



2020

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

BELGIAN NATIONAL SCIENTIFIC COMMITTEES
ANNUAL REPORTS 2020

TABLE OF CONTENTS

Introduction	3
National Committee for Antarctic Research	4
National Committee for Astronomy	6
National Committee BELQUA (Quaternary Research)	10
National Committee for Biochemistry and Molecular Biology	12
National Committee for Biomedical Engineering	15
National Committee for Biophysics	19
National Committee for Chemistry	20
National Committee for Crystallography	22
National Committee for Geodesy and Geophysics	25
National Committee for Geography	28
National Committee for Geological Sciences	33
National Committee for Logic, History and Philosophy of Sciences	35
National Committee for Mathematics	46
National Committee for Mechanics	48
National Committee for Microbiology	50
National Committee for Physics	52
National Committee for Physiology and Pharmacology	55
National Committee for Psychological Sciences	56
National Committee for Radio-Electricity	58
National Committee for Soil Sciences	64
International Unions	66

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 ISC or a scientific body of ISC (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

Given the COVID-19 situation, we did not have in person meetings at the Academy in 2020. We organized an online meeting on December 18, 2020 with the following agenda:

- Review of the SCAR 2020 online OSC
- Information on the SCAR delegates meeting (online – March 16-25, 2021)
- The new BELGICA for polar studies
- Impact of COVID-19 on Antarctic activities

For the point on the BELGICA, we invited Dr Lieven Naudts to explain the possibilities of the use of the new Belgica vessel to conduct research activities in the Arctic, and more precisely around the Greenland ice sheet margin. Possibilities for project proposals for BNCAR research active in polar regions were discussed, and seem possible for 2022 onwards.

The SCAR Open Science conference was held online due to the pandemic. Several BNCAR members presented their research results.

The SCAR delegates meeting of 2020 was postponed to March 2021 for an online meeting. This required a change in the statutes of SCAR, as decisions can only be made in physical presence of the delegates. The change to an online meeting has been accepted after business consultation and legal advice. This required revision of Articles of Association, which enables to meet electronically.

The impact of COVID-19 on science activities was discussed. Polar research is highly impacted due to delays in expedition preparation and international dependencies. At the Princess Elisabeth Station, only a limited number of scientists will be active.

3. General Assembly of the Scientific Union

- SCAR Open Science Conference 2020 (Hobart, Australia – online –August 3-7, 2020).
- SCAR delegates meeting was postponed to 2021.

4. Other Activities

A few online activities were organized by APECS, the Association of Polar Early Career Scientists.

5. Future perspectives

- SCAR delegates meeting: March 2021
- SCAR Biology Symposium 2021 (organization according to the sanitary conditions)
- INSTANT (Instabilities and Thresholds in Antarctica) project kickoff meeting (INSTANT is a new SCAR SRP that started in 2020) will be held online February 18-21, 2021.

NATIONAL COMMITTEE FOR ASTRONOMY

INTERNATIONAL UNION: INTERNATIONAL ASTRONOMICAL UNION (IAU)

1. Introduction, mission, goals

The prime 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 BNCA gathered twice in 2020: on January 28, 2020 and on October 15, 2020. The first meeting took place at the Palace of the Royal Academies for Science and the Arts of Belgium in Brussels, the second one was held remotely due to the COVID-19 situation. Recurrent topics of discussion during these meetings were IAU matters, ESO matters, ESA matters, the Astronomy & Astrophysics Board, which are addressed in the sections below.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

[a] IUA matters

In response to the 2019 call, the BNCA received 7 applications for IAU Junior Membership, by Dominic Bowman, Taissa Danilovich, David Gobrecht, Ward Homan, Caroline Straatman, Marie Van de Sande and Sofia Wallstrom. It also received 4 applications for IAU Individual Membership (Mieke De Cock, Laure Lefevre, Arianna Piccialli and Christophe Ringeval). All candidates were accepted.

Apart from these Individual and Junior Members, the IAU has launched a call for nominations of IAU Honorary Members. Each national node can propose only one Honorary Member per General Assembly.

[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:

- Due to the COVID-19 pandemic, ESO observatories have been closed since March 2020 before restart of minimal operations in September at Paranal and in October at La Silla (no reopening of the ALMA observatory in 2020). The construction work at the E-ELT site has halted in July 2020. The Call for Proposals P107 has been suspended.
- ESO has drafted a new strategic plan for the next 10 years focusing mainly on building the E-ELT and keeping La Silla, Paranal and ALMA at the forefront of astronomy. No new projects will be built in the next decade.

[c] ESA matters

ESA matters were reported to the BNCA by W. Verschueren, the Belgian representative (and new elected chair) at the ESA Science Programme Committee. He discussed the latest developments concerning the different ESA

Programmes:

- All operational missions of the ESA Science Programme have obtained an extension until end 2022. The Programme itself has received an increase of about 10%, to be counterbalanced by the fact that a number of missions in development have run into unexpected overcosts. Together with the costs related to the COVID-19 crisis, this has created a financial shortage for the period 2020-2022. ESA has decided to no longer consider SPICA as a candidate for the upcoming selection as the M5 mission in the Cosmic Vision Programme.
- The European Exploration Envelope Programme contains technology developments and the preparation of missions to the Moon and Mars, including the ExoMars-2020 mission (delayed to 2022) and the Mars Sample Return mission (with NASA). Belgium continues its participation in the ISS and the Deep Space Gateway.
- The Space Safety Programme sees the continuation of the Belgian involvement in Space Weather activities, with the monitoring mission LAGRANGE to L5. Belgium also leads the development of the Extreme Ultraviolet Imager and is a strong technological participant in the HERA asteroid mission.
- The PRODEX Programme received an increase of about 25%. This additional budget will be mainly used to increase the Belgian participation to pre-launch instrument developments.

[d] Astronomy and Astrophysics (A & A)

Matters related to A&A were reported by R. Van der Linden, the Belgian delegate in the A&A Board. The last board meeting was held remotely in April 2020. The main topics related to A&A are:

- At the initiative of its former owner, EDP has been taken over by a Chinese publisher, but ESO has still the ownership of A&A. Financially, the journal is in a healthy situation, thanks to a strong increase to the budget by the publisher.
- The impact factor for A&A has continued to increase: the 2018 impact factor was 6.209, significantly higher than the immediate competitors MNRAS and ApJ.
- The change towards an open access model is not evident, as it would lead to a shift in the costs of the journal between countries. No decisions have been made and no timeline has been fixed: the topic will be discussed further in 2021.

[e] Miscellaneous matters

A new BNCA website, developed by UGent, has been released, it is available at <http://www.bnca.be>.

The need of a Belgian Astronomical Society was discussed. The entire BNCA is supportive of the idea and agrees that such a Belgian Astronomical Society should have a clear link to the BNCA. Further actions (e.g. look into the status of other similar organisations, set up of a mailing list) will be taken in 2021.

A proposition for making the BNCA meeting minutes publicly available (need for more transparency) was approved: from next meeting onwards, the minutes will be made public, placed on the public part of the BNCA website and sent around by mailing to the different institute contact points.

The BNCA expressed again its interest in Astronet and the European Astrobiology Institute, and supports the idea that Belgium remains or becomes member of both organisations. The President has written a letter to the Directors of the FNRS and FWO to request that FWO represents the entire Belgian community at Astronet, and that FNRS does the same at the European Astrobiology Institute.

The BNCA is concerned of the possible effects of massive satellite constellations on optical and radio observations from Earth. This topic is being followed up by several international organisations like the IAU and the EAS.

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 the NC on March 26, 2020 in Brussels

The BELQUA meeting in March 2020 was planned to be organized prior to the yearly BELQUA workshop. However, due to the measures taken by the Belgian government to reduce the spread of COVID-19, the workshop and the meeting were cancelled.

[b] Meeting of the NC on December 8, 2020 (online)

The online BELQUA NC meeting in December 2020 was attended by 12 out of the 14 active NC members. The main achievements and conclusions of the meeting were as follows:

- The possibility to organize the yearly BELQUA workshop was discussed. Given the particular situation to date, it was decided to cancel the 2021 workshop but rather participate to the *Geologica Belgica* symposium (September 15-17). During this symposium a number of special sessions relevant to BELQUA will be organized. Several members of the NC are planning to give a presentation and convene a session. In addition, it was decided to organize a BELQUA webinar during which a renowned international scientist will give a presentation and answers questions.
- The new INQUA funding scheme was presented.
- An invitation was received from the NC on Geology to participate in a Geoheritage working group. It was decided that this initiative is indeed relevant for BELQUA; several members expressed their interest.

- The BELQUA workshop organized in 2019 on dating the Quaternary has received very good feedback from several participants. Therefore, it was decided to organize a second workshop in 2022, which will be prepared during the spring meeting of 2021.

3. General Assembly of the Scientific Union

There was no general assembly of INQUA in 2020. The next general assembly will be organised in 2023 in Italy during the INQUA conference. Information from INQUA (e.g. the Newsletter, and the table of contents of its journal *Quaternary International*) was distributed via the BELQUA e-mail list.

4. Other activities

No additional activities took place in 2020 due to the measures taken to reduce the spread of COVID-19.

5. Future perspectives

- Organization of a webinar.
- Participation to *Geologica Belgica* through convening sessions and giving presentations by the BELQUA NC members and members of their research teams.
- Preparation of a BELQUA workshop aimed at MSc and PhD students

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 “Belgian Society for Biochemistry & Molecular Biology” is to promote research in the field of Biochemistry and Molecular Biology, by organizing meetings, participating at meetings, sponsoring meetings and inviting outstanding internationally renowned scientists. It also disseminates information to the community on national and international events, access to funding for PhD, Postdoc positions and mobility for junior as well as more senior scientists. The society also promotes participation to international committees and federations (e.g. FEBS, IUBMB, ...).

Because of the increasingly interdisciplinary nature of the biological sciences, the society strives to increase cross disciplinary meetings, symposia together with sister 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 and often of others as well.

2. Meetings of the Committee

Unfortunately, the worldwide Covid-19 pandemic and national as well as international sanitary restrictions have not allowed the organization of meetings, symposia and other face to face activities. Furthermore, the board members were all under heavy academic overload complying with the new ways, techniques and increased workloads of teaching and running the university and faculty activities. We therefore postponed several times meetings awaiting perspectives for deconfinement and being able to set a work agenda.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

Nevertheless, despite the shutdown of all scientific meetings and committee meetings face to face, the various entities stived to setup remote meetings. Consequently, the president (Jason PERRET,

ULB) of the Belgian Society for Biochemistry & molecular Biology participated, via Teams/Zoom to several international meetings and committees in the course of 2020, such as:

- To the FEBS 60th Council meeting as the Belgian Delegate (Annex 1). The meeting was held on November 16, 2020.
- He also was part of the Program Committee – Jerka Dumić (HR), Maja Katalinić (HR), Damjan Franjević (HR), Zrinka Kovarik (HR), Igor Stuparević (HR), Ferhan Sagin (TR), Jason Perret (BE) –, for the *Education Workshop on Excellent Lab Book for an Excellent Career*, organized by the The Croatian Society of Biochemistry and Molecular Biology workshop held in Zagreb (Croatia) December 17-18, 2020. He also gave an invited talk on December 17, 2020 entitled *Value of a well-run Lab Book in academia and science* and participated to the roundtables the following day.

5. Future perspectives

The society board will organize one or two videoconference board meetings. Choice of dates will depend on the evolution of the sanitary restrictions and the perspectives of activity startup.

Discussion may include, e.g. such issues as evolving more towards co-organized scientific meeting with other national life sciences societies and organizing an annual meeting with two other European countries (e.g. The Netherlands and Norway), within the frame of the FEBS 3+ support to constituent society activities.

In the light of the workshop/meeting mentioned above (5.B.), held by videoconferencing and with onsite limited face to face presence of local PhD students (for the roundtables/workshops), postdocs and junior staff, held in Zagreb (Croatia), the Belgian Society for Biochemical & Molecular Biology will discuss the opportunity to organize in 2021 for 2022 a meeting based on the same organizational strategy.

The Society would like to explore how to inform better the scientific biochemistry community as to opportunities offered by FEBS and other scientific bodies, as to funding, mobility, advanced training courses and symposia/meetings/congresses.

The society also requires reviving and promoting, as well as recruiting new members by sensitizing young scientists to the importance of being part of scientific societies, this will be a future priority. Revision of the Societies Statutes will also be an upcoming priority as the previous statutes are dating now.

In 2021, the president (Jason PERRET, ULB), will attend

- The 5th FEBS Ambassador Meeting on Education to be held in Vilnius on May 6-9, 2020 was postponed and has been rescheduled for May 2021.

- The 45th FEBS Congress *Molecules of Life: Towards New Horizons* - Ljubljana, Slovenia - hosted by the Slovenian Biochemical Society and the Croatian Society of Biochemistry and Molecular Biology, scheduled in July 2020 has been postponed to July 3-8, 2021. He will chair a Biochemistry Teaching Session as part of the FEBS Committee for Teaching Biochemistry in Europe (Member of the FEBS Education Committee).
- He will represent the Belgian biochemical society as Belgian delegate to the FEBS Council held in Ljubljana, Slovenia scheduled July 8-9, 2021.
- He will participate and give talks various in workshops scheduled by the FEBS Committee for Teaching Biochemistry in Europe for autumn 2021, that remain to be confirmed within the current COVID-19 pandemic situation with respect to the evolution of sanitary (national and international) restrictions.

NATIONAL COMMITTEE FOR BIOMEDICAL ENGINEERING

INTERNATIONAL UNION: INTERNATIONAL UNION FOR PHYSICAL AND ENGINEERING SCIENCES IN MEDICINE (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

Meeting: March 13, November 27 (online)

Number of meetings have been very limited due to the corona pandemic. The one and only physical meetings of 2020 was luckily planned on the last working day before the lockdown. Various online meetings have been organized between the Youngster committee and the organization committee of the national day between August 20, 2020 and the day of the event, in order to prepare an alternative online National Day.

main conclusions

- Continuing efforts for a yearly Contact Forum in the Academy.
- Involving young scientists and professionals, alumni of our masterprograms 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, and also lifetech.brussels (belonging to hub.brussels).

- 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.
- Follow-up of the Biomedical Engineering teaching topics in the bachelor programs in engineering.
- In 2020 we paid attention to value-based healthcare.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

[a] Belgian Day on Biomedical Engineering (November 27, 2020)

Due to the corona pandemic the organisation of this annual contact forum could not be held in the full-day physical meeting format as usual and has been scaled down to an online ½ day format. The whole event has been physically coordinated at the premises of VUB

This year we had:

1. Only one invited speaker, CEO of UZ-Brussels, Prof. Dr. Marc Noppen, who presented at VUB with the presence of only Prof. Pascal Verdonck, and Prof. Johan Stiens and the members of the youngster committee in a large aula.
2. Video sessions presenting new research results in the field of value-based healthcare.
3. Video sessions presenting new research results in the field of biomedical engineering.
4. Virtual company fair, including the sponsors of the event.

Prizes were given to 3 online video abstracts by young researchers. This year's theme: *Value-based healthcare*. Goals: (1) Bring Belgian researchers in contact with the full ecosystem on Biomedical Engineering and (2) allow Belgian researchers to present their work in a short presentation and posters (Belgian Day). Attendance: 338 persons attended the online version of this "Contact Forum" of which students, PhD students, post-docs, professors, others: professionals in the field, 3 companies in the field of biomedical engineering participated to the online company forum.

[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 (more than 25 companies).

[c] Liaison with worldwide societies/activities:

- Contacts between the National Committee, the International Federation IFMBE, the Union (IUPESM) and ICSU/ISC and EAMBES
 - via Marc Nyssen. (fellow of the International Academy for Biomedical Engineering), member of the ISC “World Data System Scientific Committee);
 - via Johan Stiens within the EU-framework Eutopia with the Prof. Dr. Leandro Peccia of the University of Warwick, president-elect of EAMBS, treasurer of IFMBE, secretaries General of IUPESM.
- Contacts between the National Committee and EAMBES (European level umbrella organisation) via Jos Vander Sloten, EAMBES fellow.
- 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

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

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 23, 2020.

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, 2018, 2019. 2020

The members of the “Youngsters Board”:

- Andrea Menichetti (general organisation)
- Dries Hendricks (general organisation, PR)
- Mahta Mazloumi (finance)
- Jonathan Dan (website)

- Tim Bomberna (social media)
- Mojtaba Barzegari (asbtracts)
- Sophie Bekisz (logistics)
- Hugo Smets (practical arrangements)

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
- ISC: 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 Committee for Biophysics is an extension of the Belgian Biophysical Society. Its aim is to promote biophysics in Belgium (mainly through the organisation of scientific events), to represent Belgium at EBSA meetings and to be a point of contact for our colleagues abroad. The interests of its members include protein folding and misfolding, biomolecular dynamics, biomechanics, advanced imaging methods, among others. Both theoretical and experimental approaches are considered.

2. Meetings of the Committee and the Belgian Society

Dates: 10 December 2020

Main conclusions:

- We mainly discussed how we could keep the Belgian Biophysical Society “alive” during the pandemic. Hence, we decided to organise a webinar series early 2021 (see below).
- How to improve the communication with our members, thus making the committee’s impact more significant.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

Due to the covid-19 pandemic all planned activities were cancelled.

5. Future perspectives

The following meetings will be organized in 2021:

- Annual folding meeting in Liège at the end of August.
- A mini-symposium on membrane proteins at the University of Namur in December 2021.
- A 1- or 2-day meeting at the Academy early 2022. Topic: *In vivo studies of cellular processes* (methods to study cellular processes, new view on cytoplasm organization...).

NATIONAL COMMITTEE FOR CHEMISTRY

INTERNATIONAL UNION: INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY (IUPAC)

1. Introduction, mission, goals

The National Committee for Chemistry represents Belgian scientists carrying out their research in the field of pure and applied chemistry. It is made up of active members in the industrial and academic world, as such there are representatives of professional societies, education regardless of its degree level and the chemical industry. The committee is set up on a parity basis from a linguistic point of view and meetings take place in English.

Chemistry is the science which is at the center of many other fields such as life sciences, materials etc. Chemistry is also a vital industrial activity for our country both economically and socially. We meet its actors in schools, colleges, universities, companies, SMEs, multinationals, start-ups, collective research centers, regional administrations, European institutions ... They are represented by associations such as learned societies (KVCV, SRC), Jeunesses Scientifiques, Jeugd, Cultuur en Wetenschap, the “Chemistry Olympiads”, Mémosciences or “professional” and lobbying organizations such as, among others, Essenscia and CEFIC.

The role of the National Chemistry Committee is to promote and coordinate for Belgium the study of the various scientific disciplines in the field of chemistry, to catalyze contacts and collaboration between chemistry and other disciplines, to promote IUPAC (International Union of Pure and Applied Chemistry) in Belgium and to represent Belgian chemists in IUPAC.

2. Meetings of the Committee

During the first meeting on January 8, 2020 at the Academy Palace in Brussels:

- the new president and vice-president have been appointed and new members have been suggested.
- Nominated members have been contacted by email and the new member list was forwarded to RASAB.
- the event for pupils selected for the second rounds of the Science Olympiads, originally scheduled in May 2020, was after further discussions with Gérard Cobut (coordinator Olympiads in Wallonia) postponed to May 2021.
- the committee has agreed to change its Dutch wording ‘Nationaal Comité Scheikunde’ into ‘Nationaal Comité Chemie’ as the word scheikunde is an anachronism. The advice was forwarded to RASAB for further approval.

The online meeting of the Committee on June 24, 2020 started with a brief presentation of all members.

- For the third science day organised for pupils selected for the second rounds of the Science Olympiads the theme ‘Science for the citizens’ was chosen. A brainstorming has resulted in a number of possible subjects/speakers (quality of testing, quality of water, quality of air, citizen science... and a number of pitch presentations by PhD students).
- Further news from IUPAC was given by Rita Cornelis and Paul Baekelmans.

All members receive electronic copies of *Chemistry International* (appears 4x/year) with the latest news from IUPAC (provided by Rita Cornelis) with the request to distribute the issues further at their institutions.

3. General Assembly of the Scientific Union

The 51st IUPAC General Assembly will take place in Montreal during the 48th IUPAC World Chemistry Congress (August 13-20, 2021).

4. Other activities

Given the pandemic the science day ‘Science for the citizens’ originally scheduled in May 2020 has been postponed to 2021. The current situation still does not allow a face-to-face organisation due to the fact that *extra-muros* activities are not allowed for pupils in secondary schools. An online edition is kept as plan B.

Rita Cornelis is president of division VII Chemistry and Human Health of IUPAC. Paul Baekelmans is a member of the Committee on Chemistry and Industry of IUPAC.

5. Future perspectives

The committee wishes to continue its efforts to further promote IUPAC in Belgium at universities and high schools, as well as to participate in the projects and events organised by IUPAC.

Further efforts will be made to promote chemical sciences to pupils of secondary schools, e.g. by organising regular science days in collaboration with the Science Olympiads and other partners.

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 collaboration 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 such as ECA and IUCr.

The committee has its own web site³ which is administered by Johan Wouters, and organizes an annual crystal growing competition for pupils at secondary schools and a biannual Belgian Crystallography Symposium BCS. Furthermore, the committee has a sub-committee on crystal growth.

2. Meetings of the Committee

[a] The first meeting took place on March 11, 2020 in Brussels (Academy Palace). During this meeting a preliminary program of the eleventh edition of the Belgian Crystallography Symposium BCS-11 (spring 2021) was discussed (time schedule, possible invited speakers, organisation flash presentations, ...). An overview of the inscriptions (50 schools) and preparations of the Belgian Crystal Growing Competition was given and the date of the prize awarding ceremony in the Academy Palace was fixed at May 20, 2020 at VUB (building I). Prof. Philippe Claeys (VUB) was proposed as speaker during the prize awarding ceremony. At the same time a plan B was discussed given the evolution of the COVID-19 pandemic. The committee has decided to maintain the running initiative 'Invite a crystallographer' also during the next school year. This lecture was recently organised at Gosselies and Malle. It has been decided to offer vouchers for free lectures as prize for the Belgian Crystal Growing Competition. Dominique Maes has reported on the activities of the Subcommittee for Crystal Growth (organisation of International Workshop on Crystal Growth of Organic Material and Solvay workshop on Nucleation. The Belgian representation for the IUCr General Assembly Meeting in Prague (August 2020) was discussed. Finally, the list of honorary members was discussed and updated.

³ sites.google.com/site/xallobe

[b] During the second meeting on October 21, 2020 (online meeting due to pandemic) an update was given about the IUCr General Assembly (postponed to August 2021), the European Crystallography School (postponed to July 2021) and the planning of future European Crystallographic Meetings ECM33 and ECM34. The committee has decided to organize the eleventh edition of the Belgian Crystallography Symposium BCS-11 on-line with technical support of UNamur on March 17, 2021. Poster session and flash presentations will be organized using virtual rooms. Bénédicte Vertruyen is prepared to take over the responsibility for the abstracts, Johan Wouters will take care of the BCS-11 web site. The 2020 edition of the Belgian Crystal Growing Competition has been extended to 2021, but it is not clear if teachers and pupils have enough time to participate. Planned lectures 'Invite a crystallographer' have been cancelled. Dominique Maes has given an update of the planned activities of the Subcommittee on Crystal Growth (organization of Workshop on Crystal Growth of Organic Materials (CGOM) postponed to September 2022 and of the Solvay Workshop “Nucleation: multiple pathways, multiple outcomes” postponed to November 2021.

3. General Assembly of the Scientific Union

The next General Assemblies will be held during the IUCr Meetings in Prague (postponed to August 14-22, 2021) and Melbourne (2023).

4. Other activities

The National Committee of Crystallography has organized in 2020 with support of both academies and sponsor Acros Organics the twentieth edition of the Crystal Growing Competition for pupils of the secondary schools (see web site <http://chem.kuleuven.be/bcc/>). For this edition participants should grow co-crystals of α -D-glucose and sodium chloride. Unfortunately, the competition was interrupted due to the pandemic and extended to school year 2020-2021.

Frédéric Hatert is member of the IUCr Commission Inorganic and Mineral Structures and Joke Hadermann is consultant of the IUCr Commission Aperiodic crystals and Electron Crystallography. Luc Van Meervelt has participated as General Secretary and Treasurer to the meetings of the IUCr Finance Committee and IUCr Executive Committee (on-line meetings). Dominique Maes is member of the Executive Committee of the International Organization for Crystal Growth.

Yaroslav Filinchuk is chair of the Special Interest Group on Crystallography under Extreme Conditions of the European Crystallographic Association.

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 interrupted twentieth Belgian Crystal Growing Competition in 2021 (see chem.kuleuven.be/bcc)
- Organisation of the on-line 11th Belgian Crystallography Symposium BCS-11 (March 17, 2021)
- Participation at General Assembly of the International Union of Crystallography (Prague, August 14-22, 2021)
- Organization of International Workshop on Crystal Growth of Organic Materials CGOM (September 17-21, 2022, Brussels) by subcommittee on crystal growth
- Organization Solvay workshop *Nucleation: multiple pathways, multiple outcomes* (November 2021, Brussels) by subcommittee on crystal growth.

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 23, 2020 in the Nicolet room of the Royal Belgian Institute for Space Aeronomy (BIRA-IASB). The GA was preceded by a presentation by Dr. Romain Maggiolo and Dr. Justin Erwin (IASB-BIRA).

[a] Presentation by Dr. Romain Maggiolo (IASB-BIRA): *Ion escape from terrestrial planets*

The ionospheres of terrestrial planets -the ionized portion of their upper atmosphere- are in constant interaction with the solar wind, a flow of charged particles continuously emitted by the Sun. In addition to solar photo-emissions, this interaction transfers energy to ionospheric ions, sometimes enough to overcome the gravitational pull of the planet. Therefore, a few kilograms of ionospheric material from terrestrial planets are lost into the interplanetary space every second. During the last two decades, measurements from ESA probes around Venus (VEX), Earth (Cluster) and Mars (VEX) brought new insight on ionospheric ion outflow challenging some paradigms, such as the protective effect of planetary magnetic field.

After an introduction on the ion outflow mechanisms at play on terrestrial planets, I will review observations at Venus, Mars and Earth. I will focus on observations related to the energy transfer from the solar wind to the ionosphere, the properties of outflowing ionospheric ions, the localization of the main outflow regions, and the fate of outflowing ionospheric ions. Finally, I will discuss the impact of ion outflow on the long-term evolution of the atmospheres of terrestrial planets.

[b] Presentation by Dr. Justin Erwin (IASB-BIRA): *Neutral escape from terrestrial planets (and light bodies)*

All planetary bodies with an atmosphere experience some process of atmospheric escape, whether it is primarily due to thermal, diffusive, or non-thermal escape. These escape processes affect the density, temperature, and compositional structure of the upper atmosphere. In addition, in some circumstances, they can have importance in the lower atmosphere and the evolution of the entire atmosphere. This field of research remains active and continues to evolve as we explore our solar system and beyond.

The MAVEN mission, observing Mars, and Venus Express (VEX), observing Venus, have shown a complex and variable story of neutral escape on terrestrial planets, with important implications to the history of water on Earth's closest planets. In the outer solar system, the Cassini and New Horizons missions observed the atmospheres of Titan and Pluto, respectively, constraining the atmospheric loss rates of these lighter bodies.

I will introduce some of the main concepts related to the escape of neutral atmospheres, and discuss where this process can have an important impact of planetary evolution and observation in our solar system.

3. General Assembly of the Scientific Union

No IUGG General Assemblies were organized in 2020.

The President participated to the voting procedure of two IUGG Alternate Liaison Officers to CCTF (Consultative Committee for Time and Frequency) and WDS (World Data System).

4. Other activities

Due to COVID, no other meetings were organized in 2020.

5. Future perspectives

[a] The next BNCGG General Assembly is planned on Thursday January 21, 2021

[b] The next European Geophysical Union (EGU) conference will be held in April 2021. It will be a fully virtual meeting

[c] The next American Geophysical Union (AGU) meeting is planned in December 2021 in San Francisco, USA.

[d] The next Association meetings will be organized in 2021, however some have already been postponed, most of the meetings will be virtual:

- IAVCEI meeting, Rotorua, New Zealand, *POSTPONED*, January 20-24, 2022
- IAHS meeting, Montpellier, France, *POSTPONED*, May 30 - June 3, 2021
- AG meeting, Beijing, China, *HYBRID*, June 28 - July 5, 2021
- Joint IAMAS-IACS-IAPSO meeting, *CANCELLED*, July 19-23, 2021
- Joint IAGA and IASPEI meeting, *REMOTE*, August 21-27, 2021

NATIONAL COMMITTEE FOR GEOGRAPHY

INTERNATIONAL UNION: INTERNATIONAL GEOGRAPHICAL UNION (IGU)

1. Introduction, mission, goals

The objectives of the Geography Committee are similar to those of the other national committees: to promote the quality of teaching and research and to establish close collaborations with the best representatives of the discipline at the international level.

During its regular meetings, it carefully monitors the development of course programs, teaching methods and methods, inspection standards, scientific investigation techniques and methods of funding research. When it deems it necessary, the Committee intervenes with the authorities concerned, to avoid or limit certain excesses or to promote promising initiatives.

At the international level, the Committee's mission is to ensure the best contacts with foreign geographers. Every four years, an official representative of Belgium, a member of the Committee, actively participates in the deliberations and votes of the General Assembly of the International Geographical Union, thus maintaining the historical links between Belgium and this international institution. It was in Antwerp that the very first international geography congress was held in 1871. It was in Brussels in 1922 that the International Geographic Union was founded. Professor Michotte was elected general secretary of the Union in 1938. He was succeeded by Mrs. Lefèvre who then became vice-president of the U.G.I. On the occasion of international congresses organized by the Union, the Committee takes care to disseminate reasoned inventories of Belgian geographic research and geographic presentations of Belgium.

The committee also has three sub-committees:

- The National Committee has continuously published the Atlas of Belgium since 1948, first on paper and today in digital format. To this end, he established the Permanent Commission for the Atlas of Belgium.
- The Cartography and Geographic Information Systems (GIS) sub-committee is made up of representatives of public organizations and the academic world with a geographic profile, active in the field of cartography and geographic information. This committee represents Belgium in the International Cartographic Association (ICA) and regularly organizes activities promoting cartography and GIS in Belgium, aimed at both professionals and general public.

- The geomorphology subcommittee (Belgian Association of Geomorphologists) represents Belgium with the International Association of Geomorphologists (IAG / AIG).

2. Meetings of the committee & activities

The National Committee for Geography met three times in 2020: February 1, May 9 (online) and September 26 (online). The themes discussed were at the meetings:

[a] Position of geography in secondary schools

As part of the reform of the program on both the Dutch and French-speaking sides, as well as the reform of initial teacher training on the French-speaking side, the committee was particularly attentive to developments. It was a place of information and exchange, but also a relay for various mobilizations aimed at maintaining a sufficient contribution of geography to the training of young people.

Noting a flexibilization of the courses and a diversification of the disciplinary origin of the teachers brought to teach geography, the committee notes that it will probably be necessary in the future to set up a set of continuing training actions so that non-geographers giving geography have bases in cartography, climatology etc.

[b] Doctoral schools

The situation of doctoral schools is clearly different for Dutch-speaking and French-speaking universities. For the first, the doctoral schools are organized by university, the doctoral geographers being found most often in the schools of natural sciences. In the French community there is a transversal structure organized by discipline and not by university.

In 2018, at the request of the Committee, the French-speaking colleagues set up a doctoral school on the French-speaking side to have a training offer, but also to increase the visibility of the geography with the FNRS (representation before the commissions). The file was approved in 2020 and the implementation of activities will be able to take place in 2021.

[c] Evolution of the training offer

During 2020, the Committee analyzed at each meeting the point on the evolution of the implementation of initial training reforms for teachers in geography, both on the Dutch-speaking and French-speaking side.

A specific discussion on the reorganization of field trips and work in the COVID-19 context has been carried out. It emerges that different strategies have been implemented allowing the continuity of

the courses. Committee members agree that these are exceptional measures that aim at the continuity of learning with great flexibility. However, a series of skills related to field techniques cannot under current conditions be fully secured. Likewise, some members of the committee underlined the risk of poor consideration of the specificities of fieldwork as part of the precautionary measure and reorganization linked to the epidemic by the academic authorities.

[d] Participation in IGU activities (International Geographic Union)

See General Assembly.

[e] BeGeo Annual Geographical Information Congress

The National Geographic Institute annually organizes BeGeo, a national congress with a fair dedicated to geographic information bringing together public authorities, the private sector and the world of research. Via the cartography and GIS sub-committee, the National Committee is called upon both to contribute to the conference program and to promote the participation of university students.

Due to covid-19, BeGeo took place online in 2020.

[f] Geography magazines published in Belgium

The Belgian magazine *Belgeo* is co-published by the national committee. From an administrative point of view, it is a de facto association between the Geography Committee and the Royal Belgian Geographic Society. All the articles can be consulted on <https://journals.openedition.org/belgeo/>. The bulletin of the Geographical Society of Liège can be consulted on <https://popups.uliege.be/0770-7576/index.php>.

In addition, all the issues of the "historical" journals of the Royal Belgian Geographical Society, SOBEG as well as the magazine *De Aardrijkskunde* were scanned. The files have been entrusted to the Royal Library which must be responsible for putting them online in their search and consultation tool.

[g] Cartography-GIS subcommittee, the Atlas Commission of Belgium and the geomorphology subcommittee

The NGC took note of the reports of the Cartography-GIS Sub-Committee, the report of the Belgian National Atlas Commission and the report of the Geomorphology Sub-Committee.

[h] Communication policy

The committee has continued to consider on its communication (site & social media). The committee's website is a priority and must be a gateway to geography in Belgium, and easily

updated. Other Facebook / LinkedIn channels) will be considered after the website.

The proposed structure for the committee's website: after choosing the language, a landing page with the "cobblestones" referring to the 6 sections, inspired by the Royal Geographical Society website:

1. News and events: Belgian Geographical Days, Mapathon,...
2. Geography, a key to our future (what is geography / a look more essential than ever / geography at school / geography in higher education / geography, a profession)
3. Geographers in action (portraits / case studies): to use different portraits and popularization tools produced in Belgium (short summary and references to the full version).
4. Resources: Atlas of Belgium / Belgian / BSLg / VLA and Fegepro journals / Ruimte en Maatschappij / Agora / scans from the Royal Library
5. The national committee: missions / composition / sub-committees
6. Organizations: VLA / FEGEPRO / SRBG / SGLg / IGNB / OSGeo Belgium...)
7. International cooperation

Unfortunately, the Covid crisis and professional overload prevented the chairman of the committee from moving forward on this file in 2020.

3. General Assembly of the Scientific Union

No UGI congress was organized in 2020, following the Covid-19 pandemic.

In the context of the UGI elections and votes, the committee was called upon to choose the candidates for whom Belgium's vote will be granted. After discussion, the votes were given to:

- For the presidency of the UGI: Michael E. Meadows
- For the four vice-presidents: Holly Barcus, Barbaros Gonencgil, Nathalie Lemarchand and Celine Rozenblat
- For the organizing city of the 2028 congress: Melbourne

All the candidates supported by Belgium joined the executive committee of the UGI. More information on <https://igu-online.org/organization/executive-committee-2020-2022/>.

4. Other activities

In line with the reflections on the reorganization of activities in the context of a pandemic, and this in order to establish the scientific and academic legitimacy of the fieldwork, it is proposed to make it the theme of the next Belgian Geographers Days (which should ideally be organized in Namur).

5. Future perspectives

In 2021, the committee will work primarily:

1. The establishment of a new website
2. Monitoring the reforms of compulsory education and initial teacher training
3. To update the Atlas of Belgium and to write comments, in particular to support the making of new school books, but also with a view to feeding a publication on the geography of Belgium for the centenary of the IGU.

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

Due to Covid19 circumstances, meetings were for the first time held online, by Skype for Business.

Meetings: June 3 & December 16, 2020

Focus of both meetings was a discussion about Promotion of Geology/Geosciences in Belgium:

- #GeolBel: The aim of this hashtag is to put the Geology of Belgium in the spotlight and to diffuse general information that can be of interest to geologists and the general public. It can be used to promote activities relating to the geology in Belgium: conferences, special meetings, open events in the Famenne–Ardenne Geopark, research results.

A summary of the current status of geoparks in Belgium and of the links with various UNESCO committees in charge was given:

- Famenne Ardenne - <https://www.geoparcfamenneardenne.be/nl/>

The Famenne-Ardenne Geopark is the first approved Geopark (2018) in Belgium. The Geopark will be revalidated by UNESCO Geopark experts in 2022, a usual step (every 4 years) in the UNESCO Global Geopark process.

- “UNESCO Platform Flanders” <https://www.unesco-vlaanderen.be/unesco-in-vlaanderen/geoparken-biosfeergebieden> is at this moment an active committee. The Vlaamse UNESCO Commissie (chair Marc Vervenne and secretary Lukas Van Damme) is very active. The Geopark Committee promotes further development of geoparks.
- Schelde Delta Geopark (<https://www.scheldedelta.eu/>) is candidate geopark, an area comprising the provinces of Oost-Vlaanderen and Antwerpen (BE), and Noord-Brabant and Zeeland (NL). The plan is to submit the application in Sept/Oct 2021 and aiming to obtain the Geopark Label in 2023.
- Mergelland - <https://www.unesco-vlaanderen.be/unesco-in-de-kijker/nieuws/mergelland-mikt-opunesco-erkenning-als-geopark>.
Riemst and some neighbouring communities in the Netherlands have the intention to go for a Global Geopark Label.
- At National level: Belgium has an Ambassador at Permanent Representation of Belgium to OECD and UNESCO: Regine Vandriessche.
- Kempen Broek <https://www.kempenbroek.eu/nl/het-kempenbroek-als-unesco-mens-enbiosfeergebied>

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

- NCGS Website:
To be shared with the Geologica Belgica website, but after having contact with board of Geologica Belgica.
- Voting results from IUGS and next IGC meeting
John Ludden (UK) was chosen as new President of IUGS and Stan Finney (US) was re-elected as Secretary General. Philippe Claeys (VUB) was the only other candidate for the position of Secretary General.
- It is uncertain whether the International Geological Conference will be organized in 2021, if not, the next IGC will be held in South Korea in 2024.

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 July 7 and September 25, 2020

Main points on the agenda for both meetings were:

- Subsidy application BESTOR 2020
- Recruitment of scientific personnel for BESTOR

- Organisation ESHS Brussels 2022
- New members

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

The NC planned to organise its biennial Young Researchers' Days in September 2020, in collaboration with BSLPS. However, due to the Covid-pandemic, it was decided to postpone this with a year, in the hope that a successful vaccination campaign might have been conducted by September 2021.

5. Future perspectives

[a] Young Researcher's Day VII (September 2021)

The seventh installment of YRD will be organised in Brussels in September 2021 as an online conference, and this in collaboration with BSLPS. Organisation is currently under way. Confirmed keynote speakers include Prof. Hanne Andersen (Copenhagen University) and Dr. Sara Miglietti (University of London, Warburg Institute).

[b] ESHS conference 2022

The ESHS 2022 conference in Brussels will take place on September 7-10. The theme of the conference would be something along the lines of *Politics of science – science policy*. Moreover, 2022 marks the celebration for the 250th anniversary of the Académie Royale de Bruxelles, founded by Maria Theresa in 1772.

An organising committee, a steering group and Hannes Van Engeland will be responsible for the organisation. Once the organising committee and steering group are established, short- to mid-term to-dos are:

- Attracting funding, collaboration and sponsorship.
- Booking of a venue (the conference site) as well as making deals with hotels, catering etc.
- The selection and contacting of possible keynote speakers
- Drafting a CFP
- Making a conference-website

6. BESTOR⁴

[a] Introduction

Bestor is an online database and platform for the history of Belgian science since 1800. It is developed both for consultation by the general public and as a research instrument for scholars and students. Bestor provides material for historical research or inquiries, in addition to functioning as a forum for news, events, and publications. As such, Bestor promotes general and scholarly interest in the history of modern Belgian science. The database is created with MediaWiki software (version 1.28.0.).

In this database, Bestor presents articles on, among others, Belgian scientists, scientific institutions and sites, scholarly societies, journals, prizes, collections, and memorable events, both in French and in Dutch. The articles are connected via links, stories, and portal pages, enabling the visitor to explore the networks between people, institutions, places, and societies. Primary and secondary sources which can generally be browsed in the Belgian Royal Library (KBR) and in university libraries are presented in the article's reference list. As such, Bestor records offer the reader a treasure of material which is often hard to find with a few clicks. Records are updated in accordance with recent research.

The information presented in Bestor is assessed by a small team of collaborators, in addition to members of the National Committee for Logic, History and Philosophy of Science (NC) and individual collaborators from different fields of expertise, such as historians and scientists, under the direction of the NC. Support and housing facilities are provided by the Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten (KVAB), the Académie royale des Sciences, des Lettres et des Beaux-Arts de Belgique (ARB), and the overarching Royal Academies for Science and the Arts of Belgium (RASAB). The Bestor database is physically located on the server of the Faculty of Arts of the KU Leuven, where technical maintenance is executed. Bestor is supported by an annual subsidy of Belspo, which it has generously received since 2008.

[b] Staff and management

As the plan to replace Virgile Royen with someone who would assist with the organisation of the 2022 Conference of the European Society for the History of Science will probably only be realised in 2021, Bestor was supported by one part-time employee in 2020. Eva Schalbroeck fulfilled this role until 31/07/2020. She took on a new job as lecturer at Utrecht University from 01/08/2020 onwards. She was replaced by Hannes Van Engeland in January 2021. Consequently, there was no

⁴ www.bestor.be

output between August 2020 and January 2021 nor complete statistical material. Professor Dr. Geert Vanpaemel (KU Leuven) still functions as the coordinator of the project.

[c] Outline of the activities in 2020 and their outcome

General

In January 2020, Eva Schalbroeck and Geert Vanpaemel discussed the working plan for the coming year: which content to add to the database (mainly which stories and accompanying notes), which notes and stories to translate into English, and the process for creating a new website.

The covid-19 pandemic and the subsequent teleworking and closure of the libraries has severely hindered the realisation of this plan. As a result, Eva Schalbroeck, with the approval of Geert Vanpaemel, decided on an alternative plan. This plan consisted of highlighting existing material, preparing notes which required no library visits, getting external contributions, in addition to doing translations and being active on social media.

Highlighting existing content

During the first lockdown, Eva Schalbroeck focused on highlighting existing content on the website and social media. She, for example, took various scientific anniversaries and contemporary affairs, such as the pandemic, as an opportunity to share existing notes and stories. She corrected errors and added images along the way (rather than in a systematic manner). The Twitter and Facebook feed give an overview of the material put in the spotlight.

New stories and notes

Written by Eva Schalbroeck

Eva Schalbroeck also created notes which she had prepared in 2020 or for which she could draw on her own research. These include:

- Belgische wetenschappers en artsen en radium: een korte, maar hevige nucleaire affaire (story)
- Joseph Maisin (note)
- Antoine Depaeye (note)
- Félix Sluys (note): For this, Eva Schalbroeck consulted with Maria Laura Franciosi who wrote on how Sluys treated composer Giacomo Puccini
- Adrien Bayet (note)
- Koloniale Hogeschool van België (Université Coloniale de Belgique) (note)

- De Koloniale Hogeschool: een arena voor discussies over de koloniale wetenschap, administratie en elite (story)
- Commissie voor de Bescherming van de Inheemse Bevolking (note)
- Alphonse Rodhain (note)
- Leopold Motoulle (note)

Eva Schalbroeck also planned and prepared a story with accompanying notes on colonial medicine and health care in the Belgian Congo. It would supplement those on the colonial laboratories written by Lyvia Diser. For this, she sought the assistance of Reinout Vander Hulst and Maarten Langhendries, two PhD students working with Prof. Dr. Kaat Wils (KU Leuven). A skype meeting was held in May 2020. Then it was decided to proceed with the story and notes in the fall of 2020, when Reinout Vander Hulst and Maarten Langhendries would have more time. The story and notes were eventually not realised due to Eva Schalbroeck's departure.

External Contributions

During 2020, Bestor received a number of notes from external contributors.

- Denis Diagre: 'Musée Forestier': text and images. Note solicited by Virgile Royen.
- Joris Mercelis: 'Baekeland, Leo Hendrik (1863-1944)' Note solicited by Eva Schalbroeck after Joris Mercelis (an acquaintance of Lyvia Diser) had asked to promote his new book on Baekeland via Bestor's channels.
- Jean-Michelle Bruffaerts: 'Werbrouck, Marcelle (1889-1959)'
- Note solicited by Eva Schalbroeck via Gert Huskens, a PhD student at the VUB and a collaborator of Bruffaerts.

That Bestor does not have the funds to pay external contributors is understandable. However, the fact that the contributors cannot write in their own name (they can only mention their own work in the bibliography) does not make writing for Bestor an attractive endeavour. Perhaps, this aspect could be revised to encourage more contributions (thereby tapping into the increased appreciation for outreach within academia), e.g. by crediting authors in the version histories of these entries.

Translations

The following notes were translated from French to Dutch (or vice versa) by Eva Schalbroeck

- Houzeau de Lehaie, Jean-Charles (1820-1888)
- Un savant dans l'Ouest : Jean-Charles Houzeau de Lehaie ou l'évolutionnisme nomade
- Koloniale Hogeschool van België (Université Coloniale de Belgique) (note)
- De Koloniale Hogeschool: een arena voor discussies over de koloniale wetenschap, administratie en elite
- Belgische wetenschappers en artsen en radium: een korte, maar hevige nucleaire affaire

The following notes were translated into English by Eva Schalbroeck

- Belgische wetenschappers en artsen en radium: een korte, maar hevige nucleaire affaire
- Koloniale Hogeschool van België (Université Coloniale de Belgique) (note)
- De Koloniale Hogeschool: een arena voor discussies over de koloniale wetenschap, administratie en elite
- De Duve, Christian (1917-2013)

A few notes were translated by UMons students

Communication

Social Media

Efforts were made to post daily on Facebook and Twitter. As there were little to no events to advertise in 2020, the posts consisted of database highlights (see above) or new stories/notes, in addition to occasional news posts. Special effort was made to advertise relevant digital content from partners, such as Cultuurgeschiedenis.be (KU Leuven), Pyramids & Progress (VUB), the Sarton Centre for History of Science (UGent), and Gewina.

Tweets were usually shorter versions of the Facebook post. Due to the gap in posting, data about posts was incomplete and thus not mentioned here. A few 'successes' were a like and retweet from Frank Deboosere and a Facebook post that was shared and liked by hundreds of people.

Website

Special effort was made to update the frontpage with 'news items' on a daily basis.

Newsletters

Two newsletters containing new stories and notes and news items were sent in 2020. These were written and translated by Eva Schalbroeck

First newsletter:

- French version: <https://mailchi.mp/b481c2dd2e55/bulletin-1-2020>
- Dutch version: <https://mailchi.mp/210f75911533/nieuwsbrief-1-2020>

Second newsletter:

- French version: <https://mailchi.mp/1ceb10dfc7d6/dossier-universit-coloniale>
- Dutch version: <https://mailchi.mp/90899b3a8225/dossier-koloniale-hogeschool>

Maintenance

During Spring 2020, Eva Schalbroeck updated the home page. She straightened out the layout and added to the ‘recent verschenen’ en ‘verhalen’ sections.

She also updated the ‘story page’, adding the latest stories. She updated the ‘newsletter page’, adding the latest newsletters. She updated the ‘about pages (also on Facebook)’. She finally, also updated the page with relevant links, getting rid of old links and adding new, relevant ones. She made these changes for both the Dutch and French page.

Miscellaneous

Digital Public History for the “Day of Contemporary History”, organised by the Belgian Society for Modern History

Eva Schalbroeck’s proposal for a panel with Jolien Gijbels (KU Leuven), Yoanna Alexiou (ULB). Sophie Richelle (ULB), and Fien Danniau (UGent) was accepted. It is indefinitely postponed due to the covid pandemic

Contemporanea

Contemporanea, the journal of the Belgian Society for Modern History, did a review of Bestor: <https://www.contemporanea.be/nl/node/559>

ETWIE

Eva Schalbroeck planned to represent Bestor at and ETWIE event (Expertisecel voor technisch, wetenschappelijk en industrieel erfgoed). The event was cancelled due to the covid pandemic

[d] Hand-over

In June 2020, Eva Schalbroeck met with some of the members of the National Committee for the Logic, Philosophy and History of Science. She sent a list with things that required finishing off. Meanwhile, the members discussed the future function of Bestor and the role of the new employee.

A draft of the job vacancy was sent round in November 2020 and commented on.

[e] Activities planned for 2021 and 2022

A new staff member

After the departure of Dr. Schalbroeck for a tenure-track job at Utrecht University (NL), the NC was very happy to recruit Mr. Hannes Van Engeland in December 2020. We attach the (widely distributed) job vacancy text as an appendix to this annual report. Mr. Van Engeland comes highly qualified to help steer BESTOR into the directions set down below, as well as to assist the NC in preparing the biennial ESHS conference 2022.

A new website

As mentioned above, Bestor is planning to change and improve its digital policy and infrastructure during 2021 and 2022. Obtaining a website and a new host institution for Bestor's data is key to achieve this. Since 2008 Bestor has been hosted on the server of the Faculty of Arts of the KU Leuven. The costs are covered by the budget which Prof. Dr. Geert Vanpaemel receives from the KU Leuven. The ICT team of the Faculty of Arts of the KU Leuven is responsible for updates and maintenance. Bestor's dependency on this ICT team has two considerable negative consequences. Firstly, the KUL Arts Team is too busy to implement highly necessary updates, such as a new skin (see above). Secondly, this regulation is tied up with Prof. Dr. Geert Vanpaemel's KU Leuven position, which will come to an end in October 2021, when he retires.

Plans to change this situation are based on discussion held by Prof. Dr. Geert Vanpaemel, Eva Schalbroeck, and Virgile Royen in early 2020, the *Visietekst* which Lyvia Diser left us upon her departure, and the NC's discussions during its meetings on 19/09/2019 and on 14/11/2019. A quick and short-term solution consists of finding another KU Leuven Arts academic who would continue

to allow Bestor to host its data on the KU Leuven server. Prof. Dr. Kaat Wils of the Research Group Cultuurgeschiedenis since 1750 comes to mind. But a long-term and effective solution which would put an end to the current unpractical double structure – data hosted with the KU Leuven, but workers dependent on the Academies – and thus the solution we are most partial to would be to transfer the data from the KUL Arts Servers to those of the Academies. This would allow Bestor to be covered by the ICT Team of the Academies, with which it can collaborate far more easily to implement changes and updates.

To implement this solution, the KVAB and ARB need to be on board. Two members of the NC, who in principle agree with Bestor's request, met with the national secretaries of the KVAB and ARB to explain and defend it and gauge the opinion of their ICT teams, as the transfer is a considerable challenge, not only from a technical but also from an organisational point of view. They are confronted with several questions: would it be better to transfer the data to one overarching server or to split it between the French-speaking and the Dutch-speaking server? Who will be responsible for the maintenance and updates? Can the academies' server contain the considerable amount of data which Bestor has (in large part due to the images in the database)? Do their teams have the time and the skills required to update and maintain both a website and the encyclopedia? The questions will also be discussed by the NC. In addition to answering these questions, the NC and the academies will need to reach a hosting agreement about issues, such as data security, privacy, and intellectual property.

This proposed data transfer would be an ideal opportunity to make some much-needed changes to our increasingly outdated digital infrastructure, in particular the abovementioned improvements to the look and user-friendliness of the website. In addition to obtaining a new interface to improve attractiveness and visibility, we also need one which works better for Bestor's role as a news platform, network, and forum. The current main page is based on a standard template with many columns which is hard to modify quickly, precisely what is required if we want to add news on a daily basis. Bestor also urgently requires new MediaWiki extensions, which will improve the searchability of the database. To find a record, readers now need to type in exact search strings. A search engine with advanced search options, tagged records, and a 'did you mean' option, would allow them to find records far more easily. This would also allow us to better respond to the fact that many people actually land on Bestor via a general search engine, such as Google. To gain more newsletter subscribers, we would like to install a pop-up window, inviting a first-time reader to subscribe to the newsletter. Such a pop-up widget exists in Mailchimp, but as it has to be programmed in the database's code, its installation needs to be part of a larger update.

The most effective solution would be the creation of a new website that is not in MediaWiki format. We would keep the database in its MediaWiki format and link it with this new website, which would allow us to implement all the above-mentioned improvements. The result would be a neat, visually attractive, and user-friendly website with a homepage which contains a search engine, providing access to the MediaWiki database, news, a subscription pop-up, links to the newsletters, our Facebook page and Twitter account, alongside links to Bestor content. We are now awaiting advice from the Academies' ICT Team on the server transfer and our wishes for the website. As soon as we have heard back from them, we plan to organise a meeting between them and the ICT Team of the Faculty of Arts of the KU Leuven.

A new language, English, for a broader target audience

In 2021, we wish to make further progress in making Bestor content available in English. Our statistics show that 20% of our readers come from non-French or non-Dutch speaking countries. Providing English content would not only allow us to cater to these readers and allow us to significantly enlarge our audience. It would also enable us to showcase the history of Belgian sciences, something which is a real object of interest abroad thanks to Belgian innovations and colorful figures, and the important scholarship produced about it. Our plan is to link a new website to translations of our news platform, our portals, newsletters and records which we believe an English-speaking audience will want to read. We will start by making a list of the records we have in mind. By means of a test, Eva Schalbroeck translated her story on radium, which touches upon international development and involves non-Belgian actors, into English and spread it via her social media channels. The fact that this was well-received is a sign that there is an English-speaking audience for Bestor.

Creating new records

Bestor remains fully committed to creating new records and writing new stories in 2021. We will, however, have to see how we can deliver these with only one half-time employee, who will also be occupied with transferring the server, setting up a new website, and doing promotion. Considering these elements, Hannes Van Engeland and Prof. Dr. Geert Vanpaemel have decided on the following content for 2021

N° 1 (June)	<ul style="list-style-type: none"> × A story and note on Jean Ladrière (1921-2007) for the occasion of his birth, 100 years ago × Aankondigingen Annonces
N° 2 (Nov)	<ul style="list-style-type: none"> × Story on the Solvay-conferences for the celebration of the first Solvay-conference, 100 years ago × Notes on Solvay × Aankondigingen Annonces

In addition, a calendar with important dates (birthdays etc.) in the history of science in Belgium is being made. Its purpose is twofold: it will serve as a useful tool for future popularisation and communication and, over time, it will allow for a “on this day in Belgian science” section on the main page of the site.

Translations

In 2021-2022, Bestor will continue and increase its translation efforts. We will maintain our collaboration with Mons University, of which we recently received four translations.

Moreover, an index is being made of all notes in Dutch, French and English, this will allow us to have a clear overview on which notes need further translation (in Dutch, French or English), and which English notes already have been translated. Furthermore, this has allowed a better integration of the French and Dutch sites. Systematic translations to English have started, the notes in the category history of science, have all been translated. These translations are not public yet but will be plugged in when the English version of Bestor is launched. When, in translating to English, a Dutch or French translation also seems needed, these are translated as well.

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

There are no meetings of the committee in 2020.

3. General Assembly of the Scientific Union

No General Assembly in 2020. The next general assembly of the IMU is in 2022;

4. Other activities

- The Newsletter appeared five times in 2020 and was distributed electronically.

- There were no other activities. The planned activity in March 14 had to be postponed due to COVID-19.

5. Future perspectives

For the moment we are waiting how the COVID-19 situation will develop before making plans for new activities. Most members have their hands full with alternative teaching and coaching PhDs.

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

[a] January 7, 2020. Main conclusions:

- NCTAM Best PhD Award: Establishing a short list of 5 candidates for the Best Thesis Award (out of 11 applicants).
- Discussion about the organization of a (one-day) NCTAM Conference in the Academy Palace.

[b] February 27, 2020. Main conclusions:

- Selection of the laureate of the NCTAM Best PhD Award 2019. Dr. Marco Lucio Cerquaglia (ULiège) has been selected as the laureate of the NCTAM Best PhD Award 2019. He was also selected as candidate for the ECCOMAS Award.
- Discussion about the organisation of a (one-day) NCTAM Conference in the Academy Palace. The event was planned on 25th of May 2020.

[c] Via e-mail communication

Due to COVID-19, the event has been cancelled. The event was postponed to Monday the 9th of November 2020. This one has been cancelled too. The (one-day) NCTAM Conference will be postpone ending 2021. More information via www.nctam.be.

3. General Assembly of the Scientific Union

The IUTAM General Assembly of the Scientific Union in 2020 would take place in Milan, August 2020. Due to COVID-19, the next meeting of the General Assembly of IUTAM was held remotely by electronic means on August 25-26, 2020. Prof. Dirk Vandepitte and Prof. Patrick Guillaume participated. The IUTAM Report 2019 can be accessed on the IUTAM website at <https://iutam.org/publications/annual-reports/>.

4. Other activities

None other activities due to COVID-19.

5. Future perspectives

- The organization of annual (one-day) NCTAM Conferences
- The organization of more GRASMECH Courses

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

In 2020, the NaCoMi gathered only in one regular meeting on February 21, 2020 due to the COVID-19 pandemic. The main objective of the Committee was to organise an outreach initiative in order to spread information on the importance of microorganisms for individuals and for the community. Due to the COVID-19 pandemic, these initiatives are postponed for the years 2021-2022.

Outreach microbiology to a broader public. The item has been discussed in a former NaCoMi meeting. The idea was to start this initiative in 2020. After a short discussion it was agreed that we, as committee, should focus in a first phase on the community that is not yet part of various running programs at different universities that envisage to inform secondary school students about several scientific issues. Also, programs that are embedded in courses for academic seniors, although of interest to inform them about our initiatives, would remain out of the scope in this first phase. In conclusion, the committee will propose to -so called- 'social organizations' a limited number of topics suitable for evening talks of 1-1.5 hours that could be integrated in their programs of 2021. Their program is usually scheduled in September/October. The goal of these contributions should be spreading information about a variety of subjects illustrating that microorganisms are the driving forces for life on earth and are as such beneficial in food and biotechnological industries; human, animal and plant health; and may have a role in climate change management. Apart from this positive role, microorganisms may also form a threat to human, animal and plant health.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other activities

Due to the COVID-19 crisis, there were no other activities planned by the committee in 2020.

5. Future perspectives

The following plans for 2021 are on the table:

- Planning of online meeting of NaCoMi in relation to activities of the BSM (Belgian Society for Microbiology)
- Planning on outreach, agreed upon for 2020 is conserved for 2021 and effective activities in 2022
- With the support of NaCoMi, the Belgian Society for Microbiology will organise an online Symposium and General Assembly of the BSM. Title of the Symposium: Microbiology at the 2020 horizon. For further details see <https://belsocmicrobio.be/annual-meeting-and-assembly-2020>.
- Report on the activities of the ICSP (International Committee on Systematics of Prokaryotes)
- Follow up of FEMS activities
- As soon as allowed by reduced COVID-19 sanitary precautions, NaCoMi will meet in Brussels at the Palace of the Academies for its normal meetings.

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 website⁵.

2. Meetings of the Committee

Meetings were held on March 6, 2020 at the Academy Palace (Brussels) and on September 9, 2020 via Teams. The main points of these meetings were:

- The 2021 colloquium
- Promoting Belgian physics research.
- New members of the Committee
- Nominations for IUPAP commissions.

3. General Assembly of the Scientific Union

The 30th General Assembly of IUPAP was planned for October 12 – 14 in Beijing, China. However, due to the coronavirus pandemic, the meeting of the General Assembly of IUPAP, initially scheduled for October 2020, has been postponed by one year. Membership in IUPAP commissions has been extended by one year and the procedure for nominating candidates for IUPAP commissions has been suspended.

4. Other activities

[a] 2021 colloquium of the NCPAP

The scientific committee of the 2021 colloquium has been set up with the following members: Alexandre Sevrin (VUB, Einstein Telescope) Dirk Ryckbosch (UGent), Giacomo Bruno (UCL), Michael Gillon (ULg), Leen Decin (KUL), Christoph Collette (ULB/ULg), Nick Van Remortel (UAntwerpen, Einstein Telescope), Jeffrey Compere (ULB). R. Weynants, T. Metens and R Sporken are ex officio

⁵ <https://sites.google.com/site/physbel/>

members of the scientific committee. The scientific committee of the colloquium gathered via teleconferences on May 29, June 24 and on November 20, 2020. Due to the coronavirus pandemic the meeting date, initially Saturday, March 27, 2021 cannot be maintained. The members of The Belgian National Committee for Pure and Applied Physics agreed to postpone the Colloquium to April 2, 2022. The provisional program of the 2022 Colloquium consists in an introduction by Prof. C. Waelkens (KULeuven) followed by two morning lectures, respectively by Prof. Gabriela Gonzalez, Louisiana State University, USA, “Basics and Detection of Gravitational Waves” and by Prof. Jo van den Brand, Nikhef Amsterdam and University of Maastricht, “Gravitational Waves: what lies in the future?”. A Poster session will present the contributions from the Belgian research groups active in the fields. The afternoon session will start with a lecture by Prof. Michel Mayor, University of Geneva, Nobel Laureate 2019, “Discovering Exoplanets” and will be followed by the lecture of Prof. Lisa Kaltenegger, Cornell University, USA, “Habitability of Exoplanets”. Finally, conclusions will be drawn by Prof. Y. Nazé (ULiège). The scientific committee is exploring the possibility to produce a video teaser about the colloquium.

[b] Research in Physics in Belgium:

The next updates are about Quantum Mechanics & Optics and Nuclear Physics. Educational Physics and Statistical Physics should be updated within the close future too.

[c] Nominations for IUPAP commissions.

The committee agrees to nominate the following candidates for the period of 2020 - 2022:

- C3: C. Maes (KUL) (nominator: Y. Bruynseraede)
- C4: to be determined (suggestions: Nick Vandermoortele, Nick van Eindhoven (VUB), Ioana Maris (ULB), Simona Toscano (ULB)) (nominator: D. Ryckbosch)
- C5: C. Van Haesendonck (KUL) (nominator: Y. Bruynseraede)
- C8: F. Peeters (UA) (nominator: J. Tempere)
- C10: Ph. Lambin (UNamur) (nominator: R. Sporken)
- C12: N. Severijns (KUL) (nominator: P. Van Duppen)
- C13: C.S. Iorio (ULB)* (to be confirmed) (nominator: P. Defrance)
- C15: X. Urbain (UCL) (nominator: P. Defrance)
- C16: J. Ongena (KMS-ERM)* (nominator: R. Weynants)
- C18: A. Sevrin (VUB)** (nominator: J. De Coninck)
- C19: C. Aerts (KUL)*** (nominator: R. Weynants)
- C20: G.M. Rignanes (UCL) (nominator: X. Gonze)

* present member, serving 2nd term. Interested in nomination as chair, vice-chair or secretary, ** present member, serving 2nd term. Interested in nomination as vice-chair or secretary, *** present member, serving 1st term. Interested in second term, not as chair, vice- chair or secretary.

[d] The president of IUPAP has been seeking advice from its members about the definition of a strategic plan for IUPAP. A draft strategic plan has been distributed to members of this committee through our website. The plan has been discussed by BNCPAP at the meeting of September 9 2020. The general feeling among members of the BNCPAP is that the proposed activities are all relevant. Some, perhaps even most of them, are also being dealt with by national societies. Hence, there could be some emphasis on strengthening the link between IUPAP and national and international physical societies, with the aim of developing complementary actions. In this way, IUPAP could become more relevant for the national bodies and societies that operate in a rather insular mode, with few interactions. IUPAP could foster the exchange of good practices and ideas among its members and member societies. This would be especially helpful for the smaller societies and for those in developing countries, but physics societies and organisations in developed countries can also benefit from more exchange of ideas. It is also suggested to put more emphasis on sharing knowledge and on allowing remote access to tools and data: IUPAP could probably play an important role in making high-quality teaching resources, including online courses, videos of classroom demonstrations, virtual laboratories etc. widely and freely available. Finally, it is suggested that IUPAP could be an effective link between national or international physical societies and supranational organisations like UNESCO and the United Nations.

5. Future perspectives

In 2021, NCPAP will continue preparation of the Colloquium on *Gravitational Waves and Exoplanets* (production of a video teaser by the scientific committee, search for additional sponsoring, finalizing program and practical matters, sending out announcements). Decisions will be made regarding replacement of one member of the committee. NCPAP will continue its efforts for promoting the Physics Research Activities in Belgium via the reports on Research in Physics in Belgium and the expansion and continuous updating of the calendar of events. Nominations for membership in IUPAP commissions will be submitted as soon as the call is open.

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

Normally, the Committee organizes a scientific session twice a year and a general assembly once a year, but due to the coronavirus crisis these meetings were cancelled.

3. General Assembly of the Scientific Union

No General Assembly in 2020.

4. Other Activities

The meetings were canceled due to the coronavirus crisis (Spring meeting on May 8, 2020) and Autumn meeting November 27, 2020).

5. Future perspectives

The dates of the meetings in 2021 have yet to be determined.

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

Because of the pandemic conditions, the committee only held one meeting in 2020, on January 11, 2020.

3. General Assembly of the Scientific Union

The next IUPsyS meeting should have been held in Prague, July 19-24, 2020, but has now been postponed to July 18-23, 2021 in light of the unfolding COVID-19 pandemic. Belgium has two representatives in the general assembly: One nominated by the Belgian Association for Psychological Science, the other by the National Committee. BAPS, after discussion with the National Committee, has nominated Pr. Jan De Houwer (UGent) both as a keynote speaker and as its representative. The National Committee has nominated Pr. Frank Van Overwalle, its vice-president, as the second representative and as a State-of-the-Art Address speaker.

2. Other Activities

The committee organizes bi-annual symposia. The last symposium took place on May 7, 2018 at the Academy, and was titled *Windows on brain plasticity* (Organizer: Pr. Philippe Peigneux). The committee has now begun planning its next symposium, tentatively dedicated to *parental burn-out* and organized by Pr. Moira Mikolajczak. It will most likely take place in 2021.

The committee also assists, every year, the Belgian Association for Psychological Science in selecting the recipient of its “Best Thesis Award”. The 2020 competition is now completed. A jury composed of committee members Pr. Sara De Gieter, Pr. Moira Mikolajczak, Pr. Régine Kolinsky and Pr. Frank Van Overwalle (president) selected the Master’s thesis composed by Rakoen Maertens (UGent) titled *Can inoculation theory be used to combat climate change misinformation?*. The 2021 competition is now underway and a new jury will be appointed during the next committee meeting.

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, planned for 2021, 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 normally meets regularly at the Academy or, since 2019, also via electronic meeting tools and video-conferencing.

The Committee also normally 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 as Secretary-General.

2. Meetings of the Committee

2020 has been a very special year as all of us are very well aware and our activities have been disturbed by the worldwide pandemic and the restrictions with respect to meetings and travelling. During 2020, no formal meetings took place of the Belgian URSI Committee apart from some informal meetings and contacts between some of the members.

These informal contacts focused on the following issues:

- Celebration of the 100th anniversary of URSI which include the organization of special sessions at the URSI Flagship meetings as well as the preparation of a book on the 100 years of URSI. The celebrations were also intended to include a special symposium addressing a topic of wider interest: *Radio Science for a Sustainable and Changing World - The last and the next 100 years* at which occasion the King of Belgium was invited. Early 2020, a letter was received from the Palace that the King of Belgium was not able to accept the invitation. Soon after this message, it became clear that due to the pandemic, the organization of a symposium in Brussels would not be possible. Consequently, after consultation with the URSI Board, it was decided to abandon the intentions to organize this special symposium and focus on the special sessions at the GASS as well as the book on 100 years of URSI.
- Retirement of Jean-Claude Jodogne. Dr. Jodogne has been an active member of our Committee during many years and has been actively contributing to the activities within the area covered by URSI Commission G.

- A proposal is made to add a new member and more specifically the nomination was received to accept Dr. Tobias Verhulst (IRM-KMI-RMI Dourbes). At the next meeting, this nomination will be discussed.
- Preparation of the URSI GASS 2020 conference and, following the decision by the URSI Board and the GASS 2020 Local Organizing Committee in Rome to postpone the GASS 2020 to 2021, preparation was continued in view of the URSI GASS 2021 conference. This preparation constitutes of proposals for scientific sessions as many of our committee members are acting as convenors of the sessions, as well as the submission of scientific papers. Several of our members are also part of the Technical Programme Committee and are involved in reviewing the submitted papers.
- Initial preparation of the upcoming 3rd URSI Atlantic Radio Science Conference (AT-RASC 2022), May 29 - June 4, 2022, Gran Canaria, Spain
- Initial preparation of the upcoming URSI Asia-Pacific Radio Science Conference (AP-RASC 2022), scheduled on August 21-25, 2022, Sydney Australia

3. General Assembly of the Scientific Union

URSI Flagship meetings in 2020:

[a] Overall statistics

The URSI GASS 2020 was originally scheduled in Rome from August 29 - September 5 and has been postponed to 2021.

In total 1889 papers were accepted from 41 countries and were used to compose in total 154 sessions. This is a considerable increase with respect to the previous edition held in August 2017 in Montreal, Canada. which welcomed 1483 submissions from 56 countries/regions.

[b] Participation from Belgium

Out of the accepted papers, 26 papers have a first author from Belgium:

- *How much power is radiated by the BRAMS transmitter? And with what pattern?*, Michel Anciaux, Royal Belgian Institute for Space Aeronomy, Belgium;
- *A Holistic Antenna Design Paradigm for the 5G Wireless Communication System*, Sam Lemey, Ghent University - imec, Belgium;
- *Comparison of Two Novel Integral Equation Approaches for Lossy Conductor Modeling*, Martijn Huynen, Ghent University - IMEC, Belgium;
- *In memory of Jean Van Bladel*, Paul Lagasse, URSI secretariat, Belgium;

- *Empirical Channel Modeling for WBANs at sub-6 GHz and Millimeter-Waves*, Reza Aminzadeh, Ghent University - imec, Belgium;
- *Planetary Rotation and Interior from Lander Radio-science*, Sébastien Le Maistre, Royal Observatory of Belgium, Belgium;
- *Prediction of Mars' Ionosphere Impact on Radio-Science Experiment*, Nicolas Bergeot, Royal Observatory of Belgium, Belgium;
- *Air-filled Substrate-Integrated-Waveguide Technology for Broadband and Highly-Efficient Photonic-Enabled Antenna Systems comparison of the ionosphere-plasmasphere system at mid-latitudes*, Nicolas Bergeot, Royal Observatory of Belgium, Belgium;
- *On the quality of automatic scaling of digital ionograms: DPS-4D/ARTIST-5 performance at a mid-latitude location*, Stanimir Stankov, Royal Meteorological Institute, Belgium;
- *The Earth's Plasmasphere: Pending Questions and Issues*, Joseph Lemaire, Royal Belgian Space Aeronomy Institute, Belgium;
- *History of the Discovery of the Plasmopause by D.L. Carpenter, Stanford University, and by K.I. Gringauz, IKI*, Joseph Lemaire, Royal Belgian Space Aeronomy Institute, Belgium;
- *Auroral Hiss Associated with Dayside Magnetodisc Reconnection Sites on Saturn*, Ruilong Guo, University of Liege, Belgium;
- *Plasmasphere observations with Cluster data supplemented with data from the Dynamics Explorer-1 and Van Allen Probes*, Sam Lemey, Ghent University - IMEC, Belgium;
- *Power maximization for a multiple-input and multiple-output wireless power transfer system described by the admittance matrix*, Ben Minnaert, Odisee University College of Applied Sciences, Belgium;
- *Body-Centric LoRa Networks Based on System-Integrated Textile SIW Antennas*, Thomas Ameloot, Ghent University, Belgium;
- *Which meteor and ionospheric parameters can be retrieved with the BRAMS network?*, Hervé Lamy, Royal Belgian Institute for Space Aeronomy, Belgium ;
- *Ionosphere-Plasmasphere TEC Climatology over Antarctica* Nicolas Bergeot, Royal Observatory of Belgium, Belgium;
- *Impact of a remote ionosonde on the IRI real-time assimilative model*, Tobias Verhulst, Royal Meteorological Institute (RMI), Belgium;
- *Ionosphere Monitoring Using Dual Frequency Smartphones*, René Warnant, University of Liege, Belgium;
- *Inter-hemispheric*
- *missions*, Fabien Darrouzet, The Royal Belgian Institute for Space Aeronomy, Belgium;

- *Solar radio bursts and space weather effects*, Christophe Marqué, Royal Observatory of Belgium, Belgium;
- *Space weather models for the solar wind and the plasmasphere*, Viviane Pierrard, Royal Belgian Institute for Space Aeronomy, Belgium;
- *Fine structures of interplanetary radio emissions*, Immanuel Jebaraj, ROB, Belgium
- *A Polynomial Chaos Stochastic Model for 2D Breast Microwave Scattering*, Ann Franchois, Ghent University, Belgium;
- *Personal Distributed Exposure Meters for the mm-Wave Band*, Reza Aminzadeh, Ghent University - IMEC, Belgium;
- *Beam width assessment of a Linear Array for MaMIMO applications at 3.5 GHz using measurements and raytracing* Arno Thielens, UGent-IMEC, Belgium;

Besides these 26 accepted papers with a Belgian 1st author, 6 more papers have Belgian scientists as co-author.

Although GASS 2020 did not take place as physical event, the URSI Board decided to keep the Young Scientists Awards. From the 26 papers with a Belgian 1st author, 5 applied for a Young Scientist Award. Out of these 5 applications, *A Holistic Antenna Design Paradigm for the 5G Wireless Communication System*, Sam Lemey, Ghent University - IMEC, Belgium was selected and awarded with an URSI Young Scientist award. A recorded presentation of this paper is available on the URSI website.

Following the decision by the URSI Board to postpone the GASS 2020 to 2021, different options were offered to all authors of accepted papers:

- Inclusion of the paper in the GASS 2020 Proceedings with the option to submit the paper to IEEE Xplore
- Withdrawal of the accepted paper to offer the possibility for authors to submit the paper to another conference or journal
- Re-submission of the paper to GASS 2021

Out of the 26 accepted papers with a Belgian 1st author:

- 5 authors opted for the papers to be included in the proceedings of GASS 2020 and submitted to IEEE Xplore;
- 15 are re-submitted to GASS 2021;
- 2 papers were withdrawn.

Due to the worldwide COVID-19 pandemic, the scheduling of the URSI Flagship meetings has been changed as follows:

- 2021: The next General Assembly will take place in Rome from August 28 till September 4. The original paper submission deadline was set on January 21, 2021 but has been extended

by 2 weeks and is at the time of writing this report still open. Statistics of participation from Belgium will be provided in the report covering 2021.

- 2022: The 3rd URSI Atlantic Radio Science Conference (AT-RASC 2022) will take place in Gran Canaria, Spain, during the period May 29 - June 3, 2022. Originally, AT-RASC was scheduled for 2021, but due to the pandemic and shifting the dates for the URSI GASS in Rome, the AT-RASC conference was shifted also by 1 year.
- 2022: URSI Asia Pacific Radio Science Conference (AP-RASC 2022) remains as originally scheduled on August 21-25, 2022, Sydney Australia.
- 2023: In August 2023, the URSI GASS will be held in Sapporo, Japan and this will then be back on the year-long triennial schedule on which URSI Flagship meetings have been organized.

4. Other activities

[a] Homage to Professor Jean Van Bladel

Professor Jean Van Bladel, former Secretary General of URSI international, and Honorary member of URSI Belgium, passed away in January 2018. URSI decided to organize a special session dedicated to Prof. Van Bladel and his work at the occasion of the 2020 URSI General Assembly in Rome. This session would have included invited presentations by: Mithat Idemen (Turkey), Paul Lagasse (Belgium), Ismo Lindell (Finland), Yahya Rahmat-Samii (USA), Paul D. Smith (Australia) representing five countries on three continents.

As URSI, through this memorial session, opted to bring a fitting tribute to the memory of Prof. Van Bladel, it was decided to re-schedule this session as part of the 2021 URSI General Assembly in Rome. All speakers agreed to participate as originally scheduled and as with all sessions at the GASS 2021, depending on the health situation, this session and its presentations will take a hybrid format, allowing both on-site as well as online participation and presentations.

[b] After the URSI Benelux Forum 2019 organized by Prof. Peter Van Daele on December 3, 2019 in Brussels at the Royal Academy on the theme *Interaction with your environment through Radio Science*, and in view of the pandemic, no URSI Benelux Forum was organized in 2020. The next Benelux Forum will be organized by the Dutch URSI Committee, but dates will depend on the health situation. The URSI Benelux Forum always aims at encouraging doctoral and young postdoctoral researchers to present their research and results to a wider public. Through the diversity of topics being presented at the forum, just like with URSI Flagship meetings, interdisciplinarity and contacts with fellow researchers are basic parts of the meeting, and consequently this can only be achieved by on-site meetings.

[c] Celebration of the 100th anniversary of URSI

URSI was established in 1919, at a meeting of the pre-runner of ICSU. Back in 2018 already, the URSI Board decided to take advantage of this anniversary to advertise URSI to a wider public using different tracks. Specific scientific sessions were to be organized at the occasion of the next 3 Flagship meetings: AP-RASC 2019, GASS 2020 and AT-RASC 2021. Obviously, these have been re-scheduled to GASS 2021 and AT-RASC 2022.

Of specific interest for our Belgian National Committee is the fact that our Honorary Member Prof. André Vander Vorst has been invited to give a plenary talk on the history of URSI. This plenary talk is still scheduled for URSI GASS 2021 as well.

During 2019 and 2020, Prof. André Vander Vorst has been very active in preparing this talk as well as the contribution from our National Committee to the book *100 years of URSI* of which the final chapters are currently undergoing final editing. This book will be published in 2021 and will be available in printed version at the GASS 2021 in Rome.

Besides the contribution by Prof. André Vander Vorst covering the activities of the Belgian URSI Committee, the introduction to the book has been prepared by Prof. Paul Lagasse, our honorary member and my predecessor as URSI Secretary General. This introduction covers an historic overview of the early years of URSI based on the archives at the URSI Secretariat.

Besides these, more scientifically oriented tracks, as part of the general programme of the URSI Flagship meetings are scheduled.

5. Future perspectives

First of all, the intention is to re-start the regular meetings of the Belgian URSI Committee. In first instance, in view of the restrictions still present, these meetings will be organized online and will, as usual, consist of both an administrative part as well as a scientific presentation.

As part of the celebration of the 100th anniversary of URSI, the participation of several members of our National Committee in the technical programme of the upcoming URSI General Assembly in Rome as well as the involvement of our National Committee in other URSI initiatives will be highlights of our activities in 2021.

In 2021, the 30th BENELUX URSI Forum will be organized by the colleagues of the National Committee in the Netherlands and will, most probably, be hosted by TU Delft.

NATIONAL COMMITTEE FOR SOIL SCIENCES

INTERNATIONAL UNION: INTERNATIONAL UNION OF SOIL SCIENCES (IUSS)

1. Introduction, mission, goal

The NCSS was set up in 2002, following long lasting activities of the Soil Science Society of Belgium (established 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). The mission of SSSB/NCSS aim to gather all actors of the soil science community in Belgium. The society informs these actors of soil-related challenges and opportunities, recent developments and contributes to the preservation and enhancement of soil resources for future generations. The SSSB provides networking opportunities between different disciplines of the soil science community and between universities, government agencies and companies in order to promote a transdisciplinary approach to soil science with special attention to young talent. We are a bridge between employees and job seekers. The society is also the first contact point for international exchange on soil-related topics.

2. Meetings of the committee

Board Committee meeting on April 1 and October 21, 2020, online due to COVID19 measures. To be noted that all supporting documents on these meetings such as reports, book of abstracts etc... are available upon request. For security reasons we can no longer refer to the website as we used to do in our previous annual report. We are working on a secured member area to access these documents.

Main conclusions: the NCSS has successfully virtually met two times and did their utmost best to figure out how to handle the COVID19 situation, while keeping SSSB members posted with regard to the organization of the events.

3. General Assembly of the Scientific Union

J-T Cornelis and K. Vancampenhout took part to the virtual IUSS inter congress meeting (18-23 November 2020), in preparation for World Soil Congress in Glasgow 2022.

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.

4. Other activities

- Day of Young Soil Scientists has been postponed due to COVID19 measures.
- International excursion has been postponed due to COVID19 measures.

5. Future perspectives

NCSS will organize 4 core activities in 2021:

- 2 board meetings (in March 2021 & in November 2021) at RASAB, depending on COVID19 measures;
- A General Assembly and Day of the Young Soil Scientist in April 2021;
- An international excursion on 'Soil and Wine' in May 2021 in France, organized by Prof. Bruno Delvaux (UCLouvain).

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 the Internationale Science Council - ISC or a member of a scientific institution of ISC (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) <i>Biological Sciences*</i>	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	<p>International Union of Pure and Applied Biophysics (IUPAB)</p> <p>www.iupab.org</p>
7) Chemistry	<p>International Union of Pure and Applied Chemistry (IUPAC)</p> <p>www.iupac.org</p>
8) Crystallography	<p>International Union of Crystallography (IUCr)</p> <p>www.iucr.org</p>
9) Geodesy and Geophysics	<p>International Union of Geodesy and Geophysics (IUGG)</p> <p>www.iugg.org</p>
10) Geography	<p>International Geographical Union (IGU)</p> <p>www.igu-net.org</p>
11) Geological Sciences	<p>International Union of Geological Sciences (IUGS)</p> <p>www.iugs.org</p>
12) Logics, History and Philosophy of Science	<p>International Union of History and Philosophy of Science (IUHPS),</p> <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) <p>www.dlmps.org</p>
13) Mathematics	<p>International Mathematical Union (IMU)</p> <p>http://www.mathunion.org</p>
14) Mechanics	<p>International Union of Theoretical and Applied Mechanics (IUTAM)</p> <p>www.iutam.net</p>

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

- *Committees are currently inactive.*