2017 (January and February 2018)
- Proposal of an ECCOMAS price winner Belgian candidate from the NCTAM for 2017 (scheduled March 2018)
- Organisation and improvement of the doctoral school for Mechanical Engineers (GRASMECH)
- Organisation of the National Conference for Theoretical and Applied Mechanics (Liège 2018-2019)
- Electing the new President of the Committee

NATIONAL COMMITTEE FOR MICROBIOLOGY

INTERNATIONAL UNION: INTERNATIONAL UNION OF MICROBIOLOGICAL SOCIETIES (IUMS)

1. Introduction, mission goals

The Committee for Microbiology represents Belgian scientists conducting research in the field of biological sciences in the work of the International Union of Microbiological Societies (IUMS).

2. Meetings of the Committee

The meetings of the NCM were joint meetings with the board of the Belgian Society for Microbiology (BSM), of which some members are also member of NCM and all members of NCM are involved in the advisory board of BSM.

[a] February 27th 2017

Minutes of 27 February meeting

1. Welcome to Eveline Peeters and Nico Boon (excused), new members
2. Minutes of previous meeting are approved
3. Rules of procedure
 - Article 11; last sentence needs rephrasing so as to mean that the proposals of the NaCoMi for appointment of new members need to be approved by the Academy.
4. List of current NaCoMi members/honorary members
 - The list should (regularly) be updated on the website.
 - Past members should receive an e-mail asking them whether they wish to be listed as 'honorary members' (1)
5. Proposal of representatives for the IUMS meeting in Singapore:
 - J. Anné will attend 15th International Congress of Bacteriology and Applied Microbiology. Agreement for him to serve as representative of the NaCoMi. No other members of the committee have shown interest to attend the IUMS meeting. It is reminded that the Academy can support the flight and hotel costs for its Belgian representation.
6. Relation between BSM-board and NaCoMi.
 - NaCoMi will function independently from the BSM board, with the understanding that it will continue to help the BSM in organizing an annual symposium by providing the support and facilities made available by the academy.

- Members of the NaCoMi are available to provide to the BSM board any expert advice that it deems to be useful.
- To optimally fulfill these functions, it is desirable that one or more members of the BSM board also be members of the NaCoMi. To that effect, the NaCoMi will solicit suggestions from the BSM board when it comes to fill in membership vacancies in the Committee.

7. Membership in the future.

- See previous item
- NaCoMi members who persevere in failing to attend the meetings. Strict application of the 'Rules of procedures' is the only way to solve this problem (article 6, last paragraph) (2). In the future, invitations to the meetings will be organized by fixing the meeting dates after interrogation of the members for the best suitable meeting date. This should preclude members from lightly evading attendance.

8. 8. AOB

- The year report concerning the activities of NaCoMi in 2016 was approved.
- The information concerning the March for Science on 22 April is given. It is organized in many countries, and also in Brussels.

(1) 'Only effective members have voting rights. Honorary members can be invited for the meetings depending on their personal interest in the activities of the Committee.'

(2)' Effective members engage themselves to attend all meetings of the Committee. An effective member who, without notification, is absent from three consecutive meetings is considered to have resigned and will be replaced.'

[b] September 18th 2017

Minutes of 18 September meeting

1. The minutes of the 27th February meeting 2017 were approved.
2. Report on the IUMS meeting of July in Singapore (J. Anné). Due to delayed flights J. Anné could only partly assist the IUMS meeting of Singapore. He will provide the draft report as soon that it is available.
3. Relationship with the BSM – membership, advisory board. Jacques Mainil stepped down from the NaCoMi. There is at one hand the opinion to contact other existing Belgian Societies for microbiology (e.g. the Belgian Society for Clinical Microbiology) in order to find out whether they would be interested to have a representative member of their society as NaCoMi member. At the other hand in collaboration with the BSM with whom NaCoMi organizes yearly a joint symposium, a formal connection should be maintained.
The idea is to bring this point on the agenda of the BSM board meeting.

4. NaCoMi and evolution of the present and future memberships: principles and actions.

Replacement J. Mainil: has to be seen in de co-evolution of NaCoMi and BSM and in regional + institutional spread.

Possible candidates: Xavier De Bolle, Georges Daube

5. AOB

Discussion forum. The BSM has launched the idea of creating a discussion forum on actual microbial themes. This needs further discussion

3. General Assembly of the Scientific Union

Jozef Anne attended the General Assembly 2017 of the IUMS held in July 2017 in Singapore¹⁶.

4. Other activities

The 2017 Symposium of the Belgian Society for Microbiology¹⁷, organized jointly with the National Committee for Microbiology and supported by the Royal Academies for Science and the Arts of Belgium (RASAB) and the Royal Flemish Academy of Belgium for Science and the Art (Vlaams Contact forum), occurred on Friday October 20th at the Palace of the Academies in Brussels.

The Symposium included contributions from each of the four newly created BSM sections: General Microbiology (section A), Applied and Environmental Microbiology (section B), Medical and Veterinary Microbiology (section C) and Host and Microbes interactions (section D). By fostering interactions between microbiologists of different specialties and by presenting major inspiring achievements, this Symposium aimed at cross-fertilizing the different disciplines and fields of Microbiology.

The one-day event consisted of five sessions of oral presentations and four parallel poster sessions. The first four sessions, contributed by the sections are kicked off with a plenary lecture given by a high-profile international scientist and followed by two short talks given by scientists selected among the submitted abstracts. The fifth oral session consisted of a lecture given by a prominent Belgian microbiologist, elected by the BSM Board of Governors and the BSM Advisory Board, in recognition of an exceptional achievement. The posters presentations were also organized in four sessions matching the BSM sections. Four poster prizes, one per section, were awarded at the end of the Symposium.

¹⁶ Minutes of the General Assembly can be found on <http://www.iums.org/index.php/general-assembly/minutes-reports>

¹⁷ See program of the symposium page 95.

NATIONAL COMMITTEE FOR PHYSICS

INTERNATIONAL UNION: INTERNATIONAL UNION FOR PURE AND APPLIED PHYSICS (IUPAP)

1. Introduction, mission, goals

The Belgian National Committee on Pure and Applied Physics has been created by the Royal Academies for Science and the Arts of Belgium (RASAB). It contributes to the promotion and coordination of Belgian activities concerning Pure and Applied Physics. At the international level it ensures Belgium's representation in IUPAP, the International Union for Pure and Applied Physics. Its activities can be followed on its website¹⁸.

2. Meetings of the Committee

Meetings were held on March 2 and October 13. The main interest points of these meetings were:

- Preparation of the Colloquium 2017
- Updating of the publication *Research in Physics in Belgium*
- Preparation of 2017 General Assembly of IUPAP

3. General Assembly of the Scientific Union

The General Assembly of IUPAP took place on 11-13 October 2017 in Sao Paulo and was attended by the NCPAP chairman Roger Weynants, who submitted a travel report to RASAB¹⁹.

The NCPAP went in 2017 through the process of finding Belgian candidates to be proposed to the GA as possible members to one of the 18 IUPAP Scientific Commissions for the period 2018-2020. The Belgian share in the IUPAP financing in principle entitles to 4 Commission members.

The following Belgian physicists were elected as Commission members by the General Assembly.

- Physics for Development (C13): C.S. Iorio (ULB)
- Plasma Physics (C16): J. Ongena (KMS-ERM)
- Mathematical Physics (C18): A. Sevrin (VUB)
- Astrophysics (C19): C. Aerts (KULeuven).

¹⁸ <https://sites.google.com/site/physbel/>

¹⁹ See page 97.

4. Other activities

[a] 2017 colloquium of the NCPAP

The NCPAP has organised its 7th bi-annual colloquium on April 22, 2017 in the Palace of the Academies on *The Physics of Living Systems*.

The six contributors were

- Prof. Daniel MÜLLER, ETH Zürich: *Imaging biological structure and functioning with a focus on Atomic Force Microscopy*.
- Dr. François NÉDÉLEC, EMBL Heidelberg: *Probing the organisation principles of living matter through simulations*.
- Prof. Hans-Jürgen BUTT, MPIP Mainz: *Biomimetics : from nature to physical applications*.
- Prof. Antoni TOMSIA, Berkeley Lab: *Biomaterials and bone reconstruction*.
- Prof. Liesbet LAGAE, IMEC: *Bio-electronic tools for life science research, diagnosis and treatment*.
- Prof. Ir. Yves JONGEN, IBA: *Diagnostic and treatment by particle beam applications*.

A Poster Session with contributions from the Belgian Research Groups working in the field was held over lunch in which the rather large number of 27 posters was presented. A Best Poster Prize, sponsored by IBA, was awarded to A.-C. Heuskin (UNamur).

The colloquium was attended by 86 participants. The extended abstracts of the presentations were made available to the participants and uploaded on the committees' website.

Sponsoring by KVAB (Contactforum), FNRS, FWO-Vlaanderen, International Solvay Institutes, Belgian Physical Society, SCK-CEN, IMEC and IBA is warmly acknowledged.

[b] Research in Physics in Belgium:

The NCPAP started in 2005 to compile short reports on 15 different physical research topics in Belgium, both theoretical and experimental, and regular updating has since occurred. Hitherto 29 prominent Belgian researchers have contributed to this series. The updated texts (135 pages, containing more than 350 (web)addresses) can be found online²⁰. The most recent entries are "Magnetism 2017" by Prof. B. Van Wayenberge (UGent) and "Biophysics 2017" by Prof. C. Bartic (KULeuven). All new updates are also published in BPhy Magazine, the online magazine of the Belgian Physical Society.

Recently, a second initiative was started in this context: an events calendar allowing the Belgian

²⁰ <https://sites.google.com/site/physbel/Physics-in-Belgium/reports>

research groups to advertise their upcoming events, was added to our website²¹.

5. Future perspectives

In 2018, the NCPAP will mainly prepare its 2019 Colloquium and continue its efforts for promoting the Physics Research Activities in Belgium. The temporary vacancy in its membership awaits action by the Classes of the Academy.

²¹ <https://sites.google.com/site/physbel/Physics-in-Belgium/calendar>

NATIONAL COMMITTEE FOR PHYSIOLOGY AND PHARMACOLOGY

INTERNATIONAL UNION: INTERNATIONAL UNION OF PHARMACOLOGY (IUPHAR)

& INTERNATIONAL UNION OF PHYSIOLOGICAL SCIENCES (IUPS)

1. Introduction, mission, goals

The goal of the Committee is to organize national and international scientific meetings in which Belgian Physiologists and Pharmacologists (and eventually their guests) can present and bring up for discussion the results of their recent research in the fields of Physiology and Pharmacology.

2. Meetings of the Committee

The committee organizes twice a year a scientific session and once a year the general assembly.

General Assembly of the National Committee - October 20th in Brussels.

Minutes:

1. The administrative and financial reports for 2017 are discussed and approved.
2. Our Society was represented at the general assembly of the International Union of Physiological Sciences (IUPS) in Rio de Janeiro (Brasil) on August 1st 2017 by Johan Van de Voorde. He reports that the congress was well organized with 1479 participants from which 5 Belgians and himself as a member of the Belgian Society of Physiology and Pharmacology. There was an important focus on a recently published document on "Physiology: current trends and future challenges". This document provides information on the current status of Physiology, provides recommendations to improve the status of Physiology and to improve funding opportunities, as well as recommendations on the way physiologists should be educated. Finally, suggestions are made in the document on the ways to obtain more public support for Physiology, and to address challenges in the physiological sciences worldwide. Council elections 2017-2021 were done: president Julie Chan (Taiwan), secretary-general Ulrich Pohl (Germany). Sri Lanka has been accepted as a member of IUPS. Dates for the coming IUPS and other Congresses are indicated in point 7.
3. The annual membership fee for our Society remains 40 €. The Assembly urges the members to pay their dues on time. The membership for retired Society members remains free of charge.
4. Elections

Prof. Dr. Geert Bultynck (KU Leuven) was elected as Second Vice-Chairman.

As already announced in the general assembly of 2016 Prof. Dr. Johan Van de Voorde (UGent) wishes to step down as session secretary – treasurer. Prof. Dr. Guido De Meyer (UAntwerpen) is prepared to take over these functions. His candidature is approved by the members. The secretarial and financial administration will be transferred on January 1st 2018. The transfer of the functions will be organized as soon as possible in concertation with the secretary general. The session secretariate will provide Prof. De Meyer with a road map for the organization of the meetings. 2

In his tribute to Prof. Dr. Johan Van de Voorde and Mr. André Van Baeveghem, secretary general Prof. Dr. Vincent Seutin stresses their merits for their longstanding and very efficient commitment to the organization of our national meetings and to the financial administration.

For 2017 the board will be as follows:

- Chairman Prof. Dr. Wim Martinet (UAntwerpen)
- First Vice-Chairman Prof. Dr. Philippe Gailly (UCLouvain)
- Second Vice-Chairman Prof. Dr. Geert Bultynck (KU Leuven)
- Secretary General Prof. Dr. Vincent Seutin (ULiège)
- Session Secretary - Treasurer Prof. Dr. Guido De Meyer (UAntwerpen)
- Advisors Prof. em. Dr. Eric Lacroix (UGent)
- Prof. em. Dr. Théophile Godfraind (UCLouvain)
- Prof. Dr. Johan Van de Voorde (UGent)

5. The candidatures of Joris Vriens (supported by Thomas Voets and Rudi Vennekens – KU Leuven) and Lynn Roth (supported by Guido De Meyer and Wim Martinet – UAntwerpen) are approved.

6. Calendar of the Society Meetings

2018: Spring Meeting April 27th Brussels (host: Prof. Dr. Julien Hanson, ULiège)

2018: Autumn Meeting October 19th Brussels (host: Prof. Dr. Geert Bultynck, KU Leuven)

7. International Meetings

2018:

26 February–1 March/ Göttingen (Germany)

3rd German Pharm-Tox Summit - a joint meeting: 84rd Annual Meeting of the German Society for Experimental and Clinical Pharmacology and Toxicology (DGPT)

July 1-5th 18th World Congress of Basic and Clinical Pharmacology Kyoto, Japan

14-16 september: London UK: Congress of the Federation of European Physiological Societies (FEPS): “Eurphysiology 2018”. Info: <https://www.europhysiology2018.org/>

2021: IUPS 39th World Congress - Beijing (People’s Republic of China)

2022: Glasgow (UK): World Congress of Basic and Clinical Pharmacology (IUPHAR and the British Pharmacological Society)

2025: IUPS 40th World Congress - Munich (Germany) – organised by several European Physiological Societies (+ Belgium ?)

8. Miscellaneous

Considering the changes in the board of the Society, Prof. Dr. Théophile Godfraind, president of the National Committee of Physiology and Pharmacology, suggests that Guido De Meyer should be nominated as secretary and J. Van de Voorde should remain as a member.

The composition of the National Committee of Physiology and Pharmacology will therefore be modified as follows:

The Royal Academies for Science and the Arts of Belgium vzw/asbl

The National Committee of Physiology and Pharmacology

Godfraind Théophile - President

Lefebvre Romain - Vice-President

De Meyer Guido - Secretary

Seutin Vincent – Deputy Secretary

Voets Thomas - Member NL

Dessy Chantal - Member FR

Gailly Philippe - Member FR

Gall David - Member FR

Van de Voorde Johan - Member NL

Lebrun Philippe - Member FR

Dresse Albert - Member FR

Smolders, Ilse - Member NL

Snyders Dirk - Member NL

Lacroix, Eric - Member NL

Bogaert Marc - Member honoraire NL

3. General Assembly of the Scientific Union

Prof. Johan Van de Voorde represented the National Committee in the General Assembly of the International Union of Physiological Sciences (IUPS) in Rio de Janeiro (August 1, 9-12 am) during the 38th World Congress of the International Union of Physiological Sciences²².

²² See report on page 105.

4. Other Activities

[a] *The National Spring meeting of the Belgian Society of Physiology and Pharmacology*, April 21th in Brussels (Palace of the Academies), aiming to bring together the physiologists and pharmacologists from Belgian laboratories. About 60 scientists attended the meeting. Prof. Philippe Gailly hosted the meeting. Programme and abstracts are included in this correspondence²³.

[b] *The National Autumn meeting of the Belgian Society of Physiology and Pharmacology*, October 20th in Brussels (Palace of the Academies), aiming to bring together the physiologists and pharmacologists from Belgian laboratories. About 70 scientists attended the meeting. Prof. Wim Martinet hosted the meeting. Programme and abstracts are included in this correspondence²⁴.

5. Future perspectives

2018 Scientific Meetings

April 27th Brussels (host: Prof. Dr. Julien Hanson, ULiège)

October 19th Brussels (host: Prof. Dr. Geert Bultynck, KULeuven)

²³ See: <http://users.ugent.be/~jvdvoord/physiology&pharmacology>

²⁴ See: <http://users.ugent.be/~jvdvoord/physiology&pharmacology>

NATIONAL COMMITTEE FOR PSYCHOLOGICAL SCIENCES

INTERNATIONAL UNION: INTERNATIONAL UNION OF PSYCHOLOGICAL SCIENCE (IUPsyS)

1. Introduction, mission, goals

The goal of the Committee being to undertake, promote and coordinate psychological scientific research, focusing in particular on long term, intercollegiate or interdisciplinary projects and to serve psychological scientific interests in Belgium from a national as well as an international point of view.

2. Meetings of the Committee

The Committee held two meetings in 2017: The first took place on April 29th; the second on November 25th.

3. General Assembly of the Scientific Union

The Scientific Union did not organize a meeting in 2017. The next IUPsyS meeting will be held in Prague, July 19-24, 2018.

4. Other activities

The committee organizes bi-annual symposia. In 2017, the next symposium was planned, under the supervision of Pr. Philippe Peigneux. It will be organized on May 7th, 2018 at the Academy, and will be dedicated to *Windows on brain plasticity*. The committee also assists, every year, the Belgian Association for Psychological Science in selecting the recipient of its "Best Thesis Award". The 2017 competition yielded Delphine Puttaert (ULB) as the winner. A jury composed of committee members and presided by A. Vandierendonck made the final selection (see Annex 2 for the report) A similar scheme will be adopted for next year.

5. Future perspectives

No new initiatives are currently planned beyond the continued involvement of the committee in its current activities, namely (1) communicating with the IUPsyS and with the Belgian Association for Psychological Science (BAPS), (2) organizing the next symposium, and (3) handling the final stage of the BAPS Best Thesis Award.

NATIONAL COMMITTEE FOR RADIO-ELECTRICITY (URSI)

INTERNATIONAL UNION: INTERNATIONAL UNION OF RADIO SCIENCE (URSI)

1. Introduction, mission, goals

The activities of the Belgian URSI Committee pertain to radio-electricity. The main goal of the committee is to promote and to help coordinating for Belgium the scientific activities of its members in this field. The committee meets regularly at the Academy and organizes yearly, in collaboration with the Netherlands URSI committee, an 'URSI Benelux Forum' where young *doctorandi* have the opportunity to present their research and to exchange their scientific and technical experience. Members of the committee represent Belgium in different instances and scientific commissions of the international URSI union, the secretariat of which is hosted in Ghent, with Peter Van Daele replacing Paul Lagasse as Secretary-General since the General Assembly in August 2017.

2. Meetings of the Committee

The Belgian URSI Committee has met on May 22 at the Palace of the Academies.

The main point on the agenda was the preparation of the URSI General Assembly of August in Montreal and the designation of the representative of URSI Belgium to the Council, Professor E. Van Lil, as well as of the Official Members of our committee in the different scientific commissions.

For logistic reasons and due to the unavailability of the Vice-President due to health problems, the planned December meeting had to be postponed to the beginning of 2018.

Meetings of the scientific union in 2017 and in the coming years

3. General Assembly of the Scientific Union

The triennial URSI General Assembly was held in Montreal in August 2017²⁵. Prof. Paul Lagasse was thanked for the 24 years he has worked as Secretary-General and was conferred the title of Honorary President. The Vice-President of our committee, Prof. Peter Van Daele was elected as the new Secretary-General. The new President of URSI is Prof. Makoto Ando, from Japan.

Concerning the scientific part, there were many contributions from Belgium (26 were authored or coauthored by Belgian scientists, including 9 invited papers).

²⁵ See report on page 107.

The next General Assembly will take place in Rome in 2020.

The 2nd URSI Atlantic Radio Science Conference (AT-RASC 2018) will take place in Gran Canaria, Spain, during the period 28 May - 1 June 2018.

4. Other activities

The 26th BENELUX URSI Forum has been organized by Xavier Neyt on February 16 in Brussels at the Royal Military Academy, on the theme *From EM waves to information*. There were 6 invited talks and 20 posters, three of which were distinguished by a Best Poster Award, aiming at encouraging doctoral and young postdoctoral researchers. The Forum was well attended, both by URSI members and by other participants.

5. Future perspectives

The 27th BENELUX URSI Forum will be organized by the Dutch Committee in Delft (TU) on January 25, 2018.

NATIONAL COMMITTEE FOR SOIL SCIENCES

INTERNATIONAL UNION: INTERNATIONAL UNION OF SOIL SCIENCES (IUSS)

1. Introduction, mission, goals

The NCSS was set up in 2002, following long lasting activities of the Soil Science Society of Belgium (started in 1924) and with the purpose to bring soil science to the attention of the broader public with particular focus of the young people. This original mission of SSSB/NCSS is more relevant now than ever: soil and soil suitability comes daily in the media and in the public debate: soil as an ultimate powerhouse and store for carbon sequestration to check climate change; trade-offs between food production versus agro-fuels; the preservation of our pristine soils; the conservation of our soil heritage; the rehabilitation of marginal lands and the remediation of polluted soils. The NCSS is the representative organization for all soil scientists active in Belgium and is the official Belgian representative into the International Union of Soil Sciences (IUSS).

Executive summary of activities in 2017:

Continuation of special editions of our activities in the wake the UNESCO International Year of Soils, and in view of the International Decade of the Soil under the IUSS:

- Committee meeting on February 15, 2017 at RASAB, Followed by the National Assembly of the SSSB/NCSS;
- Day of Young Soil Scientists on February 2017 at RASAB: 27 participants contributed by bringing either an oral or a poster presentation;
- Excursion: The Orneau, a fertile valley for soil research, led by Prof. Patrick Engels, ULiege: 48 participants;
- Thematic Day: Soil Resources Mapping: past, present and future: 59 participants, Keynotes: Prof. Johan Bouma, Wageningen University and Prof. Roger Langohr, UGent.
- Communicating through our dedicated website where anything happening in the field of soil science, e.g. a PhD defense, is timely announced so that interested people can participate;
- Organization of IUSS elections²⁶.

Moreover, the society made special efforts to reach out to the general public:

- Representation at the Global Partnership hub during the European Development Days, 7 June at Brussels: Presented the digital visit to the “Africa in Profile” exhibition.

²⁶ <http://www.bbv-sbss.be/?cat=361>

- Contribution to the EGU conference 2017 at Vienna with numerous papers
- Representation in the annual BAG (Belgian Association of Geomorphologists) excursion on June 9, to the Ardennes and the Famenens (Organization: ULiege)
- Co-publishing with FAO of the 2015 French edition of the World Reference Base for Soil Resources (WRB), the international soil classification system for naming soils and creating legends for soil maps.

2. Meetings of the committee

- National Committee of Soil Science meeting on February 15, 2017 at RASAB, Followed by the National Assembly of the SSSB/NCSS²⁷.
- Day of Young Soil Scientists on February 2017 at RASAB: 27 participants contributed by bringing either an oral or a poster presentation. A book of Abstracts was produced, a copy is available upon request.
- Excursion: The Orneau, a fertile valley for soil research, led by Prof. Patrick Engels, ULiege: 48 participants²⁸.
- Thematic Day: Soil Resources Mapping: past, present and future: 59 participants, Keynotes: Prof. Johan Bouma, Wageningen University and Prof. Roger Langohr, UGent²⁹.
- National Committee of Soil Science meeting on December 5, 2017 at RASAB³⁰.

Main conclusions: the NCSS has successfully organized 5 activities which were well attended by numerous scientists from all member universities. It was encouraging to note that the number of young scientists is on the increase.

3. General Assembly of the Scientific Union

Preparations are on the way towards the next IUSS World Soil Congress which will be organized in Brazil in 2018.

Next EUROSIL meeting will be held in Geneva, Switzerland in 2020.

Main conclusions: K. Vancampenhout is member of the IUSS Board and also a key person in the European Confederation of Soil Sciences which is organizing next Eurosoil meeting in 2020. She is also acting as secretariat with FAO in the co-publication of the French version of WRB. Stefaan Dondeyne and Seppe Deckers are in the Board of the IUSS Working Group WRB on international soil classification, which organized an international meeting and excursion on Soil Classification in

²⁷ Report: http://www.bbv-sbss.be/?page_id=1371

²⁸ More info on: http://www.bbv-sbss.be/?page_id=3024

²⁹ Read more: Book of Abstracts and the scientific presentations: http://www.bbv-sbss.be/?page_id=3076

³⁰ Report: http://www.bbv-sbss.be/?page_id=1371

Latvia. Seppe Deckers is also chairing the Ad-Hoc Selection Committee of the bi-annual IUSS-Guy Smith Medal Award, the latest Medal Award (2016) was given to Dr. Juan Comerma from Venezuela. A new call for the IUSS Guy Smith Medal Award is due for early 2018.

4. Other activities

Participation to the EGU at Vienna, Austria in April 2017

Celebration of Honorary Member Prof. Jules D’Hoore 100th anniversary

Report: Laudatio Prof. Jules D’Hoore³¹.

Publishing an “In Memoriam” for³²:

Prof. Frans Dekoninck (UGent) & Prof. Jules D’Hoore (KU Leuven).

5. Future perspectives

NCSS will organize 5 core activities in 2018:

- Board meetings (February 17, 2018 & November 21, 2018) at RASAB
- A general assembly and Day of the Young Soil Scientist on February 17, 2018 at RASAB
- An international excursion: Soil and land use in the upper Rhine graben and cuesta landscapes from May 21 – 15, 2018, in Collaboration with the University of Hohenheim, Germany
- Thematic Day – 21 November 2108: Bio-geochemical cycles of carbon and silica through soils, lead: Prof. Pascal Boeckx, UGent

³¹ <http://www.bbv-sbss.be/?cat=261>

³² <http://www.bbv-sbss.be/?cat=271>

INTERNATIONAL SCIENTIFIC UNIONS

The conditions for the foundation of a National Committee is the existence of an international scientific union which is a member of ICSU or a member of a scientific institution of ICSU (scientific committees, special committees, etc.) in the same scientific discipline.

All Belgian national committees are members of one or more international organizations in which they represent Belgium.

National Committees	Internationale unions
1) Antarctic Research	Scientific Committee on Antarctic Research www.scar.org
2) Astronomy	International Astronomical Union (IAU) http://www.iau.org
3) Biochemistry and Molecular Biology	International Union of Biochemistry and Molecular Biology (IUBMB) www.iubmb.org
4) Biological Sciences	International Union of Biological Sciences (IUBS) www.iubs.org
5) Biomedical Engineering	International Federation for Medical and Biological Engineering (IFMBE) www.ifmbe.org International Union for Physical and Engineering Sciences in Medicine (IUPESM) www.iupesm.org

6) Biophysics	International Union of Pure and Applied Biophysics (IUPAB) www.iupab.org
7) Chemistry	International Union of Pure and Applied Chemistry (IUPAC) www.iupac.org
8) Crystallography	International Union of Crystallography (IUCr) www.iucr.org
9) Geodesy and Geophysics	International Union of Geodesy and Geophysics (IUGG) www.iugg.org
10) Geography	International Geographical Union (IGU) www.igu-net.org
11) Geological Sciences	International Union of Geological Sciences (IUGS) www.iugs.org
Logics, History and Philosophy of Science	International Union of History and Philosophy of Science (IUHPS), <ul style="list-style-type: none"> • Division of History of Science and Technology (IUHPS-DHST) • Division of Logic, Methodology and Philosophy of Science (IUHPS-DLMPS) www.dlmeps.org
13) Mathematics	International Mathematical Union (IMU) http://www.mathunion.org
14) Mechanics	International Union of Theoretical and Applied Mechanics (IUTAM) www.iutam.net

15) Microbiology	International Union of Microbiological Societies (IUMS) www.iums.org
16) Oceanology	Scientific Committee on Oceanic Research (SCOR) www.scor-int.org
17) Physiology and Pharmacology	International Union of Physiological Sciences (IUPS) www.iups.org International Union of Pharmacology (IUPHAR) www.iuphar.org
18) Physics	International Union of Pure and Applied Physics (IUPAP) www.iupap.org
19) Psychological Sciences	International Union of Psychological Science (IUPsyS) www.iupsys.net
20) Quaternary Research (BELQUA)	International Union for Quaternary Research (INQUA) www.inqua.org
21) Radio-electricity	International Union of Radio Science (URSI) www.ursi.org
22) Soil Sciences	International Union of Soil Sciences (IUSS) www.iuss.org

APPENDIXES

Report of my attendance at the IUPAC General Assembly Sao Paulo, Brazil

Period 7 – 14 July 2017

Rita Cornelis

I attended the following meetings:

1. General Assembly Opening and Reception.
2. Division VII: Chemistry and Human Health on 2017-07-08 and 2017-07-09
Rita Cornelis is Vice-President of Division VII.
3. The ICTNS (Interdivisional Committee on Terminology, Nomenclature and Symbols) on 2017-07-10
Rita Cornelis is an associate member of this Committee
4. The Division President and Vice-President Meeting on 2017-07-08 and 2017-07-11
5. The Award Meeting 'Women in Chemistry' on 2017-07-09
6. The 'Solvay Awards' for young scientists on 2017-07-09
7. The preparation of 'IUPAC 100 anniversary' to be held in Paris, July 2019
8. Several reunions with Young Observers during the whole week
9. Bureau Meeting on 2017-07-11
10. The Council Meeting on 2017-07-12 and 2017-07-13
11. Closing session on 2017-07-14

Hereafter follows a short description of the activities that were discussed during these meetings.

Division VII: Chemistry and Human Health

The mission of this Division is to promote pure and applied chemistry in the service of human health and well-being. Major aspects are the development of therapeutic drugs, the standardization of clinical laboratory methods and the protection of humans from potential harmful substances.

The work is done by 3 subcommittees:

- (a) *Medicinal Chemistry and Drug Development (DDD);*
- (b) *Nomenclature, Properties and Units in Laboratory Medicine (NPU-LM);*
- (c) *Toxicology and Risk Assessment (TRA).*

All three sectors have seen fulminant developments in the past 20 years, as proven by the high scientific output (books and publications). This Division helps IUPAC and the chemical community to keep up with the rapid development in the health-related areas. Beyond that, this Division supports health-related symposia and workshops.

The achievements by the members of Division VII during the past 2 years read as follows:

- Terms Used in Computational Drug Design, *PAC* 88, 239 (2016)
- Terms Used in Developmental & Reproductive Toxicology, *PAC* 88, 713 (2016)
- Training of Schoolchildren on Pesticides and Health
- Advances in Immunochemistry and Applications to Human Health
- Nanoparticles and their Impact on Human Health
- Workshop in Mexico on Safety of Nanomaterials
- Book Comprehensive Glossary of terms used in Toxicology, 765 pages
- Emerging Problem of Novel Psychoactive Drugs
- Successful Drug Discovery Books 1 and 2
- Steering Committee with IFCC for Promotion of NPU Terminology in Clinical Chemistry
- Mapping IFCC-IUPAC Laboratory Coding System to SNOMED CT
- Compendium of Terminology & Nomenclature of Properties in Clinical Laboratory Sciences (Silver Book Revision)

•
ICTNS (Interdivisional Committee on Terminology, Nomenclature and Symbols)

As a member of this Committee, I participate in the review of the scientific papers within my expertise. During this meeting, strategies were developed pertinent to the objectives of the ICTNS.

Award Meeting 'Women in Chemistry'

During the '2017 Distinguished Women in Chemistry and Chemical Engineering' eight women scientists highlighted their achievements in chemistry and received the IUPAC award.

Council Meeting on 2017-07-12 and 2017-07-13

The IUPAC President, Professor Natalia Tarasova (Russia), the Secretary General Professor Richard M. Hartshorn (New Zealand), and the Treasurer Mr. Colin Humphris (UK), reported on the state of affairs of the Union.

The Division Presidents reported on the activities achieved by their respective Divisions.

Professor Qi-Feng Zhou (China) who is now Vice President and President Elect will become President for the next biennium.

Union Officers and Bureau Members for the new biennium were elected and the elections of Officers of Divisions were approved.

Rita Cornelis will become President of Division VII for the next biennium.

A great challenge for IUPAC remains its finances. Due to reduced revenues from their investments and increased costs for running the organization, the balance of the last 2 years was again negative. It was necessary to dig into the reserves to cover debts.

The next General Assembly will be held in Paris from 5 – 2 July 2019.



Royal Academy for
Overseas Sciences

Multidisciplinary Workshop

Disasters and resilience in the 21st Century



11 December, 2017

Programme

Venue:
Espace Baudouin
Palais des Académies - Paleis der Academiën
Rue Ducale - 1 - Hertogsstraat
1000 Brussels

Financially supported by



BNCGS

PROGRAMME

08.30 – 09.00 Registration & Poster installation

09.00 – 09.20 Welcome Address, Prof. Philippe Goyens, RAOS Permanent Secretary Introduction, Dr Thierry De Putter, Royal Museum for Central Africa & RAOS Member

Session I

Chair: Thierry DE PUTTER, Royal Museum for Central Africa & RAOS Member and Philippe Goyens, RAOS Permanent Secretary

09.20 – 09.40 **A brief history of disaster risk reduction and resilience building**

HAGHEBAERT Bruno, International Federation of Red Cross & Red Crescent Societies, Geneva, Switzerland.

09.40 – 10.00 **Sustainability vs. resilience: thinking about disasters beyond binaries**

SALAZAR Noel, Interculturalism, Migration and Minorities Research Centre, KU Leuven & Vice-President IUAES, Member Young Academy of Belgium, Belgium

10.00 – 10.20 **Recent evolution of the coastline in the Gulf of Guinea: example of Togo and Benin (2000-2015)**

OZER Pierre, Department of Environmental Sciences and Management, Université de Liège, Belgium & RAOS Member

10.20 – 10.40 **Climate-proof aid? Testing the credibility of how adaptation projects are categorized**

WEIKMANS Romain, Centre for Studies on Sustainable Development, Institute for Environmental Management and Land Use Planning, Université Libre de Bruxelles, Belgium.

10.40 - 11.20 Coffee break & Poster session

Session II

Chair: Cecile Baeteman, Royal Belgian Institute of Natural Sciences & RAOS Member and Prof. Pierre Ozer, Université de Liège & RAOS Member

11.20 – 11.40 **Landslide risk in Equatorial Africa: mapping and understanding causes, impact and resilience strategies with local communities**

DEWITTE Olivier, Department of Earth Sciences, Royal Museum for Central Africa, Tervuren, Belgium

11.40 – 12.00 **A multi-sensor approach to characterise the spatio-temporal dynamics of landslides in tropical urban environment: focus on Bukavu**

DILLE Antoine, Department of Earth Sciences, Royal Museum for Central Africa, Tervuren, Belgium & Department of Geography, Vrije Universiteit Brussel, Brussels, Belgium

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12.00 – 12.20 **Investing in land to change your risk exposure? Land transaction in a landslide-prone region**
MERTENS Kewan, Department of Earth and Environmental Sciences, KU Leuven, Leuven, Belgium

12.20 – 12.40 **The persisting gap between knowledge and action in disaster risk reduction: evidence from landslides in Uganda and Cameroon**
MAES Jan, Department of Geography, Vrije Universiteit Brussel, Brussels & Department of Earth and Environmental Sciences, KU Leuven, Leuven, Belgium

12.40 – 13.50 Lunch + Poster session

Session III

Chair: Thierry Camelbeeck, Royal Observatory of Belgium & RAOS Member and André Ozer, Université de Liège & RAOS Member

13.40 – 14.00 **Learning from experience in the DR Congo context: the assessment of the risk associated to major geohazards in DRC**
KERVYN François, Earth Sciences and Natural Hazards, Royal Museum for Central Africa, Tervuren, Belgium

14.00 – 14.20 **Contribution to geo-risk prevention: population vulnerability assessment in Goma and Bukavu (DR Congo)**
MICHELLIER Caroline, Earth Sciences and Natural Hazards, Royal Museum for Central Africa, Tervuren & Institut de Gestion de l'Environnement et d'Aménagement du Territoire, Université Libre de Bruxelles, Bruxelles, Belgium

14.20 – 14.40 **Disaster risk reduction (DRR) in DR Congo: policy and governance for a National Strategy and 2017-2023 Action Plan**
MAKANZU IMWANGANA Fils, Unité de Recherches et de Formation en Gestion des Risques Naturels, Département des Géosciences, Faculté des Sciences, Université de Kinshasa, Kinshasa, RD. Congo & Laboratoire de Géomorphologie et Télédétection, Centre de Recherches Géologiques et Minières, Kinshasa, RD. Congo & Natural Hazards and Cartography Unit, Earth Sciences Department, Royal Museum for Central Africa, Tervuren, Belgium

14.40 – 15.00 **Haïti: préparation communautaire inclusive aux risques de catastrophes**
FOUILLAND Julien, Handicap International's Inclusive Disaster Risk Reduction and Climate Change Adaptation Technical Advisor, Handicap International, Lyon, France

15.00 – 15.20 **Science and policy interactions result in a success story for land restoration in Tigray, N. Ethiopia**
NYSSSEN Jan, Department of Geography, Ghent University, Belgium

15.20 – 15.50 Coffee break & Poster session

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Session IV

Chair: Philippe Muchez, KULeuven & RAOS Member and Matthieu Kervyn, Vrije Universiteit Brussel & RAOS Member

- 15.50 – 16.10 **People Moved and will move again**
GEMENNE François, 1 UR SPHERES & Hugo Observatory, Université de Liège, Belgium
- 16.10 – 16.30 **Resilience in food supply chains: a scoping review**
MANOJ Dora, Operations and Supply Chain Management, Brunel University London, Brunel Business School, Uxbridge, UK
- 16.30 – 16.50 **Designing blackouts**
WALLEBORN Grégoire, Centre for Studies on Sustainable Development, Institut de Gestion de l'Environnement et d'Aménagement du Territoire, Université Libre de Bruxelles, Belgium
- 16.50 – 17.10 **Pro-social behavior after a disaster: parochial or universal? Evidence from a natural experiment**
VERWIMP Philip, European Centre for Advanced Research in Economics and Statistics (ECARES) & Centre Emile Bernheim, Solvay Brussels School of Economics and Management, Université Libre de Bruxelles, Brussels, Belgium
- 17.10 – 17.30 **The Taming of the Earthquake. Learning from Japan**
SIBISTEANU Horea, Universitatea Tehnică de Construcții București, Romania
- 17.30 – 18.00 **Discussion**

POSTERS

- Vulnérabilité aux inondations dans le contexte des changements climatiques à New-Bell Ngangue, un quartier planifié de la ville de Douala, Cameroun**
Amélie AMANEJIEU¹, Rodrigue Aimé FEUMBA², Roger NGOUFO³, Pierre OZER⁴
¹Département de géographie, Université de Yaoundé I, Cameroun /Etudiante en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique
²Département de géographie, Ecole Normale Supérieure, Université de Yaoundé I, Cameroun
³Département de géographie, Université de Yaoundé I, Cameroun
⁴UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique
- Vulnérabilité sanitaire et environnementale dans les quartiers inondables de la commune de Cap-Haïtien, Haïti**
Pontien BILOMBA NGANDU¹, Marianne VON FRENCKELL², Pierre OZER³
¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique
²Arlon Campus Environnement, Université de Liège, Belgique
³UR SPHERES, Université de Liège, Belgique / Hugo Observatory, Université de Liège, Belgique

- 3. Deposits from the 2004 Indian Ocean Tsunami in three coastal ponds in Khao Lak, Thailand**
Evelien BOES¹, Stijn ALBERS¹, Kruawun JANKAEW², Vanessa M.A. HEYVAERT^{3,1}, Ed GARRETT⁴, Marc DE BATIST¹
¹Ghent University, Ghent, Krijgslaan 281, Belgium
²Chulalongkorn University, Bangkok, Phayathai Road 254, Thailand
³Geological Survey of Belgium, Brussels, Jennerstraat 13, Belgium
⁴Durham University, Durham, South Road, UK
- 4. Les stratégies d'adaptation face au risque d'inondation dans les zones d'habitats spontanés de Ouagadougou, Burkina Faso**
Sacha BRONFORT¹, Hugues Yénoukoumè HANGNON^{2,3}, Pierre OZER³
¹Diplômé en Master en sciences et gestion de l'environnement, à finalité spécialisée pays en développement, Université de Liège, Belgique
²Laboratoire de télédétection et de système d'information géographique, Université de Ouagadougou, Burkina Faso
³UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique
- 5. Tremblements de terre, ouragans et épidémies: effets des catastrophes naturelles et des désastres sanitaires de 2010 sur les indicateurs statistiques de développement humain d'Haïti**
Marielle BRUYNINCKX, Dimitri CAUCHIE
 Université de Mons, Faculté de Psychologie et des Sciences de l'Éducation, Service de Développement humain et traitement des données, 7000 Mons, place du Parc 18, Belgique
- 6. Analyse du risque de déplacement de populations lié au projet de développement municipal et de résilience urbaine (MDUR) : cas de la commune de Cap-Haïtien, Haïti**
Luc CLERVIL¹, Pierre OZER²
¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique
²UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique
- 7. Risk management in Ivory Coast: case study of population evictions in Port-Bouët, Abidjan**
Boua Raymond COMOE¹, Pierre OZER²
¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique
²UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique
- 8. Towards a resilient urbanism and a at-risk land planning in Haiti**
Pierre CORNUT¹, Guénaél DEVILLET², Pascal SIMOENS¹
¹Mons Université, Mons, 7000, Belgium.
²Liège Université, Liège, 4000 Belgium
- 9. Investigating the management of Geological Hazards and risks in the Mount Cameroon area using Focus Group Discussions.**
Mary-Ann DEL MARMOL¹, Karen FONTIJN², Mary ATANGA^{3,3}, Steve NJOME³, George MAFANY³, Aaron TENNING³, Mabel Nechia WANTIM³, Beatrice FONGE³, Vivian BIH CHE³, Aka FESTUS^{3,4}, Gerald G. J. ERNST¹, Emmanuel SUH³, Patric JACOBS¹, Matthieu KERVYN⁶
¹Dept. of Geology, Ghent University, Krijgslaan 281/S8, B-9000 Gent, Belgium. maryann.delmarmol@ugent.be
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³Dept of Geology and Environmental Science, University of Buea, P.O. Box 63 Buea, Cameroon
⁴Minresi-Irgm, BP 4110 Yaounde, Cameroon.
⁵University of Bamenda, Fac. of Health Sciences, Dpt. Nursing, P.O.Box 39, Bamili, NWRRegion, Cameroon
⁶Dept. Geography, Vrije Universiteit Brussel, 1050 Brussel, Belgium

10. Geological structure, neotectonics and seismic hazard assessment of the Kivu Rift Basin

Damien DELVAUX¹, Jean-Luc MULUMBA², Mwene Ntabwoba Stanislas SEBANGEZI², Silvanos FIAMA BONDO³, Gloire GANZA BAMULEZI⁴, François KERVYN¹, Hans-Balder HAVENITH⁵

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²University of Lubumbashi, Dept. of Geology, Lubumbashi, DR Congo

³Centre de Recherche en Sciences Naturelles (CRSN), Dept. of Geophysics, Lwiro, DR Congo

⁴Université Officielle de Bukavu, Dept. of Geology, Bukavu, DR Congo

⁵University of Liège, Dept. of Geology, Liège, Belgium

11. Assessing landslide hazard in an urban-sprawling context: Bukavu (DR Congo)

Olivier DEWITTE¹, Damien DELVAUX¹, Antoine DILLE^{1,2}, Liesbet JACOBS^{1,2,3}, Caroline MICHELLIER¹, Elise MONSIEURS^{1,4,5}, François KERVYN¹

¹Royal Museum for Central Africa, Department of Earth Sciences, Leuvensesteenweg 13, 3080 Tervuren, Belgium.

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³KU Leuven, Division of Geography and Tourism, Celestijnenlaan 200E, 3001 Heverlee, Belgium

⁴Université de Liège, Department of Geography, Clos Mercator 3, 4000 Liège, Belgium

⁵F.R.S-FNRS, Rue d'Egmont 5, Brussels, Belgium

12. Soil characteristics of landslides on Mount Elgon (Uganda): implications for estimating their age

Elise VAN EYNDE¹, Stefaan DONDEYNE¹, Moses ISABIRYE², Jozef DECKERS¹, Jean POESEN¹

¹Department of Earth and Environmental Sciences, KU Leuven, Celestijnenlaan 200E, Leuven 3001, Belgium.

²Department of Natural Resources Economics, Busitema University, Tororo, Uganda

13. GEN-EX – Metagenomics of Extreme-Wave Events

Max ENGEL¹, Isa SCHÖN², Tasnim PATEL², Sue DAWSON³, Ed GARRETT^{1,4}, Vanessa M.A. HEYVAERT^{1,5}

¹Royal Belgian Institute of Natural Sciences, OD Earth and History of Life, Geological Survey of Belgium, Jennerstraat 13, 1000 Brussels, Belgium

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³University of Dundee, Department of Geography, Tower Building, Nethergate, Dundee DD1 4HN, UK

⁴Durham University, Department of Geography, South Road, Durham, DH1 3LE, UK

⁵Ghent University, Department of Geology, Krijgslaan 281, 9000 Ghent, Belgium

14. «Cap-Haïtien» or «how to 'construct' a flood risk in a decade»

Gracia Joseph GRACIUS¹, Pierre OZER²

¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique

²UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique

15. Citizen science for disaster risk reduction: a geo-observer network in the Rwenzori Mountains

Liesbet JACOBS^{1,2,3}, Olivier DEWITTE¹, Jan MAES^{2,3}, Kewan MERTENS⁴, Clovis KABASEKE⁵, Matthieu KERVYN²

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³KU Leuven, Division of Geography and Tourism, Celestijnenlaan 200E, 3001 Leuven, Belgium

⁴KU Leuven, Division of Bio-economics, Celestijnenlaan 200E, 3001 Heverlee, Belgium

⁵School of Agricultural and Environmental Sciences, Mountains of the Moon University, Fort Portal, Uganda

16. Geological evidence for extreme wave events on a coastal lowland facing the Tōkai segment of the Nankai-Suruga Trough

Philipp KEMPF¹, Ed GARRETT², Osamu FUJIWARA³, Atsunori NAKAMURA³, Vanessa M.A. HEYVAERT^{1,4} and the QuakeRecNankai Team

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²Department of Geography and Institute of Hazard, Risk and Resilience, Durham University, United Kingdom

³Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology, Japan

⁴Department of Geology and Soil Science, Ghent University, Belgium

17. Les effets probables de la loi 034/2009 relative à la sécurisation foncière rurale au Burkina Faso sur les migrants agricoles des grandes sécheresses des années 1970 et 1980

Quango KOALA¹, Florence DE LONGUEVILLE², Pierre OZER³

¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique

²Département de géographie, Université de Namur, Belgique

³UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique

18. The natural paleohazard history of Fuji Five Lakes (Mt. Fuji, Japan) over the last ca. 6000 years

Laura LAMAIR^{1,5}, Aurélie HUBERT-FERRARI¹, Shinya YAMAMOTO², Masanobu SHISHIKUA⁶, Osamu FUJIWARA⁶, Evelien BOES⁴, Stephen OBROCHTA⁸, Atsunori NAKAMURA⁶, Yosuke MIYAIRI⁷, Yusuke YOKOYAMA⁷, Marc DE BATIST, Vanessa M.A. HEYVAERT^{3,5} and the QuakeRecNankai Team

QuakeRecNankai Team: Ed GARRETT, Helmut BRÜCKNER, Eisuke ONO, Svenja RIEDESEL, Koen DE RYCKER, Yoshiki SATO, Jan WALSTRA.

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³Ghent University, Department of Geology, Ghent, Belgium

⁴Ghent University, Renard Centre of Marine Geology, Department of Geology, Ghent, Belgium

⁵Geological Survey of Belgium, Royal Belgian Institute of Natural Sciences, Brussels, Belgium

⁶National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

⁷University of Tokyo, Atmosphere and Ocean Research Institute, Chiba, Japan

⁸Akita University, Graduate School of Earth Resource Science, Akita, Japan

19. Incorporation des dispositifs internationaux et régionaux en matière de réduction des risques de catastrophe et de protection des déplacés, dans le cadre de la législation interne. le cas du Burkina Faso

Maude LINOTTE¹, Hugues Yénoukoumè HANGNON^{2,3}, Pierre OZER³

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³UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique

20. Vulnérabilité et adaptation des communautés lacustres aux inondations à Sô-Ava dans la basse vallée de l'Ouémé au Bénin

Martin Augustin LOKOSSOU¹, Florence DE LONGUEVILLE², Pierre OZER³

¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique

²Département de géographie, Université de Namur, Belgique

³UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique

21. Estimating exposure to lava flow hazard on Ngazidja Island (Comoros)

Sophie MOSSOUX^{1,2}, Frank CANTERS¹, Matthieu KERVYN²

¹Cartography and GIS Research Group, Department of Geography, Vrije Universiteit Brussel, Brussels, Belgium

²Physical Geography, Department of Geography, Earth System Science, Vrije Universiteit Brussel, Brussels, Belgium

22. Analyse contextuelle des inondations survenues en Algérie entre 1921 et 2016

Myriem NOURI

Département des Sciences et Gestion de l'Environnement, Université de Liège, Arlon, Belgique.

23. Risk and Disaster Management: Case of Nyiragongo Volcano in the Western Rift Valley in the Great Lakes Region of Africa (Democratic Republic of Congo and Rwanda)

Jean NSENGIYUMVA

Consultant indépendant, National Coordinator, APPE-RWANDA PO BOX 61 MUSANZE, RWANDA

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24. Socio-natural hazards and response among small-scale gold miners in Itogon, PhilippinesLou Angeli OCAMPO

PhD Student, LAPLEC, Université de Liège, Belgium

25. Coastal flood risks and tourism: Is tourism influencing flood risk management at the Belgian and Dutch coast?Jan PATFOORT², Dominique VANNESTE¹, Mathieu KERVYN²¹KU Leuven, Division of Geography and Tourism, Celestijnenlaan 200E, 3001 Heverlee, Belgium²Vrije Universiteit Brussel, Department of Geography, Earth System Science, Pleinlaan 2, 1050 Elsene, Belgium**26. New Perspectives offered by SfM-MVS Photogrammetry for Volcano Monitoring and Risk Mapping in the Virunga Volcanic Province (D.R.Congo)**Benoît SMETS¹, Caroline MICHELLIER¹, Nicolas D'OREYE^{2,3}, François KERVYN¹¹Royal Museum for Central Africa, 13 Leuvensesteenweg, 3080 Tervuren, Belgium²European Centre for Geodynamics and Seismology, 19 Rue Josy Welter, 7256, Walferdange, Luxembourg³Musée National d'Histoire Naturelle, 19 Rue Josy Welter, 7256, Walferdange, Luxembourg**27. Exposition et vulnérabilité face aux risques d'inondation au Burkina Faso : Cas de la ville de Dori**Yaovi Djivénou TOMETY¹, Benjamin DEWALS², Pierre OZER³¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique²Département ArGenCo, Hydraulics in Environmental and Civil Engineering, Université de Liège, Belgique³UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique**28. Insight into the urban growth-driven degradation of green spaces in Lubumbashi (D.R. Congo): spatial analysis and perception of local experts**Yannick USENI SIKUZANI^{1,2}, Justine MARECHAL³, François MALAÏSSÉ³, César NKUKU KHONDE^{2,4}, Grégory MAHY³, Jan BOGAERT³ & François MUNYEMBA KANKUMBI^{1,2}¹Ecology, Restoration Ecology and Landscape Research Unit, Faculty of Agricultural Sciences, University of Lubumbashi, P.O. Box 1825, Campus universitaire, Lubumbashi, DR. Congo.²CCPGU—Centre de Compétences en Planification et Gestion Urbaine, University of Lubumbashi, P.O. Box 1825, Building administratif, Lubumbashi, DR. Congo³Biosystems Engineering Department, Biodiversity and Landscape Unit, University of Liège, Gembloux Agro-Bio Tech, 2 Passage des déportés, 5030 Gembloux, Belgium⁴Faculty of Arts and Human Sciences, Department of History, University of Lubumbashi, P.O. Box 1825, Campus universitaire, Lubumbashi, DR. Congo**29. 3D dynamic flood impact assessment and visualisation tool**Samuel VAN ACKERE

PhD student | Flood impact assessment

Faculty of Sciences, Department of Geography, Ghent University, Krijgslaan 281 (building S8), Ghent, Belgium

30. Digital photogrammetry for the documentation of threatened archaeological sites and structures: the Valley of Turu Alty in Siberia, RussiaAnnelies VANDENBULCKE¹, Wouter Gheyle², Jean Bourgeois², Alain De Wulf¹¹Department of Geography, Ghent University, Ghent, 9000, Belgium.²Department of Archaeology, Ghent University, Ghent, 9000, Belgium**31. Prevention and Mitigation of Urban Gullies (PREMITURG): Lessons learned from Failures and Successes**Matthias VANMAERCKE¹, Fils MAKANZU IMWANGANA^{2,3}, Serge COGELS⁴, Olivier DEWITTE⁵, Theodore TREFON⁵, Charles BIELDERS⁶, Jean POESEN⁷, Robert WAZI NANDEFO⁸, Willy MBALANDA LAWUNDA⁹

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⁴Université de Mons, Ecole des Sciences Humaines et Sociales, Sociologie et Anthropologie ;
⁵Royal Museum for Central Africa, Department of Earth Sciences;
⁶Université catholique de Louvain, Earth and Life Institute – Environmental Sciences ;
⁷KU Leuven, Department of Earth and Environmental Sciences
⁸Université Officielle de Bukavu, Département de Géologie ;
⁹Université de Kinshasa, Département de Sociologie

32. Developing a Flood Prone, Informal Urban Area Under Pressure in Dar es Salaam, Tanzania: an Architect's Perspective

Peggy WINKELS¹, Els HANNES¹, Bart JANSSENS¹, Daniel MBISSO²

¹Faculty of Architecture and Arts, Hasselt University, BE 3500 Hasselt, Martelarenlaan 42, Belgium

²School of Architecture, Construction, Economics and Management, ARDHI University, Dar es Salaam P.O. Box 35176 Tanzania

33. Contribution des Systèmes d'Information Géographique pour la cartographie des zones à risques d'inondation à Yaoundé

Maurice Olivier ZOGNING MOFFO¹, Pierre OZER², Benjamin DEWALS³

¹Diplômé en Master de spécialisation en Gestion des risques et des catastrophes, Université de Liège, Belgique

²UR SPHERES, Université de Liège, Belgique /Hugo Observatory, Université de Liège, Belgique

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Current Highlights in Microbiology

Brussels, October 20, 2017

08.30	Registration – Poster mounting
09.00	Welcome address: GR Cornelis, Chairman of BSM
09.10	Session A: General Microbiology - Chair: X De Bolle Plenary speaker: Eric Cascales , Aix-Marseille Université Marseille, FR <i>The Type VI Secretion System in Escherichia coli and Related Species</i>
09.55	Bram Van den Bergh , CMPG lab, KU Leuven and VIB Laboratory of Symbiotic and Pathogenic Interactions, Leuven <i>Respiratory complex I variants, selected during evolution under frequent antibiotic treatment, induce bacterial persister cell formation through cytoplasmic acidification</i>
10.05	Dukas Jurėnas , Cellular and Molecular Microbiology, Université Libre de Bruxelles <i>Functional and structural analysis of AtaT – an acetyltransferase toxin from toxin-antitoxin system</i>
10.15	Session B: Applied and Environmental Microbiology - Chair: N Boon Plenary speaker: Rainer Meckenstock Universität Duisburg-Essen DE <i>Ecological principles governing anaerobic degradation of oil</i>
11.00	Harry Lerner , Division of Soil and Water Management, KU Leuven <i>Phylogenetic and functional analysis of linuron mineralizing microbiota in on farm biopurification systems through a combination of DNA Stable Isotope Probing and Next Generation Sequencing</i>
11.10	Indra Bervoets , Research group of Microbiology, Vrije Universiteit Brussel, Belgium <i>Sigma factors, anti-sigma factors and promoter libraries for orthogonal gene expression and modular control of complex pathways in Escherichia coli</i>
11.20	Coffee break and poster viewing
11.40	Session C: Medical and Veterinary Microbiology - Chairs: X Saelens / P Cos Plenary speaker: Christina Ehrardt , University of Münster, DE <i>Novel insights in molecular mechanisms of pathogen-host interactions during influenza virus and Staphylococcus aureus co-infection</i>
12.25	Karl-Jan Spittaels , Laboratory of Pharmaceutical Microbiology, Ghent University <i>An artificial sebum model to explore Propionibacterium acnes biofilm</i>
12.35	Damien Thiry , Bacteriology and Pathology of Bacterial Diseases , Department of Infectious and Parasitic Diseases, FARAH research center, Faculty of Veterinary Medicine, Liège Université <i>Implementation of the Galleria mellonella larvae model to evaluate phage therapy against Klebsiella pneumoniae</i>
12.45	BSM General Assembly
13.00	Lunch and poster sessions
14.30	Keynote Lecture Session D: Host and microbial interactions - Chair: GR Cornelis

	Keynote speaker: Scott Hultgren , Washington University, Saint-Louis, Missouri, USA <i>Urinary tract infection Complexity Results from Diversity at the Bacterial-Host Interface</i>
15.20	Kristof Moonens , Structural Biology Research Center, VIB, Brussels <i>Specificity of Helicobacter pylori towards human host receptors</i>
15.30	Victoria Vassen , Research Unit in Biology of Microorganisms (URBM), University of Namur <i>Insertion of new components in the heterogeneous outer membrane of Brucella abortus</i>
15.40	BSM honorary Lecture - Chair: D Schols Koen Andries , Infectious Diseases Discovery, Janssen Pharmaceutica N.V. BE <i>The rocky road to success of bedaquiline, a novel powerful addition to the treatment of drug-resistant tuberculosis</i>
16.30	María Boto-Ordóñez , KASK / School of Arts of University College Ghent <i>Exploring the possibilities of art-science collaborations by using color as research medium</i>
16.40	<i>Announcement of poster awards</i> <i>Belgian Agar Art Award 2017</i>
16.50	<i>End of the meeting</i>

Report on the General Assembly of IUPAP Sao Paulo, October 11-13, 2017

Belgian delegate: R. Weynants, chair of NCPAP

1. The GA took place at the premises of the University of Sao Paulo, Sao Paulo, Brazil. There were about 120 attendees, representing the 60 member states and the various commissions and associated committees of IUPAP. The agenda can be found as **Appendix 1**.

2. A budget of 640,500 Euro for 2018 was approved, with an expected surplus of 16336 EURO. The reserves on 31/12/16 reached 1.27 MEuro. Roughly 30% of the budget goes to supporting conferences.

3. IUPAP has now its own physical premises at the Nanyang Technical University (NTU) in Singapore. An MOU has recently been signed between the President of NTU and IUPAP.

4. Some member states are increasing their shares in IUPAP: India goes from 8 to 15, Singapore from 1 to 2. Whereas each country is entitled to as much Commission members as it has shares, the difference between these numbers is hereby further increasing since the number of members of each Commission remains 14.

5. In the afternoons of October 11-13 a quite successful Workshop on "New Challenges in Pure and Applied Physics" was held, with presentations from members of each Commission on the most striking recent developments in their field.

6. The discussions resulted in a number of resolutions that were approved by the GA. The contents are the following:

(i) An increase of the membership contribution of 3.1 % will be imposed in each of the years 2015-2017, going from 2276 Euro in 2018 to 2420 in 2020.

(ii) Concerning commission membership the following rulings/clarifications were made:

a. When a member retires from a Commission during a term and is replaced, if the replacement member serves more than half of the term, they are counted as a member for that term in determining terms of service. If the replacement member serves less than half of the normal term, that service shall be disregarded in determining terms of service.

b. The term of office begins 1 January after each General Assembly and ends 31 December of the year of the next GA.

(iii) After consideration of the reports of the Working Groups the 29th GA resolves that all working groups except WG5 and Interim WG15 be continued until 2020, and delegates to the EC the authority to approve those changes to the membership of Working Groups which it sees as appropriate.

(iv) The working group on Women in Physics (WG5) will be continued for 6 years until 2023. The GA resolves to encourage IUPAP-sponsored conferences to include more female plenary speakers, and asks that the number of males and females at the conference be reported in the conference report to IUPAP.

(v) Whereas the formation of an IUPAP Commission on Soft Matter Physics was proposed in 2011 and again in 2014, the idea was apparently met with strong reservations and the EC established an Interim Working Group on Soft Matter Physics (WG15) only in April 2017. This WG is now asked to advise the 30th GA in 2020 on “how to ensure that IUPAP continues to nurture Soft Matter Physics”.

(vi) The General Assembly approves a new mandate for C17 (Laser Physics and Photonics), to specifically include interaction with matter and the application to science and technology.

(vii) The GA establishes a Neutrino Physics Panel to promote international collaboration on the development of neutrino experiments.

(viii) IUPAP strongly supports the establishment of 2022 as the International Year of Basic Science for Development.

(ix) The GA resolves that IUPAP will vote for the proposed merging of ICSU and ISSC at the upcoming GA of ICSU.

(x) The GA establishes a Working Group on Physics and Industry.

(xi) The GA also establishes a Working Group on the Centenary of IUPAP to advise how to commemorate and celebrate the centenary of the creation of IUPAP in 2022 and the centenary of the first IUPAP GA in 2023.

(xii) The GA expresses its pleasure on the successful opening of the SESAME facilities and pledges its continued support.

(xiii) The GA strongly supports the proposed revision of the International System of Units in which the current definitions of the kilogram, the ampere, the kelvin and the mole will be replaced with definitions that fix the values of the Planck constant, the elementary electric charge, the Boltzmann constant and the Avogadro number.

(xiv) The GA resolves to send a letter to the President of Brazil and to the Minister of Science, Technology and Communications to explain the effects that the serious cuts in the science budget might have on the Brazilian research groups and on the economical future of the country.

7. The following Board will lead IUPAP from 2018 till 2020:

- President: Kennedy Reed (USA)
- President Designate: Michel Spiro (France)
- Past President: Bruce McKellar (Australia)
- Secretary General: Kok Khoo Phua (Singapore)
- Ass. Sec. General: Rudzani Nemutudi (S-Africa)

8. The following Belgian physicists, presented by the NCPAP, were elected as Commission members for the period 2018-2020:

Physics for Development (C13): C.S. Iorio (ULB)

Plasma Physics (C16): J. Ongena (KMS-ERM)

Mathematical Physics (C18): A. Sevrin (VUB)

Astrophysics (C19): C. Aerts (KU Leuven)

To put this outcome in perspective, it should be noted that Belgium is in principle entitled to a number of members corresponding to its share in the TUPAP financing (i.e. 4). Each of the 11 Belgian nominees (the list of which is given as **Appendix 3**) has therefore been in competition, not only with the nominees of the other 59 country members, but also with the other Belgian nominees. It is therefore appropriate to congratulate not only those that were selected but all nominees for portraying such an image of excellence of Belgian Physics in the eyes of their peers.

Appendix 1

Agenda
29th IUPAP General Assembly
University Rector Building- Superior Council Room
R. da Rectoria, 374, Cidade Universitária, São Paulo -- SP, CEP: 05508-220 Tel: +55 11 3091-3500
University of São Paulo
11 to 13 October 2017

Day 0

Tuesday 10 October 2017

4:00pm Registration

In front of the Superior Council Room, 10th and 11th October

6:00pm to 6:40pm Welcome Concert

offered by the Orquestra Sinfônica da USP (OSUSP),
with light refreshments for all GA participants

Organised by Hosts

Venue: IDC Auditorium

7:30pm – 9:00pm

Public lecture by Prof William Phillips

(Nobel Laureate in Physics, 1997)

Venue: IDC Auditorium

Day 1 Wednesday 11 October 2017

Item	Time	Subject	Documents
	8:00 am	Registration in front of the Superior Council Room	
1	9:00 am	Welcome IUPAP President Bruce McKellar LOC Chair Vanderlei Bagnato SBF President/Representative	
2	9:30 am	Recognition of Previous officers Adoption of Agenda Approval of minutes of 28th General Assembly	Minutes under 28th General Assembly on IUPAP website
3	9:40 am	Presidential Address Bruce McKellar - In Physics Today: Commentary: International Union of Pure and Applied Physics and you by the President (http://physicstoday.scitation.org/doi/10.1063/PT.3.3707)	
4	9:50 am	Report of Secretary General Kok Khoo Phua	
5	10:00 am	Ratification of Decisions of the Council 2015-2017	
6	10:20 am	IUPAP Financial Report 2015-2017 Proposal for Dues 2018-2020	
	10:35 am	Tea Break	
7	11:00 am	Presentation of States of Commissions and Executive Council	Nominations are accessible via login details provided to delegates
8	11:45 am	Questions to a Panel of Chairs of Commissions	
9	12:35 pm	Presentation of the IUPAP Medal for outstanding contributions to the enhancement of Physics in developing countries <ul style="list-style-type: none"> • Introduction of the winner by Sandro Scandolo, the Chair of C13 • Presentation of the Medal • Acceptance by the winner 	
	1:00pm	GA adjourns	
	1:00pm to 2:00 pm	Lunch at Brasilianna Library	
	2:30pm to 7:00pm	Workshop on "New Challenges in Pure and Applied Physics"	

Day 2
Thursday 12 October 2017

Item	Time	Subject	Documents
<i>Bus to the GA venue from the Hotel Ibis Stylus will begin from 7:30am and the last bus will leave at 8:30am. Those participants, who are in other hotels, can take a taxi to Hotel Ibis Stylus and join the shuttle bus or can come directly to the venue in the Campus: University Rector Building.</i>			
10	9:00 am	Welcome back	
11	9:05 am	Conferences approved for 2018 Ruzani Nemutudi	
12	9:20 am	Introduction of Proposed Resolutions, including recommendations of Council	
	10:30 am	Coffee Break	
13	11:00 am	Re-Nominations to State of Commissions and Executive Council	
14	11:30 am	Questions to a Panel of Working Group Chairs	
15	12:15 pm	The proposed ICSU-ISSC merger	
	1:00pm	GA adjourns	
	1:00pm to 2:00pm	Lunch at Brasiliaa Library	
	2:30pm to 7:00pm	Workshop on "New Challenges in Pure and Applied Physics"	
	6.30pm	Transport to Banquet	
	7:30pm	Dinner Banquet – Organised by hosts (By Invitation)	

Day 3
Friday 13 October 2017

Item	Time	Subject	Documents
<i>Bus to the GA venue from the Hotel Ibis Stylus will begin from 7:30am and the last bus will leave at 8:30am. Those participants, who are in other hotels, can take a taxi to Hotel Ibis Stylus and join the shuttle bus or can come directly to the venue in the Campus: University Rector Building.</i>			
16	9:00 am	Welcome back	
17	9:05 am	Election of Commissions	
18	9:30 am	Election of Executive Council	
19	9:40 am	UNESCO; MOU SESAME Proposal for 2022 The International Year of Basic Sciences for Development	
20	10:25 am	Votes on Resolutions	
21	10:50 am	Any other business	
	11:00 am	Coffee Break	
22	11:30 am	Introduction of the President Designate	
23	12:00 pm	Some words from the New President	
	12:30 pm	Closing	
	1:00pm to 2:00 pm	Lunch Buffet next to the GA Meeting	
	2:30pm to 7:00pm	Workshop on "New Challenges in Pure and Applied Physics"	

Appendix 2 List of Belgian nominees for IUPAP Commissions

Commission	Name	Nominee
C2		
C3	Statistical Physics	Chr. Maes (KU Leuven)
C4	Astrophysical Particles	A. De Roock
C5	Low Temperature Physics	C. van Haesendonck (KU Leuven)
C8	Semiconductors	F. Peeters (U Antwerpen)
C10	Condensed Matter	Ph. Lambin (UNamur)
C12	Nuclear Physics	N. Severijns (KU Leuven)
C13	Physics for Development	C.S. Torio (UL Bruxelles)
C15	Atomic, Molecular and Optical Physics	X. Urbain (UCLouvain)
C16	Plasma Physics	J. Ongena (KMS-IRAM)
C18	Mathematical Physics	A. Sevrin (VUBrussel)
C19	Astrophysics	C. Aerts (KU Leuven)

Report on the IUPS General Assembly held in Riocentro Conference Center in Rio de Janeiro (August 1, 9-12 am) during the 38th World Congress of the International Union of Physiological Sciences (IUPS) (August 1- August 5th 2017).

Johan Van de Voorde, representative of the Belgian Society of Physiology and Pharmacology.

The meeting started at 9.00 am.

The agenda of the meeting was approved as were the minutes from the 2013 IUPS General Assembly meeting (Birmingham, UK)

The officers presented their report, stressing the important efforts made by IUPS to strengthen the position of physiology in scientific community and to try to create “regions of physiological societies” which could represent better the societies within IUPS than the smaller individual societies.

Hugh attention was given to the recently published document “Physiology: current trends and future challenges”. (111 pages, summary: http://www.iups.org/media/other_reports/Executive_Summary_of_BGA_Report_and_Companion_Essays.pdf). This landmark report outlines seven recommendations to help physiologists and professional scientific societies grow and support physiology amid domestic and international funding shortages; changes to the way physiologists learn, practice, and collaborate; and shifting public support for science. In addition to the recommendations, the report discusses nation-based strategies for improving local landscapes for physiologists and highlights major global achievements in physiology. Also included are eight essays penned by leading researchers reflecting the progress, status, and challenges in the physiological sciences worldwide.

Publications supported by IUPS, namely “Physiology” (only review papers, Impact Factor 6.541) and a new one “Physiome” related to modeling in physiology were discussed.

Then election was done for the Council in the period of 2017-2021. The work of the nominating committee was appreciated leading to a proposal for 19 Council members considering region, gender, scientific experience These proposals were all accepted. A runoff election was needed between S. Ferreira and V. Antunes to appoint a South American representative. After a short presentation by the candidates V. Antunes was elected. The executive committee of IUPS for the next four years will consist of Julie Chan (Taiwan) as president, Susan Wray (United Kingdom) as 1st vice president, Peter Hunter (New Zealand) as 2nd vice president, Ulrich Pohl (Germany) as Secretary-General and Patricia Molina (United States) as treasurer.

The candidature of the physiological society of Sri Lanka to become a member of IUPS was accepted.

The organizers of IUPS 38th World Congress in Rio de Janeiro provided information on the meeting. There were 1479 participants, including 815 from Brasil and 5 from Belgium (3 speakers, 2 posters).

The organizers of IUPS 39th World Congress in Beijing (2021) provided the actual status of the organization of the meeting. It will be held in October. Beijing was reconfirmed as location of IUPS-2021.

There was only one bid to host IUPS 40th World Congress in 2025. It was made by a consortium of several bigger European Physiological Societies and will be organized in Munich (Germany). This bid was approved by the General Assembly.

The meeting closed at 12.00 and the delegates present at the General Assembly were invited for a thorough discussion on the report “Physiology: current trends and future challenges” in the afternoon.

Scientific Report XXXIInd URSI General Assembly

Montréal (August 19-26 2017)

First, my apologies for the late report (December, 8, 2017), since the official council minutes have only been distributed about a week ago (I usually append them at the end of this report).

19/08/2017 (Saturday)

The first day was used to fulfil the administrative formalities like getting the badge, tickets, printed programme and the full proceedings on a memory stick, as well as preparing the different meetings and presentations. Even if the "Palais des congrès" is above a highway and a subway (Fig. 1), no vibrations or any other disruptive noises were noticed (unfortunately, the acoustics were not as well in the 2008 GA in Chicago, where traffic noises could be heard). The construction of the congress centre was obviously well engineered. This time I found a reasonable (but still expensive) hotel within walking distance of this "Palais des congrès".



Fig. 1: The "Palais des congrès", where the general assembly was held.

20/08/2017 (Sunday)

The first council starts as planned on Sunday morning at 8.00 . After the thanks of the president to the Canadian committee, who also addressed us shortly to welcome us, the more detailed parts of the agenda are dealt with (see appendix 1). The commissions will get more financial means to stimulate activities in their field.

Now, there are 4 assistants secretaries, i.e. 2 extra for AP-RASC (K. Kobayashi) and AI-RASC (G. Uslenghi). After the problem year (2015), the finances are now break-even.

The council decides that Bulgaria and Ukraine are moved to the associated member status, since they did not pay their dues for the last 6 years (it already did happen for Greece, due to that nation's state of the finances, but those agreed with this). Of course all those countries will be welcomed back as soon as their finances allow it (like it happened in the past for Nigeria and Peru).

All flagship meetings will from now on be backed by a local organization (who should make sure that the finances as well as the scientific content should be positive).

The financial statement emphasizes that the assets have been doubled (without inflation) since 1993. We thank the secretary general for this. The income was in 1993 177k€, now 176 k€. The secretary general mentions indeed the inflation rate (1.7 %/year), so that the income is in fact much lower than 24 years ago. The secretary general emphasizes to financial independence is the organization of large conferences. The financial statements are audited by FY.

The votes for vice-presidents are processed during the coffee (the president and secretary general are nominated since nobody opposed it).

The first elected is Prof. Ari Shivola.
The second is Prof. Giorgio Uslenghi
The third is Prof. Willem Baan
The fourth is Prof. Ondrej Santolik

The AT- and AP-RASC, as well as the GA2017 are debriefed from the viewpoint of papers, attendants, ...

The resolutions are mentioned.

The discussion on the member committees is started.

The president of ICSU explains the structures and the support for sustainable development. He then proceeds about the collaboration with ISSC (Social Sciences).

Presentations of possible new venues. The first figure is the planned registration fee, the second is the planned benefit for URSI.

- 1) Italy. 630 €; 125 k€. The new congress centre is too expensive: 250 k€ for one week!
- 2) Japan. 600 €; 21 k€.
- 3) Warsaw. 680 € including lunches; 20% to URSI + 40 Euro €
- 4) Singapore. 1000 US\$; in the excessively luxurious Marina bay hotel

Only Rome withdraws from an eventual organisation in 2023; the rest accepts to do it in 2023.

Then followed the opening ceremony in the large auditorium (afterwards, it could be divided into smaller rooms for sessions). The entrance is shown in Fig. 2.



Fig. 2: Entrance of the main room.

It included the remembrance of the deceased members, including prof. Paul Delogne from UCL, and the former president of India, who opened in person the 2005 GA. Finally, the day ended with the opening reception on the highest floor with some artists of the cirque du soleil performing acrobatics amongst us.

21/08/2017 (Monday)

After the introductory session on the activities of commission A, I attended session C1: (communication for the smart grid). Essentially, different systems (wireless, wired, ...) were investigated by the different authors. Only the second made concrete simulations with the influence of packet sizes and number of nodes on delays, ...

After the general lecture, I followed the state of the ionosphere from the Millstone Hill (MA, USA) sounder during the local solar eclipse (about 70%). This sounder is fully equivalent to the one installed in Dourbes in Belgium.

Finally I followed the session on Millimetre-Wave Propagation and Remote Sensing (1), since it was describing a mm wave limb sounder with cryocooler (SMILES-2). It was unfortunately the only paper of this session that was presented.

The commission A meeting in room 511ad starts at 17:40. with the presentation of the different delegates. 2 candidates should be provided. A vote gave the first to dr. Koyama and then to prof. Sen Gupta. They will be proposed to the council. Vice chair, Carvalho and Sen Gupta are proposed in this order. For the ECR, we propose dr. Noshawan Shoaib from Pakistan and Kesh-Dubey from India as second. Carvalho and Cruz are proposed as an associate editor, as well as Tian Hong Loh (UK).

The working group on education will be discussed in the next meeting.

Action points: AT-RASC deadline January 10 May 28-June 1; propose sessions.GA

AP-RASC New Delhi April 2019

GA 2020

Young Scientists.

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22/08/2017 (Tuesday)

I attended many sessions, but here, I did present the paper of one of my doctoral students (14:20-14:40):

Vanhamel J., Berkenbosch S., Dekemper E., Leroux P., Neefs E., Van Lil E. 2017. [Testing of a possible RF-generator for a Space Based AOTF application in the Frame of an ESA Space Mission](#). In *URSI GA 2017*, vol.XXXII (1):1105 Session A7-2 Cannon P. (eds.) URSI GA 2017, Montréal, 19-26 August 2017. , pp. A7-2-1-A7-2-4

All KU Leuven papers are freely available on Lirias, by clicking on the link above.

Council II (see appendix 2) started at 17:00.

Since some commissions did not propose the candidates, those agenda points are postponed.

A global comparison of the 4 candidates for the GA 2020 is given.

23/08/2017 (Wednesday)

After the tutorial of prof. Salous and on channel sounding, I attended the general lecture on commission H on lightning. Prof. Cummer described the sprites above the clouds of size $40 \times 40 \times 40$ km³. They go down from top (lower ionosphere) to bottom.

But "jets" are going from bottom up in tropics and moves 150 Coulomb at a time to the ionosphere.

These newly discovered phenomena are now monitored with FORMOSAT & GOES-R satellites.

Density of the lightnings is maximal essentially around the equator. Taranis mission results are planned for 2019. Nice pictures can be seen on the web site:

<https://taranis.cnes.fr/en/home-36>

After the meeting of the European committees during lunch time, where shortly the organization of the Belgian committee and its members (11 honorary, 16 effective and 30 associate members) that can all be reached through the web site ursi.be, we mentioned the national meetings (2/year in the last triennium), as well as the BENELUX meetings, called fora of which 2 were organized in Belgium, at the UCL and at the military college and one with the Dutch committee in Enschede,

I followed further the sessions on 5G.

The second meeting of the commission A was devoted to small modifications of the terms of reference, as well as the preparation of AT- and AP-RASC.

The banquet was held in the evening. The best part was the jazz jam session, performed by some professors at the faculties of music of the Montréal universities.

24/08/2017 (Thursday)

The morning I presented my paper in the session on novel mathematical methods in electromagnetics, followed by the tutorial on distributing time and frequency data.

Van Lil E., Luypaert P. 2017. [Non-separable Solutions of Helmholtz' equation revisited](#). In *URSI GA 2017*, vol. XXXII (1):1208 Session B23 paper 3 Cannon P. (eds.) URSI GA 2017, Montréal, 19-26 August 2017, pp. B23-3-1-B23-3-4

In the afternoon, I attended the session, that I co-chaired with prof. Wang (Nagoya institute of technology) in replacement of dr. Soh, who was not able to attend.

Then, in the third council (see appendix 3), the commission chairs and vice-chairs, as well as the ECR's have been ratified. The next GA will be held in Rome at the University La Sapienza in 2020. For 2023, the council already decided to go to Sapporo.

AT-RASC requires the sessions by Friday 21:00. Amitava Sen Gupta explains the details of the next AP-RASC March 9-..., 2019.

25/08/2017 (Friday)

In the morning I followed the tutorial on EMC in power systems as well as the general lecture on analog optical computing.

In the afternoon, I first followed the modelling of the ionosphere (or how to increase the accuracy of the CTIP model during the solar storms). The WSA-ENLIL will be used to further increase the accuracy of the models of the ionosphere. Afterwards, I co-chaired another session in replacement of dr. Soh, and presented a paper of one of his students:

Ramli M., Soh P., Rahim H., Jamlos M., Gimán F., Hussin E., Lago H., Van Lil E. 2017. [SAR for Wearable Antennas with AMC Made using PDMS and Textiles](#). In *URSI GA 2017*, vol.XXXII (1):2858 Session K22 paper 4 Cannon P. (eds.) URSI GA 2017, Montréal, 19-26 August 2017. , pp. K22-4-1-K22-4-3

The evening was devoted to the last commission A meeting, where the different topics were assigned to the members of commission.

26/08/2017 (Saturday)

This was devoted to the last council (see appendix 4), where we paid tribute to prof. Paul Lagasse for his 24 years as a secretary general (Fig. 3) and nominated him as a honorary president. To the left is our new secretary general, Prof. Peter Van Daele. Then, I attended the public lecture on antenna design for 5G, and the closing ceremony.

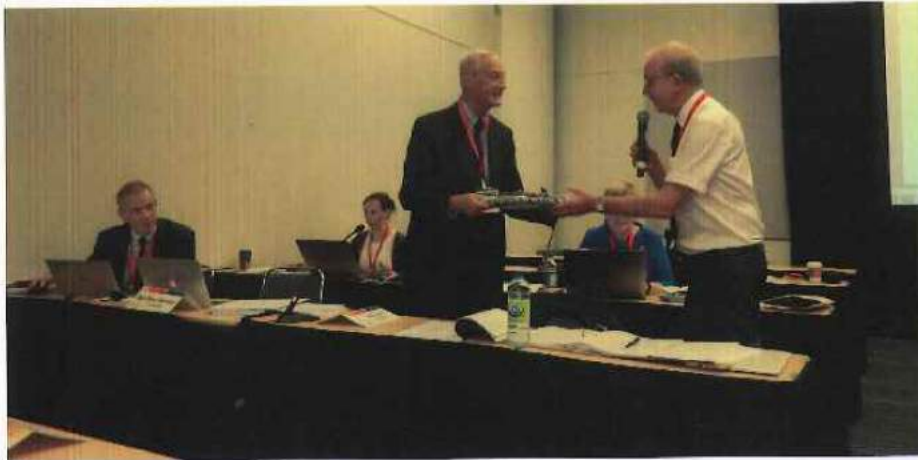


Fig. 3: The ceremony in honour of Prof. Lagasse.

To summarize, there were many contributions (26 to be precise, including international collaborations) from Belgium. The majority was from the scientific institutions in Ukkel/Uccle (Observatory, Meteorology and Aeronomy).