



Newsletter

of the European Society for Artificial Organs

Letter from the President

ESAO Newsletter
April 2024

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Contact ESAO office:

anita.aichinger@
donau-uni.ac.at

pmbaptista@
iisaragon.es

More information:

www.esao.org

Edited by:
Pedro M. Baptista

Dear members of the European Society for Artificial Organs,

It is with great pleasure that we present to you today the first issue of our newsletter in 2024 - an extraordinary year!

50 years ago, in 1974, a handful of pioneers founded our society in Geneva as a counterpart to the American Society for Artificial Internal Organs ASAIO. It was even founded across the "Iron Curtain", which at that time still divided Europe into East and West. We will, of course, be celebrating this anniversary in style at this year's congress in Aachen from September 8 to 11, 2024. Among other things, it is planned that one of the founders will take us back to the roots of our society during the gala dinner, which will take place in the venerable Coronation Hall in Aachen City Hall. Further details and an update on the congress preparations can be found on the following pages of this newsletter. **We are already looking forward to receiving many abstracts from you, as these abstracts are the basis for a successful congress. Therefore, do not hesitate to submit your latest data!!!**



Looking back, a lot has happened since our last newsletter in August 2023. Four new governors have been elected, namely Kathrine Fraser from the University of Bath, UK, Libera Freisiello from the University of Twente, The Netherlands, Michael Neidlin from RWTH Aachen University, Germany, and Bente Thamsen from the Medical University of Vienna, Austria. We are very pleased that our Board of Governors is thus further "rejuvenated" with long-standing members who have already done outstanding work as yESAO members to further develop our society. So, welcome on board!

In addition, our immediate Past President, Piotr Ladyzynski was elected as a Coopted Board Member. Piotr has "maneuvered" us as President through the difficult pandemic period, for which he deserves special thanks. We are delighted that he will continue to provide us with advice and support.

Nuno Neves, Simon Sonntag, Dimitrios Stamatialis and Krzysztof Zielinski have finished their terms as elected Board members, as have Thomas Groth and Jan Schmitto as Coopted Board Members. We would like to thank them all for their great commitment, which has also contributed to the successful continuation of our society in the past "crisis years".

There have also been changes to the Executive Board. Our President, Victoria Weber, has passed the baton to me in turn. She deserves our very special

thanks. When the Russian attack on Ukraine started in February 2022, our society suddenly found itself in a delicate situation because the Annual Congress was to be held in Moscow later that year. Victoria acted quickly and prudently at this moment and, in consultation with the Executive Board, offered to relocate the congress to Krems at very short notice. Together with her team in Krems, she managed to organize a great congress within the remaining few months and thus contributed to the survival for our society, because after all, the annual congresses are our most important connecting element. For this, and of course also for her responsible and prudent leadership in general, she deserves our warmest and greatest thanks!

Dimitrios Stamatialis from the University of Twente was elected as the new President Elect. Dimitrios is a long-standing and very active member of our society and the Board of Governors. He has already rendered outstanding services and stands for the sustainable, continuous development of our society. Last but not least, Pedro Baptista was re-elected for a second term as Secretary General. He has already served our society with great commitment and enthusiasm during his first term of office, so his election also stands for continuous further development. Personally, I am very pleased to continue the close and good cooperation with him.

In the meantime, in addition to elections and new appointments, there have been other important activities since the last newsletter, first and foremost of course the fantastic congress in Bergamo. Special thanks go to Andrea Remuzzi and his team for the great organization, the interesting program and the family atmosphere. There were also numerous activities organized by our very active yESAO group and webinars, details of which are provided below.

We are a lively society with a distinctly interdisciplinary profile. Our history began not only across disciplines and borders, but even across systems, beyond "iron curtains". Open and tolerant. This has characterized us from the very beginning, and we should all constantly work on maintaining it. With this in mind, I hope you all enjoy reading this newsletter and hope to welcome as many of you as possible to the next congress in Aachen!

With kind regards,

Ulrich Steinseifer
ESAO President

ESAO 2024 Upcoming Elections

Last September, the ESAO members elected Katharine Helen Fraser (Bath, United Kingdom), Libera Fresiello (Enschede, The Netherlands), Michael Neidlin (Aachen, Germany) and Benter Kristina Thamsen (Vienna, Austria) for their first term as Governors of the ESAO Board. Dimitrios Stamatialis (Enschede, The Netherlands) was also elected as President Elect and Pedro Baptista was reelected for a second term as Secretary General of ESAO.

This year, Alessandra Molteni MSc will leave the board at the end of her second term. We want to thank her for her work at ESAO. Two further Board Members, PD Dr.-Ing. Ulrich Kertzsch and Dr.-Ing. Sebastian V. Jansen, end their first term, and are eligible to run for a second term, if they wish to do so. Hence, on this year elections there are 3 vacant Governor positions available.

Due to this, we want to invite all eligible members who have the energy, drive, and will to help ESAO grow and develop into new realms to submit their candidacy for this upcoming election for the 4

positions available for Governors of the Board. We can use all your help to keep fulfilling our missions at ESAO and persevere in creating hope for patients in need of new therapies.

Pedro M. Baptista
ESAO Secretary General

ESAO Meeting 2024 in Aachen, Germany

Update on 50th ESAO Meeting 2024 in Aachen, Germany



50th ESAO in Aachen, Germany
08. - 11. September 2024
Organ · Cross · Talk
Honoring the Past, Empowering the Future

 **ESAO**
www.esao2024.org

CALL FOR ABSTRACTS

[Submit your Abstract](#)

Abstract submission deadline: **30.04.2024**

There are only five months left until our big annual event: the annual congress of our company. This year it has a very special significance: it is the 50th congress in the 50th year of our existence. We want to celebrate this during the congress, among other things with a gala dinner in the time-honoured Coronation Hall of Aachen Town Hall, a building with a history dating back over 1200 years to Charlemagne. A total of 31 emperors and kings were crowned here between the years 936 and 1531. After its construction around 1349, the Coronation Hall was the largest secular hall in the Holy Roman Empire, and it is also where the International Charlemagne Prize of Aachen has been awarded every year since 1950. It is the oldest and best-known prize to honour personalities or institutions that have rendered outstanding services to Europe and European unification. Thus, the ideal place for a gala dinner to celebrate the 50th anniversary of a European Society!



The congress itself will take place in the Aachen congress centre "Eurogress" and bears the motto "Organ - Cross - Talk, Honoring the Past, Empowering the Future". This "hides" several messages: we would of course like to look back on the 50-year history of our society, but also take a look "out of the box" into the future. One focus will be to take advantage of our unique interdisciplinarity to not only look at the individual organs, but also at their interactions with special impact on the design of "cross-talking" artificial organs.

The motto of the first day is "State of the Art", i.e. presenting and discussing the latest scientific findings.

The second day of the congress is entitled "Organ Cross Talk & Trends" and will focus on the interaction ("cross-talk") of (artificial) organs. However, the translation of research into the clinical arena will also be discussed, with particular regard to the new regulatory provisions in Europe, the Medical Device Regulations MDR.

The motto of the third day is "Towards artificially intelligent organs". Here we will look to the future and focus on the influence that artificial intelligence might have on future technologies and therapies in the field of artificial organs.

There will be plenary lectures at the beginning and end of each day, followed by plenary discussions on the respective day's topic.

The programme is divided into 12 thematic blocks and will be put together by a programme committee of around 30 people. For each thematic block one clinician, one scientist and one yESAO member will be responsible, and there will also be a clinical and a scientific keynote lecture for each block. We hope to be able to offer a programme that is as wide-ranging, interdisciplinary and above all exciting as possible. However, your contributions will be crucial for a great programme. We are therefore hoping for lively participation and many exciting abstracts, which you can submit until the end of April. You can find more details on abstract submission, registration, and the provisional programme on our congress website www.esao2024.org.

However, the congress would not be complete without our yESAO members and their pre-congress. This will take place on 7 and 8 September, partly at the research campus of the RWTH Aachen University and partly in the Eurogress. You can also find more details on the congress homepage and at <https://youngesao.com>. This is where our future is being shaped, which is why the pre-congress is an absolute highlight for all younger scientists interested in the exciting field of artificial organs! Another highlight will be a bonding event during the main congress, where we will bring young scientists together with our sponsor companies.

In addition to innovative science, we will also be offering a social programme for congress participants and their companions. This includes the gala dinner, of course, but also guided tours of the old "imperial city" of Aachen with its historic town hall and Aachen Cathedral, the best preserved building from the Carolingian period (751-919 AD) and the first cultural site in Germany to be inscribed on the UNESCO World Heritage List in 1978. During the guided tours, you will learn exciting things, especially about the role of the devil in a catholic city. Be curious ...

We, the organisers, are very much looking forward to the congress and to welcoming as many of you as possible to Aachen to celebrate and continue writing a piece of history with you.

See you soon !

Payam Akhyari
Congress President

Joachim Jankowski
Program Chair

Report of the ESAO Meeting 2023 in Bergamo, Italy

The 49th Congress of the European Society of Artificial Organs, in conjunction with the International Federation of Artificial Organs, was held in August/September 2023 in the city of Bergamo (Italy). The annual congress focused on "medical technology to improve artificial organs".

Three sessions were held over the course of three days. These sessions were split into presentations and poster sessions, as well as in poster flash talks. In total, there were 245 attendees at the event, with 96 talks and 98 poster presentations. The abstract of each presentation and posters have been published in the July issue of the International Journal of Artificial Organs (<https://journals.sagepub.com/toc/jaoa/46/7>).

Six international keynote speakers have been invited and they presented and update on different topics related to artificial organs, at experimental and clinical level.

- Peter Kotanko (New York, US) presented the actual challenges of kidney replacement therapies and in particular those of the artificial kidney, from the clinical to the socio-economic aspects, that represent a huge challenge for the future all over the world.
- Claudio Cobelli (Padova, Italy) introduced a rather new area of investigation for the ESAO, that of artificial pancreas. The lecture addressed the most recent advancement in signal processing and sensor technology, and the future development of artificial systems to automatically control glycemia.
- Giuseppe Remuzzi (Bergamo, Italy) focused on a future perspective involving artificial organs, that is the new discoveries on xenotransplantation. The evolution of these clinical proof of concepts may open the possibility to open the clinical setting to organ replacement with a biological strategy, posing the question of the future of artificial organs.
- Helen Roche (Cambridge, US) presented new and exciting research at MIT related to soft robotics for cardiorespiratory applications, extending the lecture content to the use of artificial intelligence to ameliorate the performance of cardiac MRI and cardiac modeling.
- The last invited session was dedicated to an urgent problem in the field of artificial organs that is the necessity to comply with the new Medical Device Regulation. Directly from the European Commission, M. Gabrielli Cossellu (Bruxelles, BE) explained the point of view of the EU on the regulatory framework on medical device regulation and its implementation. Francesco



Pizzutilo (Milano, Italy) presented the opportunities and challenges for medical devices and artificial organs, from conception to regulation and to the clinical use in Europe.

While oral presentations and abstracts addressed the traditional themes of the ESAO Congress, such as systems to assist or replace cardiac, renal and pulmonary functions, two new areas of scientific research and clinical applications have been the object of oral presentations and posters. As mentioned previously one is the research and new development of the artificial pancreas, and the other is related to the new advancements in artificial systems developed for organ preservation before transplantation. Both these areas involve the technology and the clinic, and they are related to organ replacement or preservation. These topics represent new areas for ESAO to continue to promote the interdisciplinary approach requested for these clinical applications.

Beside the scientific activities, the ESAO/IFAO Congress was, once again, an important opportunity for researcher and clinicians to meet and discuss common effort to improve the technological and clinical level of artificial organs and technology in medicine. The networking was also improved by a large participation to the social dinner. A number of awards from IFAO and SAGE, the publisher of the official journal of the Society, was assigned to young investigators. The Congress was an important occasion to meet in person again and to continue the activities of the Society, that has a long and strong tradition, in preparation of the 2024 Congress in Aachen that will be the 50th edition. The success of the Congress was also due to the support of the attendees. I would like to stress the message that our research is highly dependent from the recognition of our field at different levels, and participation to the annual Congress is an important step in this direction.

yESAO news and congress 2024

Report on yESAO Meeting 2024

This year's main ESAO Congress in Aachen, Germany, will again be launched by the yESAO meeting on September 7th and 8th. The upcoming yESAO Congress builds upon the success of last year's memorable event in Bergamo with over 95 attendees, and we are eager to keep the great momentum initiated by the community. Different from last year, we will start on a Saturday with our program, which includes a plethora of different sessions covering a multitude of scientific disciplines, skills and possibilities for networking:

Saturday, September 7th:

After the registration at the Uniklinikum Aachen, there will be a welcome lunch followed by the yESAO opening words and the scientific program with an interactive keynote lecture on the topic "career paths after finishing your PhD". This will be followed by a pitch session where participants present key aspects of their research in no more than 3 minutes and one static slide. The aim of this session is to improve how to effectively communicate the main idea of a project to an audience unfamiliar with the topic. This session aims to spark interesting scientific discussions about the attendees' work and give the attendees the opportunity to look for possible collaborations or partners for a yESAO exchange application, while engaging with scientific groups from other institutions. Taking advantage of the proximity of the UKA to many related institutes and companies, there will be organized visits to different partners covering topics relevant to all fields of the ESAO. Following the scientific program on Saturday afternoon, it will be the time to get together and enjoy the evening during the yESAO social program. This includes the yESAO conference dinner followed by the yESAO party.

Sunday, September 8th:

The scientific program on Sunday will start with an inspiring Keynote lecture by three speakers on the topic “Bringing science to life: exiting academia into the industry/startup”. They will talk about their experiences of working in companies at different stages of success and ways of exiting academia to bring research into application. After lunch, we will eventually transition to the yESAO discover & connect session. This session offers participants the chance to connect with other attendees and talk about research projects e.g. presented during the pitch session. Through interactive networking activities, participants can find exciting avenues for collaborative research. Later in the afternoon, the participants will have the opportunity to get hands-on experience during the workshop session. We will wrap up the weekend during the closing words and head over to the ESAO opening ceremony. The great echo with more than 95 registrations for the yESAO meeting last year reflects the eagerness of the participants to connect with their peers and to create memorable moments and long-lasting collaborations and friendships. We are more than excited about the upcoming on-site meeting and are looking forward to welcoming you all in Aachen.

Isabell, Tom & the yESAO core team

yESAO News

New Coordinators

With the ESAO last year, Jana Korte and Andreas Escher completed their final term and handed over the torch of the yESAO coordinator position to Isabell Esslinger and Tom Bode who are briefly introducing themselves below:



Dear yESAO and ESAO Members,

I am Isabell Esslinger and I am a PhD candidate at the Biofluid Mechanics Laboratory in the Institute of Computer-assisted Cardiovascular Medicine at “Deutsches Herzzentrum der Charité” in Berlin since 2021. In 2022, I had the privilege of becoming a member of the youngESAO core team. Joining the vibrant yESAO community has been an enriching experience from the very start. As I step into the role of coordinating the core team together with Tom Bode, I am humbled by the opportunity to contribute to its continued growth and success. I am excited about the prospect of engaging in insightful discussions, fostering collaborations, and making meaningful contributions to the upcoming conference. I extend my gratitude to yESAO and the ESAO for their support and confidence in me.

*Best,
Isabell*



Dear members of the yESAO and ESAO,

My name is Tom Bode and I am currently pursuing my PhD at the Leibniz University Hannover in Prof. Glasmacher’s Institute for Multiphase Processes. I joined the yESAO community in 2022. Ever since I got to know the yESAO as an exceptionally welcoming community with open-minded individuals striving to further our knowledge and improve people’s lives. It is with great enthusiasm that I am taking over as yESAO coordinator together with Isabell Esslinger to continue the incredible work put forward by our predecessors Jana Korte and Andreas Escher and those before them. I would like to take this opportunity to thank the yESAO and the ESAO for their confidence and to express my dedication to support these communities the best I can.

*Best regards,
Tom*

yESAO Core Team 2024

The coordinators will be supported by an international Core Team of 18 dedicated young researchers from 7 different countries. We are especially happy to welcome Marlene Schadow and Sophia Krakowski as new members of the Core Team this year. Unfortunately, Ben Schürmann had to leave the Core Team and we thank him for his unmatched dedication and input over the last years.

yESAO Exchange Awards 2024

The yESAO is happy to announce the awardees of the yESAO Exchange Award 2024:

- Robert Gatman (University of Medicine and Pharmacy „GrigoreT.Popa” Iasi, Romania) and Lars Fischer (RWTH Aachen University, Germany)

‘Comparison of Rotary Pump Designs in Off Design Point Operations Through In Vitro and In Silico Investigations’

- Jean-Philippe Tosiani (Université de Technologies de Compiègne, France) and Tom Bode (Leibniz University Hannover, Germany)

‘Fabrication and Comparison of Different Superhydrophobic Electrospun Surfaces for the Use in Biomedical Applications’

yESAO PhD Award 2024:

The application for the yESAO PhD Award 2024 is currently open (Deadline: May 31, 2024). Don't miss this opportunity and send in your application now! For further details, please check our website (<https://www.esao.org/awards/esao-phd-award/>) or contact us via yesao@esao.org.

Announcements



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50th Congress

September 08 – 11, 2024
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