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SUPPORTING CAREER DEVELOPMENT

AND RESEARCH

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The writing of this annual report was finalized during the start of the COVID-19 pandemic. As a consequence many objectives, predictions and future outlooks will have significantly changed by the time this will be published. We will therefore focus mainly on the results of 2019 and the situation at the start of 2020. Hence, this annual report contains an overview of EHA's activities in 2019, all executed to support EHA's mission:

'The European Hematology Association (EHA) promotes excellence in patient care, research and education in hematology'

'Towards a cure for all blood disorders'

In 2019 more hematologists in and outside Europe were able to benefit from our projects and programs than ever before. An overview of these activities is presented in this annual report. Rapid developments in hematology research, clinical practice and the regulatory and technical environment challenged us to strive for excellence and professionalism.

At our annual congress in June 2019 in Amsterdam, the Netherlands, we welcomed more than 12,600 hematologists. We organized another eleven meetings in and outside Europe to share knowledge and information on specific topics. In addition, the EHA Campus was launched as a new on-line learning platform. Also, the first EHA Guideline was published, as were two mentoring programs. One regards clinical research and the other focuses on translational research.

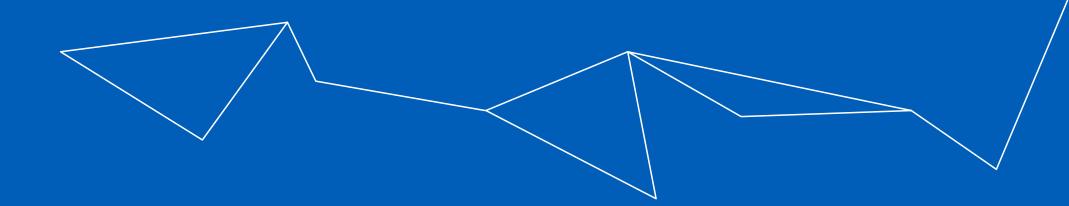
Also, in 2019 we further developed the EHA Topics-in-Focus, an initiative to raise awareness, provide education and promote research on two emerging topics: Immunotherapy and Hemoglobinopathies. This is just a selection of the 2019 activities driven by the EHA board and committee members, as well as the numerous volunteers we collaborate with. With our projects and programs, we aim to serve the interest of hematologists on their journey towards a cure for all patients suffering from blood disorders.

Professor John Gribben

EHA President



ABOUT EHA





EHA is a non-governmental and not-for-profit membership organization guided by its mission and by the core values of independence, integrity and transparency. Our Executive Board and committees dedicate expertise and time on a voluntary basis. With our projects and activities, we serve the interest of hematology and hematologists with the goal to improve patient care. EHA has several instruments in place to ensure that these interests are fulfilled.

How EHA is organized

The EHA Board is the governing body of the association and deals with issues of strategy and policy. The board sets the goals and objectives in conformity with EHA's statutes. As per December 31, 2019 the EHA Board was composed out of the following members:

President	John Gribben (UK)
President Elect	Elizabeth Macintyre (FR)
Past President	Pieter Sonneveld
Treasurer	Shai Izraeli (IL)
Secretary	Maria-Victoria Mateos (ES)
General Member	Kimmo Porkka (FI)
Councilor	Konstanze Döhner (DE)
Councilor	Kirsten Grønbæk (DK)
Councilor	Carol Moreno (ES)
Councilor	Martin Dreyling (DE)
Councilor	Antonio Almeida (PT)
Councilor	Helen Papadaki (GR)
Councilor	Maria Ester Bernardo (IT)
Councilor	Ruud Delwel (NL)
Councilor	Sabine Eichinger (AT)
Councilor	Giampaolo Merlini (IT)

Table: EHA Board members

Together with all EHA Committees many programs and projects have been started and continued in 2019 which are summarized in this annual report.



Figure: Core message



CONNECTING HEMATOLOGISTS WORLDWIDE

Membership

In 2019 EHA membership further increased to almost 5.500 members. This increase is expected to continue during the following years.

The main membership base is situated in Europe, which accounts for almost 72% of our members.

In 2019 joint membership with various National Hematology Societies in Europe was further strengthened by entering into an agreement with the British, Italian and Swiss Society of Hematology.

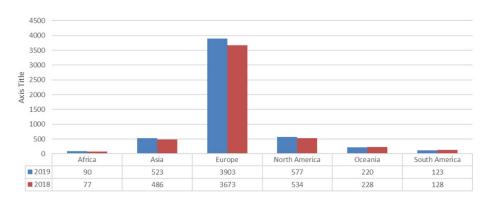


Figure: Main membership

Annual Congress

The 24th Congress of EHA was held in Amsterdam, the Netherlands, from June 13-16, 2019. It was the platform to learn from top hematology experts and to connect with hematology professionals from all over the world. It had been seven years since the RAI Amsterdam had last hosted the EHA congress. Since then the congress attendance has increased to a record number of 12.614.

EHA24 also reached another record: 2,470 abstracts were submitted. After a strict peer review procedure, a selection was presented in oral and poster sessions. In addition, speakers gave presentations on numerous topics, covering the hematology field comprehensively. Several special sessions were dedicated to career development and patient advocacy. EHA's partner organizations arranged joint symposia that covered a wide range of topics. In total 557 presentations were held in Amsterdam.



Sessions/speakers

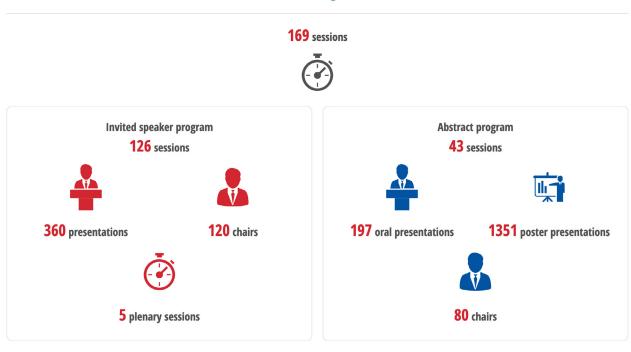


Figure: Fun statistics - Session/speakers



Congress attendees

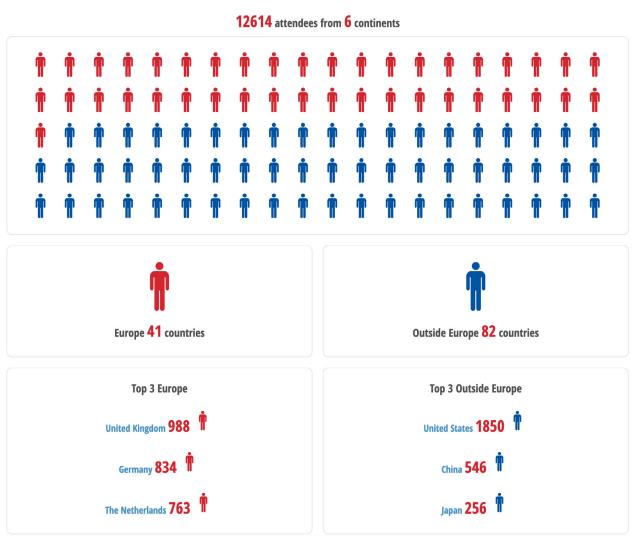


Figure: Fun statistics - Congress attendees







EDUCATION

'An investment in knowledge pays the best interest'

Medical Education Program

At EHA, hematology professionals can benefit from a variety of learning possibilities.

EHA Hematology Curriculum

The EHA Hematology Curriculum is the backbone of EHA's medical education program. The curriculum consists of sections of hematology competences and, within each section, a list of items. For each item a recommended level of competency is included.

The curriculum is used as a basis for studying by many hematologists throughout Europe and beyond. This is illustrated by the fact that the on-line Curriculum Passport, the on-line self-assessment tool, was used 1,446 times in 2019.

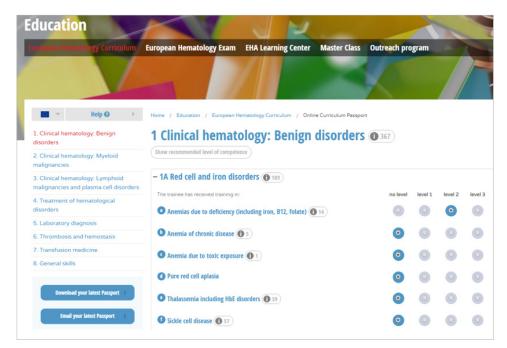


Figure: The online Curriculum Passport



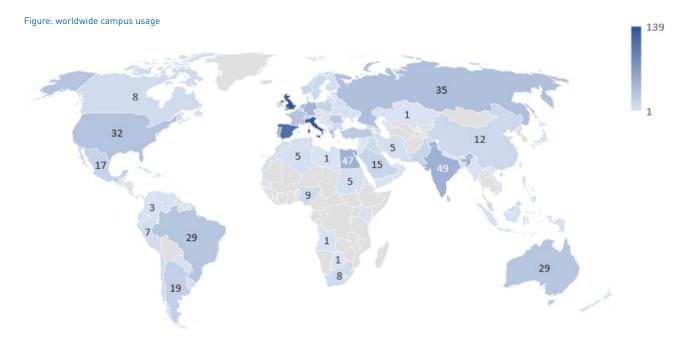
EHA Campus

To keep up with developments in on-line learning, and to make internet-based hematology education globally available, EHA launched its new on-line learning platform EHA Campus in January 2019. EHA Campus offers visitors high quality content on a wide variety of topics, representing all sections of the European Hematology Curriculum and matching different learning styles. In 2019, the EHA Campus offered over forty courses in various formats, ranging from clinical patient cases to more comprehensive courses that explore a complete disease area in depth. The learning program is constantly under development, as new learning materials are added regularly.



Since its launch in 2019, in total almost 1500 people from 106 countries found their way to the campus. The figure shows worldwide the campus usage. The darker the shade of blue, the more users.

EHA asks all students to give their feedback on the EHA Campus and the courses they took. The improvement suggestions will be taken into account during further development of the platform in 2020.



The quality of the courses was rated with an average of 4.3 on a scale of 5, and 99% of the respondents would recommend the EHA Campus to their colleagues. 61% of the people who completed the survey indicated that they intend to make a change in their practice as a result of this course, whereas for 34% the information reinforced their current practice. The word cloud below reflects the overall impression of the platform. The larger the text, the more often they are mentioned.

Figure: word cloud

course questions find makes useful excellent quality overall see images think cases learning platform works well navigation technical easy ease easy navigate navigate easy use good super excellent pictures ease navigation practical ok intuitive great need perfect impression time time slide slides really overall impression answers Nice well



Some quotes:

- "I will perform better in my job"
- "It helped me clarify many points I was unsure of"
- "Thanks to EHA for a well-developed educational platform"
- "It's easy to navigate and it has interesting courses"
- "Interesting case challenges give the opportunity of testing our knowledge on morphology"

European Hematology Exam

The European Hematology Exam (EHE) certifies excellent knowledge according to the criteria and topics of the European Hematology Curriculum. While the right to practice will still be granted by national authorities, the EHE provides an extra quality stamp for hematologists. It is an important step in the harmonization of hematology training and education in Europe and supports professional mobility.



The parallel session in Madrid, Spain



Two candidates proudly show their exam certificate

In June 2019, the <u>third edition</u> of the EHE took place in Amsterdam, the Netherlands. The number of parallel sessions was expanded from one in 2018 to five in 2019. These parallel sessions were held in Bern, Switzerland; Madrid, Spain; Lisbon, Portugal; Athens, Greece and Ankara, Turkey. The EHE is now officially implemented in the Swiss end-of-training exam for hematologists.

In total 149 candidates from 35 countries participated in the exam; 87 in the main session in Amsterdam, 27 in Madrid, 12 in Ankara, 8 in Bern, 8 in Lisbon and 7 in Athens. 116 examinees passed the exam, representing 77,85% of participants.

To guarantee independent judgment on the quality of the exam and the passing score definition, EHA collaborates with CITO. CITO is an internationally recognized professional research and knowledge institute in the field of testing and educational measurement. CITO's Psychometric Research and Knowledge Center carries out the psychometric analysis of the results.



EHA Master Class

The EHA Master Class is an on-line group-based learning experience for hematologists. It is divided into the Classical Master Class and the Bite-size Master Class.

Selected mentees learn through discussing various professional topics with peers and experts. Where the Classical Master Class offers five cases to be studied over the course of six months, the Bite-size Master Class offers a selected group of mentees the chance to gain in-depth knowledge on a single topic over the course of six weeks

36 mentees were selected to participate in the EHA Classical Master Class of 2018-2019.

The Bite-size Master Class course was held in February and October on the topics of thrombosis, thrombophilia and anticoagulation and on thalassemia. A total of 53 mentees participated in the Bite-size Master Class.

Overall feedback on the Master Class:

- "It has been a great experience!
 The cases are challenging and make
 you search for evidence to support your
 answers and study"
- "The cases are very interesting and the discussion with my group was great"
- "I like the fact that I can get information about the way of thinking and practicing in other countries"



INTERNATIONAL COLLABORATION & OUTREACH

International collaboration

EHA's International Collaboration Program in 2019 sent European speakers to countries around the world to take part in a variety of Joint Symposia, sharing their knowledge and providing education. The program is an important tool to create connections between Europe and many countries around the world.

These joint symposia were organized at the annual congresses of the following partner societies:

- Pan-Arab Hematology Congress & Saudi Society Congress
- Korean Society of Hematology International Congress
- Hematology Society of Taiwan Annual Congress
- Japanese Society of Hematology International Symposium
- International Society for Experimental Hematology Annual Meeting
- Polish Society of Hematology and Transfusion Medicine Biennial Meeting
- Argentinian Society of Hematology Biennial Meeting & EHA Educational Day
- Japanese Society of Hematology Annual Congress
- Russian Onco-Hematology Society's Conference on Malignant Lymphoma
- Spanish Society of Haematology Annual Congress
- Lebanese Society of Hematology and Blood Transfusion Annual Meeting (postponed)
- Turkish Society of Hematology Annual Congress

- Associação Brasileira de Hematologia, Hemoterapia e Terapia Celular Annual Congress
- Indian Society of Haematology and Blood Transfusion Annual Congress
- American Society of Hematology Annual Meeting

Global outreach program

In 2019 EHA's Global Outreach Program took us to thirteen different countries around the globe. The program is mainly aimed at providing hematology medical education to countries outside Europe. It gives prevalence to local needs. EHA's Global Outreach Program consists of Hematology Tutorials and Highlights of Past EHA (HOPE).

Hematology Tutorials

Hematology Tutorials are courses aiming to provide laboratory and clinical hematologists with an integrated diagnostic and clinical work-up of hematological disorders. The scientific program takes the participants through the diagnostic and clinical pathway with plenary lectures, interactively conducted clinical case study sessions and self-assessment sessions. The faculty is available to provide individual guidance to the participants throughout the meeting.

In 2019 the following hematology tutorials were held:



EHA-SLCH Hematology Tutorial on Myeloid malignancies and MDS

February 8-9 | Colombo, Sri Lanka

Chairs: G. Ossenkoppele, V. Gunawardena, H.W. Goonasekera

After a successful first edition in 2017, EHA and the Sri Lanka College of Haematologists (SLCH) organized its 2nd two-day tutorial together in Sri Lanka. The EHA-SLCH Hematology Tutorial on Myeloid Malignancies and MDS focused on further advancing the knowledge on myeloid malignancies and myelodysplastic syndromes and teach novel approaches on the treatment of these topics. More than a hundred people attended, mainly from Sri Lanka, India and Nepal.



"Wonderful academic experience.
The content was very good. The presence
of participants from outside Sri Lanka
was very encouraging"

- I. Dharmasena (faculty) -

EHA-KCS Hematology Tutorial on Lymphoma and Multiple Myeloma

March 14-16 | Almaty, Kazakhstan

Chairs: G. Gaidano, D. Kaidarova, S. Gabbasova, Z. Dushimova

This first collaboration between EHA, the Kazakhstan Cancer Society (KCS) and the Kazakh Institute of Oncology and Radiology (KazIOR) resulted in a successful gathering of participants from eleven different countries. The program consisted of contributions from both European and local speakers.

"I think that all reports were extremely useful for our colleagues.

We already started working on implementing some ideas which came to us during presentations and clinical case reviews"

- Z. Dushimova (chair) -

EHA-TSH Hematology Tutorial on Lymphoma

April 6-7 | Izmir, Turkey

Chairs: A. Hagenbeek, H. Özsan

This was already the 8th annual joint tutorial for these two societies, aimed at Turkish fellows participating in the TSH Program, the 'Turkish School of Hematology'.

31 fellows from nine different cities in Turkey participated in this program. The workshop-like atmosphere of this meeting is very conducive to interaction between faculty and delegates.

"The meeting was very educational, I call myself lucky for being part of it. I hope that EHA&TSH tutorials will continue"

- Anonymous -



EHA-ROHS-NHS Hematology Tutorial on Real World Challenges and Opportunities in Diagnostics and Management of Oncohematological Patients Today

April 12-13 | Moscow, Russia

Chairs: P. Sonneveld, I. Poddubnaya, E. Parovichnikova

Almost 230 delegates attended this 3rd joint tutorial. They came mainly from Russia, but also from thirteen other countries. The attendees experienced interesting learning moments, especially the younger people in the audience. Although professor Sonneveld couldn't be present in person, he provided a recorded welcome message and a filmed lecture.



"This experience will be extremely useful in my practice. I think the audience received a lot of useful information"

- V. Ptushkin (faculty) -

EHA-AHA Hematology Tutorial on Lymphoid Malignancies

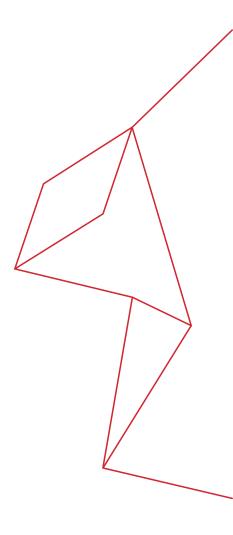
October 18-19 | Yerevan, Armenia

Chairs: G. Gaidano, Y. Hakobyan, S. Danielyan

For the 3rd time already this kind of meeting was brought to Yerevan, Armenia. Covering both clinical and biological aspects, some fifty delegates from nine different countries had the opportunity to attend the international educational meeting. EHA provided ten travel grants to participants from neighboring countries, seven of which came from Georgia, Iran and Russia.

"Thank you very much for your positive response. It was a great honor to be the part of that wonderful event"

- L. Harutyunyan (faculty) -





HIGHLIGHTS OF PAST EHA (HOPE)

Highlights of Past EHA – Asia

August 23-25 | Kolkata, India

The first edition of the Highlights of Past EHA (HOPE) in Asia was held in Kolkata, India. It was a great success. The meeting was organized in collaboration with the Indian Society of Haematology and Blood Transfusion (ISHBT) and hosted by the Eastern Haematology Group (EHG). The program was based on the scientific program of the 24th Congress of EHA, in collaboration with input from the partner societies.

The meeting was attended by over six hundred participants from India, Nepal, Bangladesh, Pakistan, the Philippines, Malaysia and Myanmar. The attendees gave the meeting an 8.3 overall rating out of 10 and said they would attend a follow-up meeting.

The meeting was also supported by several societies from the region, which officially partnered with EHA and the organizers; Haematology Society of Bangladesh, Pakistan Society of Hematology, Philippines Society of Hematology and Blood Transfusion, Sri Lanka College of Haematologists and the Thai Society of Hematology.



"As EHA we have a long history of connections not only with the Indian society, but also with all other regional societies. This was a chance to meet, discuss and connect. Our mission at EHA is to cure all blood disorders. This is done by connecting hematologists worldwide, helping hematologists, by advocating hematology and promoting education and research"

- Shai Izraeli, Board Member -



Highlights of Past EHA – Middle East & North Africa (MENA)

September 12-14 | Cairo, Egypt



The program of the 4th edition of this HOPE MENA covered a wide variety of topics presented during the $24^{\rm th}$ EHA Congress. The selection was based on local input. The meeting was attended by more than two hundred participants. New regional partners such as Tunisia brought large numbers of delegates to the meeting.

Besides the regular sessions, a regional symposium on Hemoglobinopathies was organized with regional speakers. Oral and poster presentations were also included in the program to give local researchers the chance to present and discuss their work. More than eighty abstracts were accepted.

Around thirty scholarships were awarded to delegates from Egypt and neighboring countries. Through the scholarship program, young hematologists get the opportunity to meet international experts and hear the latest updates in hematology.

Highlights of Past EHA – Latin America (LA)

October 4-5 | Mendoza, Argentina

The 1st edition of the Highlights of Past EHA (HOPE) meeting in Latin America (LA) concluded the biennial congress of the Sociedad Argentina de Hematología (SAH), HOPE LA's main partner this year. This meeting was supported by various regional partners, who took an active part in the meeting by sending delegates, chairing sessions and providing speakers for the regional symposium. The two day program was attended by over a thousand delegates and was a success in other aspects as well. Most attendees came from Argentina, but there were also representatives from Uruguay, Chile, Peru, Paraguay, Brazil, Colombia and other Latin American countries. EHA awarded a total of sixteen travel grants to attendees from Argentina and neighboring countries.

"It was wonderful to chat to other attendees of the conference. This happened particularly after the presentations and went on for the rest of the evening. I got to know some faculty members too. I think I'm not just speaking for myself when I say that I came away with new friends and connections"

- Jyoti Nangalia (faculty) -



EHA SCIENTIFIC WORKING GROUPS AND MEETINGS



EHA partners with Scientific Working Groups (SWGs) to foster science and spread knowledge on basic, translational and clinical hematology research in Europe. Currently there are 24 SWGs, covering both disease-oriented and overarching topics.

The EHA-SWG activities include scientific meetings, guideline production, SWG sessions at the EHA annual congress, SWG involvement in identifying experts for regulatory and lobbying needs, and connection with EHA training programs and Young EHA. EHA is committed to promote all of these activities, for instance through posts on the EHA website and social media, reports or HemaSphere publications.

EHA-SWG Scientific Meeting on Granulocytes and Constitutional Marrow Failure Syndromes

October 10-12 | Prague, Czech Republic

Chairs: C. Dufour, C. Mecucci, H. Papadaki and K. de Keersmaecker

The second scientific meeting on EHA-SWG Scientific Meeting on Granulocytes and Constitutional Marrow Failure Disorders and Leukemia Predisposing Genes was held on October 10-12, 2019 in Prague, Czech Republic.





The main objective was to bring the participants up to date on the latest achievements in the pathogenesis of several hematological diseases. These were granulocyte disorders, constitutional marrow failure syndromes (CMFS), Gaucher disease and leukemia predisposition genes. Also, attendees were informed about the tools to identify and appropriately manage patients. Information on the as the latest treatment insights was included as well.

"The meeting was well organized and the faculty was very friendly and accommodating. The topics were very targeted and for a specific audience"

- Panagiota Kanellou (Greece) -

Discussions focused on progress regarding novel aspects in chronic neutropenia, recent developments in the pathogenesis of 'classic CMFS' like ribosome and telomere disorders and Fanconi Anemia. The discussions were held in the plenary meeting. Special attention was devoted to Gaucher disease, the novel area of leukemia predisposition genes and how to identify and manage patients with these features. Several other topics were addressed as well: the correct timing and indications of stem cell transplantation in congenital neutropenias and CMFS, and the role of precision medicine in these diseases.

The meeting was attended by eighty participants from a wide variety of European and non-European countries. After the meeting, a survey was sent to the participants. The respondents awarded the meeting with an overall rating of 8.2 out of 10.

EHA-SWG Scientific Meeting on Red Cell and Iron Metabolism Defects: From basic science to clinical case application

November 7-9 | Madrid, Spain

Chair: A. Iolascon, C. Camaschella, M.D. Cappellini, M. Muckenthaler, P. Aguilar Martinez In collaboration with: EHA Scientific Working Group on Red Cell and Iron Metabolism



For the second time the EHA and the EHA Scientific Working Group on Red Cell and Iron joined in the organization of the meeting. The Topics-in-Focus (TIF) program on hemoglobinopathies was launched by the EHA Board at EHA23 in Stockholm, Sweden. In line with this, the program focused on the study of red cell and iron biology in relation to the erythropoietic differentiation process. Clinical cases were constructed for the different conditions. The emphasis was placed on thalassemia, sickle cell disease, diserythropoietic anemias, red cell enzyme defects, atypical microcytic anemias, hereditary hemochromatosis, iron metabolism, and paroxysmal nocturnal hemoglobinuria.

The meeting was well attended. More than 140 participants from a wide variety of European countries and from countries such as Qatar, Kenia, Thailand and India traveled to Madrid. After the meeting a survey was sent to the participants. The respondents gave an overall rating of 9.3 out of 10 to the meeting.



EHA-SWG Scientific Meeting on Systemic Risk of Thrombosis or Bleeding

November 22-24 | Madrid, Spain

Chair: A. Falanga, C. Balduini

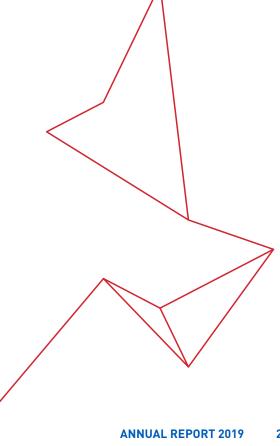


This meeting was organized in collaboration with the EHA Scientific Working Group on Bleeding and Thrombosis and the EHA Scientific Working Group on Thrombocytopenia and platelet function disorders. The meeting was well attended by more than a hundred participants coming from more than twenty different countries.

"Great meeting. The faculty did an outstanding job of putting together a very interesting program that is 100% clinically relevant - which is rare for meetings. Also, the speakers were of very high caliber and with the smaller format of the meeting it is very easy to approach and chat to some key opinion leaders, which is quite unique"

- anonymous delegate -

Over the course of three days, a mixture of lectures, interactive sessions, round tables and debates provided attendees with further knowledge on venous thromboembolism, gender-related hemostatic disorders, bleeding risk of anticoagulation and management of bleeding risk in patients with platelet defects, among other themes. Respondents of a post-meeting survey gave an overall rating of 7,9 out of 10.





SUPPORTING CAREER DEVELOPMENT AND RESEARCH



EHA strives to accelerate the career of promising researchers in hematology. It does that through funding of laboratory based research of talented junior researchers with EHA Research Grants. EHA also supports their mobility through EHA Research Mobility Grants or the EHA-JSH Collaborative Exchange Program.

Research Mobility Grants

EHA strives to further the careers of young scientists by facilitating a stay at a research group at another institute with complementary expertise. It intends to promote collaboration between the institutes. These grants have a low application threshold and a quick review and selection process.

The call is open throughout the year. The Fellowships & Grants committee had the following winners awarded at EHA24: Julius Lukes Jr., Alvaro Sanchez and Barbara Kiesewetter-Wiederkehr.

It is expected that demand for this grant will increase exponentially with increased promotion. The committee therefor submitted a proposal to increase funding for these grants to 80,000 euros per year in 2020.

The EHA-JSH Collaborative Exchange Program

There was one Japanese awardee in 2019, Hiroshi Arima from the Department of Hematology and Oncology Graduate School of Medicine, Kyoto University, Kyoto, Japan. He was hosted by Professor Stefano Casola at the Institute of Molecular Oncology Foundation, Milan, Italy. The EHA was not financially involved, as Japanese winners are fully funded by the Japanese Association. EHA helped with the review, though.

Research Grants 2019 program

Winners selected for the Research Grants and awarded during EHA24:

Advanced Research Grants



Raffaella Di Micco

Topic: Dissecting Cell-autonomous and Paracrine Functions of Cell Senescence in AML Response to Therapy **Institute:** San Raffaele Hospital, IRCCS, Milan, Italy



Renée Beekman

Topic: Occurrence of Sporadic Oncogene Activation in Normal B Cells and its Implications for Lymphomagenesis Institute: Institut d'investigacions

Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain

Junior Research Grants



Annamaria Aprile

Topic: Bone Marrow Microenvironment in Beta-thalassemia: Unraveling the Role of Megakaryocytes on Hematopoietic Stem Cell Function **Institute:** San Raffaele Hospital, IRCCS, Milan, Italy



Antoniana Batsivari

Topic: Deconvoluting the Spatiotemporal Crosstalk between AML Clones HSCs and BM Niche **Institute:** Francis Crick Institute, London, United Kingdom

Physician Scientist Research Grant



Orna Steinberg Shemer

Topic: Elucidating the Pathophysiology of Severe Congenital Neutropenia and the Pathways Involved in Malignant Transformation

Institute: Schneider Children's Medical Center of Israel, Petach Tikvah, Israel



Research Grants 2020 program

For the 2020 round, 78 eligible applications have been submitted for the regular EHA Research Grants and the new Topic-in-Focus grants.

For physician Scientist Research Grants 15 applications were submitted, for Advanced Research Grants 25 applications came in, 23 for Junior Research Grants and 15 for Topic-in-Focus Research Grants.

The Fellowships & Grants committee will review these applications meticulously. They will carry out a preliminary review, after which successful applications will be submitted for an additional external review. Winners will be announced at the beginning of June 2020, after the interview meeting in May 2020.



EHA's Fellowships & Grants Committee. Left to right: Meritxell Alberich Jorda (Czech Republic), Thomas Mercher (France), Brian Huntly (UK), Iñaki Martin-Subero (Spain), Nica Capellini (Italy) Pieter van Vlierberghe (Belgium), Sabine Eichinger (chair, Austria), Kostas Stamatopoulos (Greece), Maria Ester Bernardo (Italy)

MENTORING PROGRAMS

Translational Research Training in Hematology (TRTH)

Translational Research Training in Hematology (TRTH) provides junior researchers with a one year training and mentoring experience. TRTH is a joint effort of the European Hematology Association (EHA) and the American Society of Hematology (ASH). It is focused on helping hematological scientists early on in their career to make successful steps in hematological translational research.



The TRTH 10th anniversary celebrations kicked off with the recording of new promotional films at the Spring Course in March, continued with a session

during the EHA congress in Amsterdam and concluded with a symposium featuring TRTH alumni during the ASH Annual Meeting in Orlando.

The 10th edition of the Spring Course took place in March in Milan, with twenty scholars being mentored by fifteen faculty members, including two statisticians and a bioinformatician.

The 2019 co-directors together with TRTH staff developed a new, more appropriate evaluation for the course. This was applied during the Spring Course. The class of 2019 also met during the EHA congress at the ASH Annual Meeting.

Clinical Research Training in Hematology (CRTH)

Through CRTH, EHA provides junior researchers with a nine months training and mentoring experience. It is focused on clinical research in Europe, combined with a global scope.

After its first three years, the program is currently in transition. It evolves from a didactical program with increasing interactivity over the course year to a program that is interactive from the start.

2018-2019 Program

The class of 2018-2019 successfully graduated during EHA24. The alumni have all been approached by the EHA staff for possible volunteer work at EMA as a reviewer.

2019-2020 Program

A record breaking 59 eligible applications for CRTH came in. Moreover, the reviewers noted that many of these were of high quality.



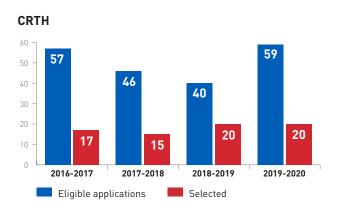


Figure: Record breaking eligible applications for CRTH

The program had eleven female and nine male participants. The names of the winners can be found here. This cohort was geographically diverse as it included participants from Mexico, Brazil, China, Azerbaijan, Poland and Armenia.

The 4th edition of CRTH started with a workshop near Marseille. The twenty scholars came to the workshop with their own clinical challenges they wished to address in a clinical trial. Course directors Sonja Zweegman and Maria Ester Bernardo were supported by incoming course directors Carol Moreno and Adele Fielding. Under their quidance and the dedicated faculty the scholars and their research projects underwent quite some changes. When asked in a survey, nineteen out of twenty responded. The results were as follows.

How would you rate the change in your project? 19 responses

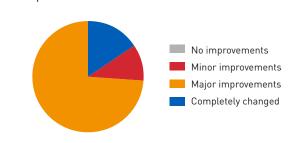
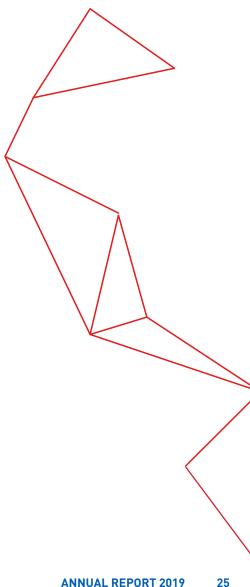


Figure: Record breaking eligible applications for CRTH

The program itself has also changed since its first edition. There is an on-line statistics course that scholars are required to take prior to the workshop. During this year's first workshop in November, statisticians Jan Bogaerts of EORTC, Ron van der Holt of HOVON and Robert Hills of the University of Oxford) worked wonderfully together with the scholars.



SUPPORTING CAREER DEVELOPMENT AND RESEARCH



Below are some comments by the scholars regarding the first workshop:

"Very well-organized research training course"

"Thank you so much"

"Excellent course.
I feel like I have
learnt a lot. Such a
great start!"

"Thank you all for your major effort in making this such a wonderful experience!"

"I find the meeting really good.

I think having the opportunity to
discuss my project in an open way
and to receive constructive
feedback is really good. I feel
really motivated."

The CRTH scholars, faculty and EHA staff

"I think it would be good to clarify that the project should not be already ongoing. I noticed some of the scholars

had completely undeveloped projects while others where already working on them for some time at their institutions. Maybe this was not completely clear in the application form."

[&]quot;Thank you for this awesome training!"

[&]quot;I loved the training!"

[&]quot;Thank you for such a valuable opportunity. I have spent fascinating days. I love you all."



HEMASPHERE



EHA's official open access journal, HemaSphere, publishes results of highly relevant basic, translational, and clinical research in hematology. HemaSphere also serves as a premier hematology information resource by way of the HemaTopics section. It covers hot topics such as recent research

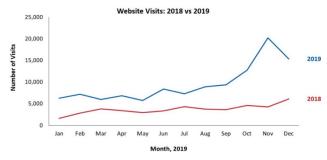
developments, updates on diagnosis and treatment, policy and guidelines news, and more. *HemaSphere* offers a fast and constructive review process and low article processing fees. It officially releases six issues per year, but due to the journal's online nature, *HemaSphere* actually publishes a steady flow of new content.

Milestones reached

- PubMed Indexing HemaSphere was fully indexed in PubMed Central (PMC) in November, 2019. With PMC indexing complete, the journal anticipates an impact factor in approximately two years. It is of utmost importance that in the meantime the journal's articles are cited as often and as widely as possible.
- CAR T-Cell Special Collection in 2019, HemaSphere hosted a special collection dedicated to CAR T-cell therapy. This collection is accessible via a dedicated portal on the journal's website.



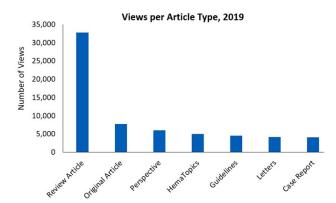
- Biosimilars in Hematology in the December 2019 issue, HemaSphere kicked-off a biosimilars series, which is now accessible via a portal from the website. This series is ongoing.
- Website Visits during 2019, the journal's website hosted a higher number of overall visits compared to 2018. The journal plans to launch a modernized web page in 2020.

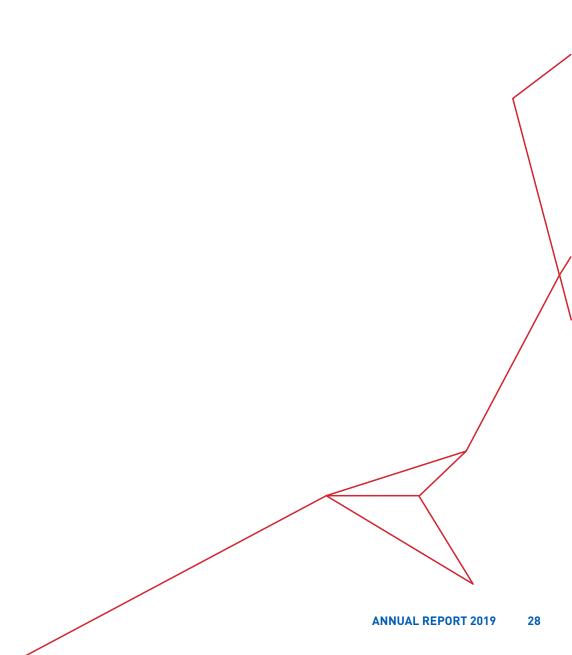






- **Top Reads** during 2019, the journal's individual article reads increased as compared to 2018. The top read article in 2019 had 25% more reads than the top read article in 2018. The second top read article even had an increase of over 200%.
- Views per Article Type during 2019, 80% of readers chose to read the HTML version of any given article. Review articles were the most viewed article type.







LOBBYING FOR HEMATOLOGY



'Representing Hematology and Hematologists in Europe'

AWARENESS, ADVOCACY AND STAKEHOLDER RELATIONS

EHA serves as the voice of hematologists in Europe. It works to raise awareness of their contribution to healthcare and health research and to promote their specific needs and interests. In order to be an effective advocate for hematology professionals and their patients, EHA interacts and collaborates with all key stakeholders, taking an integrated approach to policy, regulatory and scientific relations.

Advocacy priorities

EHA's policy and lobby activities are based on three overarching advocacy priorities:

- Support for hematology research (increased funding, improved governance);
- Access to affordable diagnostics and treatment for patients with blood disorders;
- An optimized **regulatory** framework in line with the needs of hematology and hematologists.

Stakeholder relations

At the basis of EHA's policy and advocacy work is pro-active and sustained engagement and alignment with patient organizations, nurses, EU institutions, industry partners and national hematology societies. Active participation in alliances and EU-funded projects is an integral part of our stakeholder strategy.



Highlights 2019 Policy & regulatory

Bureaucracy in clinical trials

EHA decided to throw its weight behind an emerging dialogue on the topic of bureaucracy in clinical trials between a group of prominent clinical hematologists and the European Medicines Agency (EMA). EHA hosted a multi-stakeholder round table in June and kept up engagement with both EMA and the European Commission (EC) afterwards. It contributed substantially to public consultations on the revision of ICH guideline E8 (General Considerations for Clinical Trials). Also, EHA provided detailed feedback on a Clinical Trials Regulation guidance document drafted by the EC. With this, the groundwork had been laid for the next step. This is the development of a 'road map towards patient-centered, bureaucracylight clinical research'. This will be carried out together with medical societies and patient organizations across disciplines and in close dialogue with industry, policymakers and regulators.

Several main challenges have been identified. These are excessive reporting requirements resulting from regulatory over-interpretation, the complexity of informed consent forms and the need to re-balance the roles of commercial and academic stakeholders. The ultimate goal is to reduce the administrative burden, in order to safeguard the quality and affordability of trials, the survival of academic clinical research and, ultimately, patient safety.

In Vitro Diagnostics Regulation (IVDR) and precision diagnostics

Since late 2018, EHA has engaged with the European Commission and the National Competent Authorities on the implementation of the In Vitro Diagnostics Regulation (IVDR, applicable as of May 2022). Input is coordinated by the EHA Task Force on IVD and wherever possible aligned with the BioMed Alliance IVDR working group. The latter is led by EHA President-elect Elizabeth Macintyre.

As a keynote speaker at the annual congress of the European Alliance for Personalised Medicine (EAPM) professor Macintyre stressed the importance of access to high-quality, affordable precision diagnostics for realizing truly personalized medicine. She specifically addressed challenges related to the implementation of the IVDR, the rationalization of reimbursement decisions and the storage and handling of diagnostic data.

Health Technology Assessment (HTA)

In the debate about collaborative, harmonized HTA at the European level, EHA positioned itself as a key stakeholder. It co-led the drafting of a <u>statement</u> for the Finnish EU Council presidency, which received collective BioMed Alliance endorsement. The statement supports the European Commission's HTA Proposal and stresses the need for clinicians' and patients' involvement in the debate.

Horizon Europe

Planning for the new EU multi-annual research and innovation funding framework Horizon Europe began in earnest during 2019. EHA responded to the public consultation on the general strategic priorities, stressing the importance of several themes. These are, among other things, patient centered and personalized medicine, uptake of innovation, balanced support for basic, clinical and translational research, and the sustainability and good governance of EU-funded public-private projects. EHA also actively contributed to the BioMed Alliance lobbying efforts, which emphasizes the need for better governance structures and increased support for translational research.



Topics in Focus

Recommendations
for policymakers and
regulators with regard
to immunotherapies and
hemoglobinopathies
were conveyed on a
number of occasions.
Most prominently, EHA
hosted sessions dedicated
to CART therapy and

Sickle Cell Disease – prime examples of hematology's contribution to personalizing treatment and prevention – at the high-profile EAPM Presidency Conference in Brussels on April 9. Emphasis was laid on the need for EU collaboration and funding to boost the uptake of CAR T-cell therapies and to create tools for the EU-wide screening and tracking of SCD patients.



The EHA-Patient Joint Policy <u>Symposium</u> at EHA24 featured a session on CAR-T. One of the panelists was European Commission cancer expert Jan van de Loo, who addressed the challenge of making immunotherapies affordable and equally accessible to all.

Biosimilars

In December, two articles were published on biosimilars in hematology: an EHA <u>editorial</u> by Professors John Gribben, Giampaolo Merlini and Ton Hagenbeek and an <u>overview article</u> with rituximab biosimilars as case by Professor Arnold Vulto. They kick off a *HemaSphere* series on biosimilars, which will feature the perspectives of other stakeholders, from patients and manufacturers to hospitals and regulators. The series is an initiative of the EHA Task Force on Fair Pricing, which highlights the cost-saving, access-boosting potential of biosimilars.

Scientific collaborations

Scientific advice

EHA contributes to the quality of policy and regulatory processes. It does so by providing expert input on policies, funding programs, investigations, regulatory assessments and the implementation or evaluation of legislation. Simultaneously, it sees to it that the interests of the hematology community are taken into account in the design and implementation of policies and regulations.

In 2019, EHA identified and nominated expert evaluators on the authorization of new drugs at EMA, the joint clinical assessments by national HTA agencies (EUnetHTA) and the antitrust inquiry of the European Commission. EHA also provides expert advice on the implementation of EU regulations for in-vitro diagnostics and clinical trials on a structural basis. Moreover, it supported the nomination of former EHA president professor Christine Chomienne to the Horizon Europe Mission Board on Cancer.

EuNet-INNOCHRON

The European Network for Innovative Diagnosis and treatment of Chronic Neutropenias (EuNet-INNOCHRON) was formally established in November 2019. It involves a new European Cooperation in Science and Technology (COST) Action ans was co-proposed and supported by EHA. EU COST funding supports the bottom-up creation of research networks.

The main goal of the Action is to establish a wide network of researchers with special interest in Chronic Neutropenias. It also aims at facilitating interactions and collaborations among top-level European experts and young investigators from different scientific areas. EHA hosted a pre-launch gathering of initiators and coordinators. It also provides ongoing dissemination support and agreed to explore collaboration in the development of guidelines.

Stakeholder networks

EMA-HCPWP

Interaction with EMA has been intensified in areas such as scientific advice and clinical trials regulation. The Health Care Professionals Working Party (HCPWP) is an important platform for discussion and collaboration with EMA. EHA representative professor Ulrich Jäger helped drafting the joint work plan of the HCP and patient working parties. He was subsequently elected as HCPWP co-chair for the 2019-2022 mandate.

Relevant topics on the agenda include big data and data sharing, medicine shortages, authorization of innovative therapies and orphan medicines, Regulatory Science and health care professionals training. The latter two are part of efforts to promote structural and timely exchange of information between the regulator on one side and health care professionals and patients on the other side. The regulator needs the latest insights to keep up with medical and technological innovation, whereas health care professionals and patients need to understand the regulatory processes in order to be effectively involved.



Structural collaboration with key stakeholders in hematology

Structural and substantial involvement of patients in EHA activities continues to be a priority. Significant progress has been made on this issue. This ranges from joint advocacy and participation in EU-funded projects to involvement in the development of guidelines and specific educational programs. Patients were also involved in updating the Research Road map. Collaboration with the patient organizations is driven by the European Affairs Committee. In this committee the EHA Patient Organization Work group is represented by a member, with a second one joining in 2020The EHA PO Work group represents fourteen European umbrella groups.

Collaboration with specialist nurses is also expanding. EHA provides advice to the Haematology Nurses and Health Care Professionals Group (HNHCP) on the development of e-learning programs. It also ensures a front-line role for HNHCP in the annual EHA-EBMT CAR T-cell meeting.

A lively and productive dinner with National Society presidents at EHA24 gave a fresh boost to cooperation with national hematology associations. The central discussion was on linking YoungEHA with national networks for young hematologists.



John Gribben and Elizabeth Macintyre hosted a spirited National Societies Dinner in Amsterdam.

Awareness

24th EHA Congress

The day-long **EHA-Patient Joint Policy Symposium** at EHA24 replaced the former 'advocacy track'. The policy symposium was an expression of the growing weight of collaboration in policy and regulatory issues with the patient organizations and other stakeholders. The common question underlying the five sessions was how to deliver innovative treatments that are accessible, affordable and of real added value to patients.

Clinicians, patients, nurses, industry, academics and regulators all presented their views on this topic. The increasing importance of collaboration with patient organizations and partners in EU-level projects, alliances and networks was also on clear display at the first 'Collaboration Plaza'. this was located prominently between the EHA Booth and the Exhibition Area.

Communication

It is EHA's intention to increase awareness of policy and regulatory issues that impact hematology. It also would like to underline EHA's advocacy work and collaborations on these issues. Therefore the HemAffairs newsletter was piloted. Furthermore, a number of HemaSphere editorials and articles was published or initiated on this topic. Development of HemaSphere publications on policy, advocacy and regulatory topics, by EHA as well as stakeholders, is actively encouraged.



HARMONY ALLIANCE



For the HARMONY Alliance, the public-private European Network of Excellence on Big Data in Hematology, 2019 was an extremely successful year. The HARMONY Alliance has identified over 45,000 data sets of people with blood cancer. It is one of the largest databases of its kind. HARMONY researchers have derived important evidence from the Big Data Platform. This moves us closer to the goal of improving and accelerating treatment for patients with blood cancer.

Big Data on blood cancers requires gathering clinical, genetic and molecular information on patients and diseases into a single database. These data stem from clinical trials and registries from different countries. The HARMONY Alliance is orchestrating the consolidation of all these databases onto one common platform. This will harness the enormous potential of Big Data and Big Data analytics to deliver insights into how patient care for patients with blood cancers can be improved.

HARMONY Alliance reached the following key milestones in 2019:

- 45,000 data sets identified; Seven blood cancer research projects up and running in Acute Lymphoblastic Leukemia (ALL), Acute Myeloid Leukemia (AML), Chronic Lymphocytic Leukemia (CLL), Multiple Myeloma (MM), Myelodysplastic Syndromes (MDS), Non-Hodgkin's Lymphoma (NHL) and Pediatric Hematologic Malignancies;
- Five full manuscripts in scientific journals to date;
- Eleven scientific research posters developed to date;
- Three scientific research awards received:
- Two newly approved research projects;
- Twelve conferences attended;
- Four dedicated sessions organized;
- Successful collaborations between Partners, Patient Cluster and Association Members:
- Ninety organizations involved, leading up to three hundred HARMONY ambassadors in our community.

HARMONY currently comprises 53 Partners, 41 Associated Members and 7 patient organizations. All of these have contributed significantly to HARMONY's success at achieving its goals so far. HARMONY brings together stakeholders from a broad spectrum of disciplines. These include academic institutions, national clinical disease networks, patient advocacy groups, hospitals, regulatory agencies, health technology assessment bodies, technology specialists and pharmaceutical companies.

EHA is one of the 53 HARMONY Partners and is leading the Work Package on Communication, Dissemination & Training. EHA is also participating in other Work Packages and in the HARMONY Steering Committee.



MAINTAINING RELATIONSHIPS AND PHILANTROPY



SPONSORING 2019

The pharmaceutical industry supported EHA in 2019. This allowed us to step up our efforts to represent the hematology care in Europe and beyond. EHA sponsors benefit from establishing new business relations in the field. Mutual trust and collaborative efforts are the bases

to achieve the best results for both parties.

EHA believes that rigorous and continuous cooperation at all levels is key to the development and dissemination of hematology research and education. With that purpose, EHA offered a variety of sponsorship opportunities to welcome both large and small companies and start-ups to support its activities.

EHA is grateful to its partners for their continuous support and commitment and is looking forward to further strengthen and expand relationships by providing meaningful and innovative support opportunities both for its existing programs and new programs.

EHA FRIENDS' FUND

In 2016 EHA created the <u>EHA Friends' Fund</u> fund to support research and education in hematology, especially for junior hematologists. In 2019 the fund continued to take major steps forward and engaged with many EHA Friends. This happened notably during the EHA Congress in Amsterdam, but also during other events. A large part of the funds raised this year was dedicated to supporting junior hematologists to attend the EHA Congress and meetings.







EHA is a Common Good Organization under Dutch law. Any profits generated from its congress are invested in other activities that serve the hematology community. The board and committee members contribute to the association's work on a voluntary basis. Expenses for meetings are reimbursed. The EHA Executive Office has its own employment arrangements. The employees in the Executive Office function according to their respective job profiles, which are linked to the remuneration policy. The statements below reflect the core financial figures of EHA for the year 2019. The figures are derived from the full financial statements of EHA.

Balance sheet as of December 31, 2019 (in €)

	2019	2018
ASSETS		
Fixed assets	271,302	321,982
Current Assets	19,866,500	18,227,451
Total Assets	20,137,802	18,549,433
Total Assets	20,137,002	10,047,400
LIABILITIES		
Equity	16,297,631	12,846,380
Current liabilities	3,840,171	5,702,053
Total liabilities	20,137,802	18,549,433



State of income and expenses 2019 (in €)

	2019	Budget	2018
INCOME	15,459,335	13,106,000	13,746,729
EXPENSES			
Annual congress	6,360,277	5,546,000	5,732,934
Research & Mentoring	1,349,308	1,650,000	1,633,247
Education & Training	1,162,560	865,000	530,190
Harmony project	(21,419)	-	(24,686)
Direct Operations	127,573	175,000	88,144
Indirect operations*	3,011,236	2,741,000	2,645,105
Total expenses	11,989,535	11,077,000	10,604,933
OPERATIONAL RESULT	3,469,800	2,029,000	3,141,796
Financial income & expenses	(18,549)	-	42,876
Result	3,451,251	2,029,000	3,184,672

^{*} Including staff costs



Preliminary budget 2020

Work Plan and Budget 2020

EHA's Committees and Working Groups provided input based on EHA's strategy for the 2020 Work Plan & Budget. Input was provided at two levels. Firstly, on ongoing projects and their proposed direction in 2019. Secondly, motivated input on new initiatives within existing programs.

The budget for 2020 includes a large investment plan to further increase the activities in the field of Education and Research & Mentoring. In addition, investments will be made to adapt the internal organization to the increased activity level. As the details for the investment plan for 2020 were still under development, the budget 2020 could only receive preliminary approval by the board.

The COVID-19 outbreak will have financial impact on many aspects. Therefore, final approval of the 2020 budget was put on hold. In the meantime, the preliminary budget excluding investments will be leading for the daily operations.

2020	
14,446,000	

EXPENSES

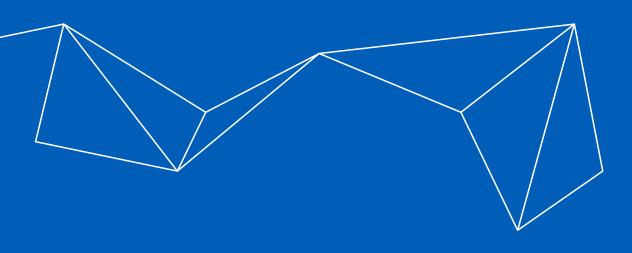
INCOME

Total expenses	13,856,000
Indirect operations*	3,137,000
Direct Operations	240,000
Harmony project	-
Education & Training	1,598,000
Research & Mentoring	2,705,000
Annual congress	6,176,000

OPERATIONAL RESULT	590,000
Financial income & expenses	-
Result	590,000

^{*} Including staff costs





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