



Newsletter

of the *European Society for Artificial Organs*

Letter from the president

ESAO Newsletter
January 2017

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Sunny Eloot

Dear Members of European Society for Artificial Organs,

I take the opportunity to wish you all a Happy and Healthy 2017. It is my pleasure to present the third issue of our newsletter to you, which was edited by our Secretary General Sunny Eloot.

We had a **successful 2016** with an increased number of members, new people from different European countries. We also had a very interesting congress, organised by the Congress President Piotr Ladyzynski and his team, and with great support from the Nalecz Institute of Biocybernetics, Warsaw. The congress was a great scientific success with a large number of special symposia and very good attendance. You will find some more information on page 4 of this newsletter.

Last autumn, we also had elections for vacancies in the **Board of Governors**. With the election of Viktoria Weber from Krems (Austria) and Gloria Gallego-Ferrer from Valenica (Spain), we also increased the number of female board governors (BG). In addition, Bengt Lindholm, who finished his first term as governor, was re-elected for a second term; also our treasurer Ulrich Kertzsch, who did already an excellent job during his first term, was re-elected for the next 4 years.

The **new website** went online with the opening of our congress in Warsaw in September 2016. I hope you will find information more easily and appreciate the continuous update of the website. We also included more information about yESAO, with as hot topic now the current call for the yESAO Exchange Award.

The website can also be used as a platform for you to share important news with other ESAO members. Please, use our office in Krems (with Anita Aichinger as Secretary and Viktoria Weber as ESAO Officer) as hub to spread your information via the ESAO website and/or by our email list.

In addition, we use the LinkedIN page of ESAO and yESAO to disseminate to our members and other stakeholders important news about ESAO and announcements of congresses.

Last but not least it is my pleasure to inform you that the website of the next joint congress of the ESAO and the International Federation of Artificial Organs (IFAO) <http://esao2017.org/> is online. The **44th Congress of ESAO** will take place from **September 6-9, 2017 in Vienna**. Submission of abstracts and proposals for symposia will be opened in a couple of days. I hope that many of you will submit contributions to make the joint congress with strong participation from our sister societies in the US and Japan a real success.

With warm regards

Thomas Groth, President



Update on the ESAO Board of Governors

During the Gala Dinner in the 'Central Agricultural Library Hall' in Warsaw (September 16th, 2016) our President of the Society Thomas Groth extensively thanked the **governors leaving the Board:**

Ashraf Khir (UK) was member of the ESAO Board of Governors from 2010 until 2016. He did an outstanding job as member and chair of the PhD Award Committee, and as Head of the Poster Award Committee during numerous ESAO Congresses.

Giuseppe Faggian (Italy) was also member of the Board from 2010 until 2016, and performed outstanding efforts to organise the ESAO Winter School in Catania.

At the same occasion, Viktoria Weber and Gloria Gallego-Ferrer were welcomed as Board Governors and Alessandra Molteni and Marc Mueller as the new chairs of the yESAO.

Viktoria Weber (Austria) is Professor for Biochemistry at Danube University Krems, where she is also Head of the Center for Biomedical Technology. She graduated in Biotechnology in 1990 and obtained her doctoral degree in the field of glycobiology from the University of Natural Resources and Applied Life Sciences in Vienna, Austria, in 1994. After a post-doctoral training at the Medical University of Vienna, she joined the group of Prof Falkenhagen at Danube University Krems and became involved in the field of extracorporeal blood purification, with a focus on adsorbent-based technologies and blood compatible materials. She obtained her habilitation for Biochemistry from the University of Natural Resources and Applied Life Sciences in Vienna, Austria in 2007 and was appointed as Professor for Biochemistry at Danube University Krems in 2010. Since 2010, she is Vice Rector for Research at Danube University Krems, and since 2013, she is Head of the Christian Doppler Laboratory for Innovative Therapy Approaches in Sepsis.



"As a board member of ESAO, I will engage in educational activities, in particular in the organisation of winter schools bringing together young and experienced scientists, clinicians, and industry, with the idea to support the translation of research into application. I will also try to initiate joint transnational project applications, such as Marie Curie Initial Training Networks in the field of Artificial Organs."



Gloria Gallego Ferrer (Spain) is Associate Professor at the Centre for Biomaterials and Tissue Engineering of the Polytechnic University of Valencia (UPV) (Spain) and senior researcher of the Biomedical Research National Networking Centre in Bioengineering, Biomaterials and Nanomedicine (CIBER-BBN) (Spain). She graduated in Industrial Engineering in 1997 and defended her PhD about the synthesis of Interpenetrated Polymer Networks of acrylic hydrogels for the coating of prosthesis at Polytechnic University of Valencia (Spain) in 2001. Since 2000 she is professor at UPV and has led multidisciplinary research projects for the development of new biomaterials and scaffolds for the tissue engineering of articular cartilage, bone, corneal tissue and dentin or for the sustained release of drugs, in collaboration with clinical groups. She was visiting Professor at University of Zagreb in Croatia (2004) and at the 3Bs Research Group of the Universidade de do Minho in Portugal (2009).

"My interests as board member of the ESAO are the promotion of the Society in Spain, where it is still not very well-known, the dynamisation of the relationships and collaborations between the corporate and academic members of the ESAO and the contribution in the educational activities of the Society."

New coordinators of yESAO

2016 was also the year that we had to express our gratitude to the two **former coordinators of the yESAO** Tom Verbelen (Belgium) and Simon Sonntag (Germany) who managed to increase the number of yESAO members and to organise two successful yESAO meetings! They are replaced by Alessandra Molteni (Italy) and Marc Mueller (Germany).



Alessandra Molteni (Italy) is working for Calon Cardio since 2013, a medical device company developing the next generation of ventricular assist devices. Within Calon, she is responsible for the design and development of the next heart pump technology, with particular focus on fluid-dynamics aspects. She is leading the computational fluid dynamic department and also involved in the clinical research process for the FDA and CE mark approval. She graduated in 2012 with a double Master degree program in Biomedical Engineering at Politecnico di Milano and Politecnico di Torino. She is also an Alumni of Alta Scuola Politecnica, for which in 2012 she pursued the Diploma in Management of Innovation. Since 2015, she is a mentor for the Alta Scuola Politecnica and coordinating the United Kingdom Hub. She has a strong passion for life support systems and particular interest for VADs in adult and paediatric heart disease.

Marc Mueller (Germany) is a research associate and PhD-student at the Institute for Multiphase Processes (Leibniz Universitaet Hannover) since 2011. His research focuses on processing, characterisation and testing of polymeric materials for medical applications (e.g. cardiovascular implants). Since 2014, he is leading the research group "Interfacial processes", which is working in the fields of surface characterisation, biodegradation, flow visualisation and biocompatibility testing. He graduated in 2011 with a Master degree in Biomedical Engineering at the Leibniz Universitaet Hannover. Since he started working at the Institute for Multiphase Processes, he is responsible for the Master program in Biomedical Engineering at the Leibniz Universitaet Hannover, taking care for admissions, student advisory service and development of curricula.



Their vision: We are truly honoured to be the new yESAO coordinators, and we will provide our full support to this lively society. We look forward to continuing Simon and Tom's work, and further building the partnership between yESAO and the Board. We do believe the yESAO society allows very passionate people to collaborate together towards innovation in the field of Artificial Organs, and together with the core members and the local organisers for the next conferences, we are ready and excited to further contribute this.

yESAO means to us innovation, cooperation and passion. We are aiming to tie together academic and industrial perspective into the yESAO society and develop a solid community producing innovation and solving problems together. We want to worldwide promote the young European Society for Artificial Organs and improve even further the benefit of belonging to the yESAO by:

- 1) developing a new webpage with detailed information on the yESAO initiatives;
- 2) establishing contacts with other young innovator societies and sharing experiences;
- 3) building a database with information of the yESAO members institutes for sharing skills, methods, ideas;
- 4) keeping the community lively around the year, through a new LinkedIn page, an improved Facebook page and Webinars, to share ideas on past and current projects, organise problem solving sessions, offer trainings, and post new positions and collaborations.

ESAO 2016 - Warsaw (Poland)



ESAO 2016 took place in Warsaw (Poland), was organised by Piotr Ladyzynski and co-workers, and has been attended by 365 participants. The meeting was characterised by a strong **scientific program** with 9 keynote and 4 plenary lectures, 82 invited lectures, and around 260 oral and poster presentations based on accepted abstracts. Beside the topic related sessions, 16 symposia were organised of which 2 were dedicated to Dieter Falkenhagen and Jan M. Wojcicki, 2 prominent ESAO members of the organisation, who passed away in recent years.



During the Opening Ceremony in the 'Warszawski Dom Technika NOT', Bente Thamsen (Berlin, Germany) and colleagues got the **ESAO-Wichtig Award** (certificate and check of 2.500€) for their work 'A two-stage rotary blood pump design with potentially lower blood trauma: a computational study'.

From the more than 270 submitted abstracts, the **innovation award 2016** of 500€ went to K. Matsuda (Yamanashi, Japan) for the work 'Challenge to the next stage of artificial kidney'.

Also the three best **posters** were awarded and the awards of 500, 300 and 200€ respectively went to:

1. Gianfranco Ferrari (Rome, Italy): 'Setting up a paediatric pneumatic VAD: a hybrid model study'
2. Paulina Trzaskowska (Warsaw, Poland): 'Electropolymerized polymer coatings for stainless steel and their features towards blood and tissues'
3. Anna Samluk (Warsaw, Poland): 'Genetically modified hepatoma cell line - C3A characterized by high ammonia tolerance as a source of cells for bioartificial liver support'



For the third year the PhD-committee rewarded young researchers who recently finalised their PhD and passed an important international track. This year, Timothée Baudequin (Compiègne, France) and Roland Graefe (Aachen, Germany) were certified and they got the opportunity to briefly present their PhD work in the special ESAO Annual Awards Session on Friday.

Beside the scientific part of the meeting, several social events were organised, such as the welcome reception in the 'Warszawski Dom Technika NOT' on Wednesday, the networking reception on Thursday, and the gala dinner in the 'Central Agricultural Library Hall' on Friday evening.



yESAO 2016 - Warsaw (Poland)

yESAO brings together young researchers driven by passion for Artificial Organs to produce innovation and advancement in the field. The young investigators are engineers, scientists, clinicians, and students coming from various worldwide institutes. To exchange ideas and experiences, our main meeting is once a year on 2 days preceding the ESAO conference, and it offers forefront discussions, inspiring talks and stimulating workshops on a wide spectrum of topics.

Last yESAO meeting, around 50 participants attended and contributed with stimulating presentations and fruitful discussions. The three keynote lectures analysed the crucial steps of technology transfer, with practical examples and a round table on met and unmet needs for rotary blood pumps. In addition, lab tours of the hosting Nalecz Institute of Biocybernetics and Biomedical Engineering were organised. On the closing day, the workshop "Working together in a multidisciplinary team" was held: firstly, an overview on product life cycle, and in particular on concept development, was provided, followed by practical activities. The participants were split into 3 groups, among which different key-roles were assigned: clinician, engineer, scientist, stakeholder, nurse, patient. A small case study on technology transfer was asked to be solved, providing a solution to reflect all the different perspectives which could appear within a multi-skilled team. For the yESAO meeting night, a typical Polish dinner with local music was organised in the heart of Warsaw city, followed by a beer in the fascinating Old Town Market square. Multiple other social events have been organised throughout the congress week, together with the ESAO members.



During the opening ceremony, the yESAO was also proud to announce the winners of the third edition of the **yESAO Exchange Award**:

- **Indra Müller** (RWTH Aachen, Germany) & **Philipp Aigner** (Medical University of Vienna, Austria)
"Comparison and improvement of cardiac and vascular mock-up components for flow visualization",
- **Michela Bozzetto** (Mario Negri, Italy) & **Floris Vanommeslaeghe** (Ghent University Hospital, Belgium)
"Computational modelling for surgical planning of arteriovenous fistula for hemodialysis",
- **Alejandro Garcia Garcia** (Université de Technologie de Compiègne, France) & **Fedaa Al Halabi** (Leibniz Universitaet Hannover, Germany)
"Coaxially electrospun and directional solidified scaffolds for bone and vascular tissue engineering"

For the success of the last yESAO meeting in Warsaw, we would like to thank the former coordinators Tom Verbelen and Simon Sonntag, together with the local organisers Krzysztof J. Pałko, Anna Stecka and Krzysztof Zieliński and all the people who have been involved with the organisation of the yESAO meeting.

We are looking forward to meeting you all again next year in Vienna (September 5-6, 2017)!



5th International Symposium on Accidental Hypothermia 'Cold Day' Interlaken / Switzerland - November 11, 2016

Ten years ago, Beat Walpoth organised together with Dieter Falkenhagen the ESAO Winter School in Gstaad, Switzerland where they had the honour to welcome Anna Bagenholm, the world's deepest accidental hypothermia victim with a sequelae-free survival of 13.7°C. Anna, being herself a doctor, gave a fascinating talk related to her accident but mainly about all the artificial organs which were used to rewarm and resuscitate her, such as cardiopulmonary bypass. Anna was again keynote speaker at the 2016 symposium and she clearly said that as her rehabilitation required prolonged pulmonary support and dialysis, she would not have been able to attend this symposium without the benefit of all these artificial organs.

Beat Walpoth started this **Symposia series** which took place in different locations and was always under the patronage of the ESAO. The first symposium was held in Cortina d'Ampezzo, Italy, and was organised by Giuseppe Faggian from the University of Verona (2007); the second was co-organised by Beat Walpoth and the ICAR-MEDCOM meeting in Zermatt, Switzerland (2009); the third was organised by Torkel Tveita in Tromsø, Norway (2012) and the fourth was organised by Hermann Brugger in Bozen, Italy (2014) together with the International Society for Mountain Medicine.

This fifth "Cold Day" Symposium in 2016 was co-organised by the University Hospitals of Geneva and Bern and was attended by over 80 participants mainly from the alpine countries, ranging from the rescue team to the cardiovascular surgeon, anesthesiologists and ICU specialists. These symposia aim at coordinating experience, research and education with local and international rescue teams and hospital staff for discussing better resuscitation techniques and algorithms. The **International Hypothermia Registry (IHR)** which now counts over 50 participating centres worldwide was also a high topic of interest.

The main emphasis of the 2016 symposium was to emphasise the need for wide national and international awareness of accidental hypothermia and the need to work together for better networking to improve the outcome of future hypothermia victims.



Organisers, Speakers & Chairmen



The **mission of the Federation** is to increase and encourage knowledge and research on artificial organs, apheresis, tissue engineering, regenerative medicine and other related topics, to facilitate the international exchange of knowledge, and to provide education related to the improvement and optimal utilization of organ assist devices.

To fulfil this purpose, The Federation arranges biennial congresses jointly with the Member Societies with special emphasis on international aspects and dissemination of knowledge into developing countries. The international peer reviewed **journal ARTIFICIAL ORGANS** is the "Official Journal of The Federation". The meetings are rotating between the main Societies (ESAO, ASAIO: American Society of Artificial

Internal Organs, and JSAO: Japanese Society of Artificial Organs) located at various continents. Smaller intermediate IFAO sessions are held in conjunction with the yearly congress arranged of these societies.

The main purpose of IFAO is to **bridge knowledge over the continents** and thereby facilitate cooperation and exchange of experiences.

During the **ESAO 2016 congress** held in Warsaw, the **plenary IFAO session** was dealing with 'Development of various autologous bioprosthetic grafts with a unique in-body tissue engineering' (Takewa Y - Japan), 'Why is survival on hemodialysis different in Japan, Europe and USA? Plausible options' (Stegmayr B, Sweden), and 'Hemodialysis in Japan' (Matsuda K, Japan).

Important news for the global joint ventures in artificial organs is the establishment of the **APSAO (Asia-Pacific Society for Artificial Organs)**. JSAO has been cooperating with Asian researchers in this issue for several years. This society will include local societies from numerous Asian countries. We look forward to a more firmly establishment soon to enable participation within the IFAO.

NOTE: The next joint meeting is the ESAO-IFAO to be held in Vienna, September 6-9, 2017 with congress president Heinrich Schima.

IFAO contributes with **support** of speakers and travel/ congress support/ grants for young researchers from the distant continents. Look up for information about such grants and support on the congress homepage (<http://www.esao2017.org>).

Sincerely,

Bernad Stegmayr

Announcements



44th **ESAO** and
7th Biennial **IFAO Congress**
September 6-9/2017
Vienna Austria

**Artificial Organs
in the orchestra of life**

www.esao2017.org