



Newsletter

of the *European Society of Artificial Organs*

Letter from the president

ESAO Newsletter
January 2016

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Dear Members of European Society for Artificial Organs,

As the new President of ESAO I want to express my thanks for your continuing support by your active membership, cooperation in one of the Working Groups and also participation in our annual congresses.

ESAO can look back at a long and successful history. I consider ESAO as one of the most important societies in the area of artificial organ support with more than 400 member worldwide and annual congresses with several hundreds of attendees. In light of the outstanding achievements

members of ESAO have made and brought to the patients, I believe it will be important to develop the society further, to recruit new members and strengthen the activity in the field of artificial organs, but also related areas like biomaterials, bioartificial organs and regenerative medicine. I think this will be important since the advent of new technologies and cell-based therapies will shift medical care in the long-term run from pure artificial organ support and replacement to biohybrid technologies and regeneration. This requires that ESAO invites researcher who are active in these fields for active participation as ESAO members, partners in Working Groups and attendees of our congresses.

Beside the remarkable and fruitful activities of our Working Groups, the yESAO is acknowledged as a very valuable part of our society, which makes important contributions to the recruitment and education of the scientific off-spring in the area of artificial organs. The society will support the collaborative work of yESAO members by grants for tandem groups also in the future. The ESAO Schools have made important contributions to the dissemination of knowledge about artificial organs and fulfilled an important task in educating the young generation but also more experienced scientists, engineers and physicians. We had some break in the activities of schools after the resign of Dieter Falkenhagen as Chairmen, but will relaunch with a school next summer organized by Gerhard Rakhorst from Groningen. I consider also the involvement of and cooperation with companies active in the field of artificial organs as a unique feature of ESAO, on which we should further built to intensify cooperation between academia and industry.

The XLII Congress of ESAO in Leuven, September 2015 was a great success. Bart Meyns as Congress President could attract more than 500 people to attend the meeting by the organization of a very appealing congress program of excellent quality. Not only the scientific but also the social program was a real highlight and all of us will remember this congress with great pleasure. During this congress the most prestigious prize of ESAO – The Emil Bücherl Award – was handed over to honor Prof. Klaus Affeld for his lifelong contributions to the field of artificial organs. We organized also a special session on the occasion of the 80th birthday of our honorary President Prof. Dr. Dr. h.c. mult. Horst Klinkmann. Last, but not least Bart Meyns could convince more than 60 congress participants to join our society, which I all heartily welcome as new members of ESAO. The next XLIII Congress of ESAO is organized by Piotr Ladyzynski and Marek Darowski. The congress will take place



from September 14-17, 2016 in Warsaw. The Congress President released already a first call for submission of proposals for special symposia that was distributed among all Board Members and other people. The website will be online in near future at <http://esao2016.ibib.waw.pl/> and calls for submission of abstracts will be released at the beginning of 2016. I would be very glad to see you there again.

I think that all of you noticed also that the membership fee structure will be changed from next year on. We had long lasting discussions in the Board how to simplify the sophisticated membership fee structure of the society, to cover increasing expenses and to ensure the maintenance of the International Journal for Artificial Organs as associated journal of ESAO. In addition we made a change in paradigm for fees from West and East European to high and low income countries based on gross domestic product. More details can be found in the newsletter here.

I and the Board Governors are also interested to keep the International Journal for Artificial Organs (<http://www.artificial-organs.com/>) as platform of ESAO to publish abstracts of our annual congresses, but also papers from Schools of ESAO and contributions from society members. The Board of Governors considers IJAO as a real added value that helps to disseminate latest research from ESAO members, and to disseminate news about society events like congresses, schools, etc. Also one of the most distinguished awards of ESAO 'The ESAO WICHTIG Award' is promoted and financed by the journal publisher. Therefore I invite all of you to use the journal more actively as platform to publish your latest research for distribution among your colleagues inside and outside ESAO. I may also announce here that WICHTIG offers from next year on a relieve from fees for colored graphs and pictures as well as page charges for additional pages of manuscripts from all members of ESAO.

A sad news to all of us was that Dieter Falkenhagen, the former Board Member, ESAO President and founder of ESAO Schools passed away on August 11 this year. With Dieter Falkenhagen, the artificial organs community has lost one of its most active members. We as his friends and colleagues will miss his presence. We wrote together with Danube University Krems an obituary that will be published in the November issue of the International Journal for Artificial Organs. We will also organize a Memorial Symposium at Danube University on April 5, 2016 in Krems, Austria.

As the new president of the society I would like also to improve the communication between society members and the ESAO Board, but also to increase the visibility of the society to a wider community by use of social media like LinkedIn and an improved, regularly updated content of our website. In this regard I invite all of you to post either your news at the LinkedIn account of ESAO (to be established in near future), the existing Facebook account of ESAO <https://www.facebook.com/www.esao.org> and the website www.esao.org. Particularly for the website your news like latest achievements, release of some new product, job opportunities etc. are desired, which you can send directly to our ESAO office at anita.aichinger@donau-uni.at. Moreover, the Executive Committee decided to prepare an online newsletter twice a year to keep you updated on recent developments with this as the first edition.

I hope that you will find this newsletter useful to keep you on track about recent developments and future events. I hope as well that you as valued members of ESAO will maintain a close relationship with the society in future and use also the new platforms, we will establish to improve communication with ESAO Board, other ESAO members but also the wider community in the area of artificial organ support.

With warm regards

Thomas Groth, President

ESAO Organisation

During the Gala Dinner in the Grand Béguinage in Leuven (September 4th, 2015) our former President of the Society Bernd Stegmayr (Sweden) overhanded the presidential chain to our new **President Thomas Groth** (Germany). Simultaneously, Bernd Stegmayr became Past President and Cécile Legallais (France) became President Elect. The presidents are supported by Sunny Eloot (Belgium) as Secretary General, Ulrich Kertzscher (Germany) as Treasurer, and Horst Klinkmann (Germany) and Sergio Stefoni (Italy) as honorary President and Board Member, respectively.

The society welcomed Heinrich Schima (Austria) as **Coopted Board Member**, beside Birgit Glasmacher (Germany) and Rui Reis (Portugal) who were already coopted member.

The **Board of Governors** is formed by Gerardo Catapano (Italy), Marek Darowski (Poland), Giuseppe Faggian (Italy), Ashraf Khir (UK), and Bengt Lindholm (Sweden). Furthermore, Francesco Moscato (Austria) and Maria Giovanna Trivella (Italy) were elected for a second term, and our **newly elected Board Members** are Arianna Di Molfetta (Italy), Joachim Jankowski (Germany), and Tim Kaufmann (Germany):



Arianna Di Molfetta was coordinator of γ ESAO from 2012 to 2014 and promoted the γ ESAO exchange program award. She graduated *cum laude* both as a Medical Doctor in 2015 at the Rome University "Tor Vergata" and as Master Biomedical Engineer in 2007 at the 'Università Campus Biomedico di Roma'. She defended her PhD in Cardiovascular Physiopathology at the Rome University 'Tor Vergata' in 2012 and finished her Post Doc in 2015 focusing on VADs in the frame of the European Project SensorART (ICT-FP7) at the Cardiovascular Engineering Laboratory of the Institute of Clinical Physiology, CNR. She is currently a research fellow at the VAD and ECMO unit of the Department of Pediatric Cardiology and Cardiac Surgery (DMCCP) of the 'Ospedale Pediatrico Bambino Gesù' (OPBG). Her research activity is mainly focused on VADs in pediatrics and in congenital heart diseases and the development of dedicated numerical models.

Joachim Jankowski is Chair and Director of the 'Institute of Molecular Cardiovascular Research' (IMCAR) at the University Hospital RWTH in Aachen (Germany). The *IMCAR-Institute* is dedicated to pursuing scientific excellence in the field of cardiovascular biology with special focus on chronic renal failure, vascular remodelling and cardiovascular disease (myocardial infarction, atherosclerosis). Joachim Jankowski graduated in Chemistry in 1991 at the University of Bochum and finished his PhD about 'Isolation, identification and characterisation of aromatic compounds in hemofiltrate' at the University of Bremen in 1995. He is expert in mass spectrometry. He has ample experience in research management for nearly 20 years, previously being also Director of the Department of Experimental Nephrology and Hypertension, Charité Berlin, Germany. He is Co-Chair of the "European Uremic Toxin" (EUTox) working group, which is a subgroup of the "European Society of Artificial Organs" (ESAO), an endorsed working group of the "European Renal Association-European Dialysis Transplantation Association" (ERA-EDTA) and composed of 26 academic and 7 industrial members. Furthermore, he is coordinating the "New Tools for the Prevention of Cardiovascular Diseases and Disorders in Chronic Kidney Disease" (NT^{CVD}) biobank embedded in the National Genome Research Network in Germany. Also, he has an outstanding track record of participation/coordination in over 5 European research projects (EU Health), demonstrating long-standing research expertise in kidney diseases as well as cardiovascular diseases of patients with chronic kidney disease.



Tim Kaufmann is currently working as head of the computational cardiovascular modeling group of the Department of Cardiovascular Engineering (Institute of Applied Medical Engineering, Helmholtz Institute) of RWTH Aachen University and as founder and CEO of the start-up company Enmodes GmbH.

He graduated in Physics in 2008 and finished his PhD in Theoretical Medicine in 2011, both at the RWTH Aachen University. His translational research is nowadays focused on novel computational models and their validation to improve the development process of medical devices such as blood pumps, heart valves, oxygenators, cannulae and stents. Additionally, he works closely with clinical partners to improve medical therapy by combining computational models with imaging techniques and clinical expertise.

He was board member of the ASAIO (2014-2015) and president of the FYI ASAIO (2012-2015), co-organiser of γ ESAO events, and is currently board member of the ISRBP.

As a board member of the ESAO, there are two specific goals he would like to achieve: 1) to increase the interaction between young and experienced members of ESAO, and 2) to improve interdisciplinary exchange in order to make new research techniques available throughout the disciplines.



The **ESAO 2015** conference took place in Leuven (Belgium) beginning of September, was organised by Bart Meyns and co-workers, and has been attended by more than 550 participants. The meeting was characterised by a strong **scientific program** with four keynote lectures, 67 invited lectures, and around 200 oral and poster presentations based on accepted abstracts. Beside the topic related sessions, thirteen symposia were organised of which the ECMO symposium attracted the highest number of participants.



During the Opening Ceremony in the 'Universiteitshal', Stephan Harm (Austria) and colleagues got the **ESAO-Wichtig Research Award** (certificate and check of 2.500€) for their work 'Pore size – a key property for selective toxin removal in blood purification'. Klaus Affeld received the prestigious **Emil-Bücherl award** for his lifetime achievement.



From the more than 200 submitted abstracts, the **innovation award 2015** of 500€ went to Michael Lommel of Charité (Berlin-Germany) for his work 'Investigation of shear-induced interference on primary hemostasis by rotary blood pumps '

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

1. M. Fedecostante (RUMC, Nijmegen, The Netherlands): 'Immortalized human renal epithelial cells grown on hollow fiber membranes for bioartificial kidney'
2. E. Marcelli (University Bologna, Italy): 'Intravascular impedance sensor for next generation smart prosthetic heart valve'
3. Kawaguchi (Tokai University, Isehara, Japan): 'Liposome-encapsulated hemoglobin remains beneficial after cerebral ischemia and reperfusion in rat'



For the second year the PhD-committee rewarded young researchers who recently finalised their PhD and passed an important international track. This year, Simon Sonntag and Marcus Niepel (both from Germany) were overhanded a '**Certificate of Recognition of Excellence**' and got the opportunity to briefly present their PhD work in the special PhD-session on Friday September 4th, 2015.

Beside the scientific part of the meeting, several social events were organised, such as the welcome reception in the Universiteitshal on Wednesday, the guided city visit, mountain bike tour and networking reception on Thursday, and the gala dinner in the Faculty Club on Friday evening.

Just before the official start of the conference, company tours to Cochlear, IMEC and Materialise were organised on Wednesday afternoon. Although tours were fully booked at registration, the attendance was unfortunately rather low.

yESAO 2015 - Leuven (Belgium) - Innovation!

The yESAO is the young researchers' initiative within the European Society for Artificial Organs. First attempts were made in the year 2009 to bring young scientists together. We are colleagues and as young researchers we want to exchange ideas and experiences, discuss career development paths and fund raising via joint research projects, and have fun doing effective networking. Therefore, we organise an additional day preceding the ESAO annual meeting where we organise scientific sessions. These sessions are meant to be educational and presenters are encouraged to also talk about their problems within their projects. To put it in a few words, here is the **young ESAO's mission statement**:

"The yESAO is an open network of young researchers in the artificial organs field that fosters social contacts and stimulates friendships. It aims to use innovative methods to provide scientific support and practice-oriented education to scientists of all disciplines in their early career stages to improve their scientific outcome and push forward the knowledge of the society as a unit, in an enjoyable atmosphere without the limitations of conventional organisations."



During the last congress in Leuven, **yESAO 2015** was attended by around 50 participants and the coordinators of yESAO, Tom Verbelen and Simon Sonntag, proposed an attractive program with:

- 2 invited speakers to talk about unknown domains for us in which medicine and engineering meet
- 12 oral presentations
- 1 workshop to promote creativity
- 1 poster session
- social program with a typical Belgian 'cactus'



The **yESAO Research Exchange program**, gives students interested in biomedical and medical research the possibility to experience research in different research laboratories in the frame of the European Society of Artificial Organs.

The idea behind the yESAO exchange award is a quote by G.B. Shaw:

*"If you have an apple and I have an apple and we exchange these apples then you and I will still each have one apple.
But if you have an idea and I have an idea and we exchange these ideas, then each of us will have two ideas"*

During the congress, the yESAO were proud to announce the winners of the second edition of the **yESAO exchange award**:

- Desiree Pott & Julien Sigüenza (RWTH Aachen, Germany; Université de Montpellier, France)
Dynamics of artificial aortic valves: a combined experimental and numerical study
- Joeri Van Puyvelde & Ina Laura Pieper (KU Leuven, Belgium; Swansea University, UK)
Paediatric and adult blood in the response to mechanical shear stress
- Timothée Baudequin & Marc Müller (Leibniz Universität Hannover, Germany; Université de Technologie de Compiègne, France)
Biological characterization of complex electrospun scaffolds for bone tissue engineering.



ESAO Summer School 14-15 July 2016



Bridging Blood Pump Technologies with Organ Transplantation



The ESAO Educational Committee organises in collaboration with the Transplantation Center of the University Medical Center Groningen the 2016 ESAO Summer School. A two day course will be held in the Skills Lab of the university hospital, using a human cadaver for demonstration of various surgical techniques and assessment of anatomical fitting of prototypes. Participants are invited to bring prototypes of blood pumps and/or cannulae with them to discuss these with the transplant surgeons of the hospital and to have them tested in situ.

Due to the limited capacity of the teaching and operating rooms of the UMCG Skills Lab, the 2016 ESAO Summer School is open for a maximum of 45 participants. The final program will be published in Spring 2016. Registration fees: ESAO members 200€, non-members 300€.

Registration will start in February 2016 (see www.esao.org).

More information can be obtained from dr. Gerard Rakhorst at g.rakhorst@home.nl

XLIII Annual Congress of the European Society for Artificial Organs

September 14-17, 2016
Warsaw, POLAND



TOWARDS EFFECTIVE, SEAMLESSLY INTEGRATED AND AFFORDABLE ARTIFICIAL ORGANS

ESAO 2016

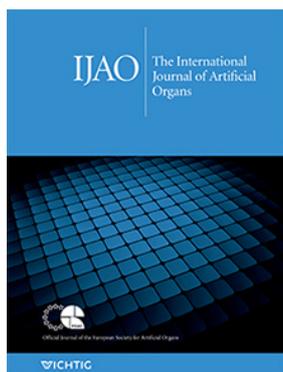
XLIII Annual ESAO Congress



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