



Newsletter

of the European Society for Artificial Organs

Letter from the President

ESAO Newsletter

**September
2022**

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Edited by:
Pedro M. Baptista

Dear Members of European Society for Artificial Organs,

Please find enclosed the second issue of the ESAO Newsletter in 2022, which was edited by Pedro Baptista, our Secretary General.



The last months and weeks have mainly been dedicated to the organization of our upcoming 48th ESAO conference, on-site in Krems, Austria (September 7-10, 2022). Thanks to the great support from our colleagues at the Medical University of Vienna, from our Board Members, the members of the Executive Committee and from our neighbor institutions at the Campus Krems, everything is ready to make ESAO 2022 a great experience. We highly appreciate the commitment of our yESAO colleagues, who have compiled a rich scientific and social program for the yESAO meeting (September 6-7, 2022), and we are looking forward to the joint sessions with contributions from our colleagues from ESOT, IFAO, and TERMIS. During the Opening Ceremony, the winners of this year's SAGE Research Award and the ESAO PhD Award will be announced. I would like to acknowledge SAGE Publishing for sponsoring the ESAO SAGE Research Award 2022, which supports young colleagues in gaining visibility in the field.

Please visit www.esao.org/esao2022 for detailed information and follow the ESAO activities on Twitter or LinkedIn.

As next event, the Summer School of the ESAO EUTox Working Group will be held in Skopje, Republic North Macedonia, from September 21-23, 2022. The program will be dedicated to approaches tackling cardiovascular complications in kidney failure. We thank Joachim Jankowski and his team for organizing this event.

Our ESAO-IFAO webinar series was continued with contributions from Dr. Stephen Ash, Dr. Mohamed Labib, Dr. Tomohiro Nishinaka, and Prof. Nuno Neves. The monthly webinar series will be taken up again on October 20th.

Gloria Gallego Ferrer has finished her second term as ESAO Governor in 2022, and we are grateful to her for her valuable contributions. As Chair of the Working Group Education, Gloria was one of the driving forces in initiating the ESAO-IFAO Webinar series.

The elections for the three open Governor positions are currently ongoing. Please send your votes via letter or visit the ESAO booth at the ESAO conference in Krems to vote. The result of the election will be announced during the ESAO General Assembly on September 9.

Our new councilor at EAMBES is Dr. Marcus Granegger, whom we also thank for his commitment.

The preparations for the 49th ESAO conference, which will take place from August 31st to September 3rd in Bergamo, Italy, have already started. It will be a joint ESAO IFAO meeting, and we all look forward to it.

The call for the organization of the ESAO conferences in 2024 and 2025 will be sent out within the next weeks.

Finally, Prof. Thomas Groth will organize an ESAO Winter School in Halle, Germany, from February 15th to 18th, 2023, on the occasion of his retirement.

With that, let me conclude and express my deep hope that science and the ESAO community will contribute to bringing people together to work for progress and for a peaceful future, which is more than ever needed.

With warm regards,
Viktoria Weber

ESAO Elections 2022 Candidates

Last year, the ESAO elections were run exclusively online with three Governors elected to the Board of Governors, a new President Elect and a new co-opted Board Member. This year, we have 2 candidates for re-election (Marcus Granegger and Marc Muller) and a new candidate for the Board of Governors (Thomas Lenarz).

Candidates for Governors of the Board of ESAO



Marcus Granegger (Germany) is a Group Leader (Tenure Track Position) at the Department of Cardiac Surgery, Medical University of Vienna, Austria. He is a biomedical engineer, working in the field of cardiovascular research with a passion for mechanical circulatory support (MCS). His research focuses on the interaction between the cardiovascular system and MCS devices and on the design of novel MCS options to treat patient populations for which there is no other therapy, such as children with congenital heart defects. He has been a board member for the last 3 years, and would like to further contribute enthusiastically to the future development of the ESAO.

He wants to dedicate his second term in the Board of Governors to foster cooperation within the ESAO, leveraging the outstanding academic and industrial potential of the society, to realize the vision of novel MCS treatment options to meet unmet medical needs.

Marc Müller (Germany) is currently chief engineer and postdoc at the Institute for Multiphase Processes at the Gottfried Wilhelm Leibniz University Hannover. He is a biomedical and mechanical engineer and his research focuses on the degradation of polymeric implants as well as on the processing of body-derived protein solutions and fabrication of patient-specific implants. Since 2021, he is Co-Chair of the ESAO Working Group Education and Governor of the Board since 2019. He is also Manager for Regulatory Affairs (TÜV Süd).



Thomas Lenarz (Germany) studied medicine and biochemistry at the universities of Tübingen, Erlangen, Heidelberg and London from 1975 until 1981 and received his doctoral degree in medicine. He received his Ph.D. in pharmacology of the auditory system in 1987. He performed a postdoc at the University of California in San Francisco in 1989. Since 1993, he is Chairman and Professor at the Department of Otolaryngology, Hannover Medical School. Since 2013 co-director of the Cluster of Excellence Hearing4All Hannover-Oldenburg. He is also the Director of the German Hearing Centre and the Research Institute of Audio- and Neurotechnology in Hannover and member of the German National Academy of Sciences (Leopoldina) and the German Academy of Technology (acatech). Past President of the German Society of Biomedical Technology. He has research interests in the area of auditory implants, biomaterials for medical implants, audiology and neurotology.

48th ESAO Meeting 2022 in Krems, Austria



The 48th Annual Congress of the ESAO will take place from September 6-10, 2022, in Krems, Austria. The event will start on September 6 and 7 with the meeting of the yESAO, followed by the main ESAO Congress from September 7 to 10. We expect about 80 participants for the yESAO and more than 200 participants for the main congress. As at previous congresses, yESAO will organize interesting hands-on workshops such as artificial skin stitching and microscopy with the scanning electron microscope and the confocal laser scanning microscope of the Core Facility at Campus Krems. For the main ESAO congress, a total of 160 abstracts from 23 countries have been submitted, covering a wide range of

topics in the field of artificial and bioartificial organs. The scientific program comprises 14 symposia - each of them starting with a keynote lecture - and 7 sessions.

To increase the attractiveness of poster presentations, 20 of the total 75 submitted posters will be presented in the form of short flash talks. The event will include an opening lecture and three plenary lectures by internationally renowned scientists from our field, covering topics including organ transplantation, artificial heart, extracorporeal therapies, as well as the COVID-19 pandemic. Joint sessions with contributions from our colleagues from ESOT, IFAO, and TERMIS complete the scientific program.

As this congress is the first to be held on-site since the start of the Covid-19 pandemic, special attention has been given to social events to intensify networking. In addition to the traditional networking events during the opening and the closing ceremonies, a traditional Austrian Heurigen evening as well as a poster Session followed by Wine & Cheese will take place to bring scientists together for stimulating discussions. At the same time, special attention has been paid to safety of all participants. Free PCR-testing will be available on-site for all participants throughout the meeting. We ask all participants to inform themselves about detailed regulations at the congress website.

yESAO news and congress 2022

yESAO Congress 2022

After two years of virtual meetings, this year the (y)ESAO is back with the 48th Annual Congress of the European Society for Artificial Organs (ESAO) on-site in Krems, Austria. Following the tradition, the main ESAO congress will be launched by the yESAO meeting on September 6th and 7th. In light of the ongoing global challenges, the vision of this year's yESAO meeting is to build bridges all around the globe, connecting and engaging both young and experienced researchers with different backgrounds. The yESAO feels honored to provide the platform for aspiring, next generation researchers to discuss their latest research in-person, while enjoying the evening with their peers during the yESAO social program. The program includes diversified sessions covering a multitude of scientific disciplines:

Tuesday, September 6th:

After a Welcome Lunch and the yESAO opening words, the scientific program will start on Tuesday afternoon with the Keynote lecture of Teodora Konach. Along with an interactive case study, she will be talking about a topic that affects all of us irrespective of scientific discipline – research integrity. Later in the afternoon, the participants will have the opportunity to get hands-on experience during the yESAO Workshop Session: In the core facility tour, participants will have the opportunity to receive high-quality training on state-of-the-art core facility devices. Further, the participants can practice stitching as well as puncturing and cannulating vessels on an artificial skin model.

Following the scientific program on Tuesday afternoon, it will be the time to get together and enjoy the evening during the yESAO social program. This includes the yESAO conference dinner at the restaurant Wellenspiel, followed by the yESAO Party sponsored by enmodes GmbH and hosted in the Marquée Club.

Wednesday, September 7th:

The scientific program on Wednesday will be launched by two inspiring keynotes of the experts in the field of blood rheology, blood trauma and respective numerical modelling: Dr. Michael Simmonds and Dr. Kate Fraser. 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 purpose of this session is to

realize the difficulty and importance of conveying your passion for the project to an audience not familiar with the topic.

After a lunch break, Dr. Shaun Gregory will pitch his initiative of international collaborations in the frame of the Total Artificial Heart Hackathon. His talk will make the transition towards the yESAO Networking Session where participants will team-up and join their strengths to create a title for a research proposal. This holds the unique chance to exchange ideas and experiences with other researchers and to, maybe, even come up with a collaborative idea for the upcoming yESAO Exchange award.

The great echo in registrations for the yESAO meeting reflects the eagerness of the participants to connect with their peers and to create memorable moments and long-lasting friendships. The yESAO is excited about the upcoming on-site meeting in Krems. We look forward to welcome you in Krems.

Jana, Andi & the yESAO core team

yESAO News

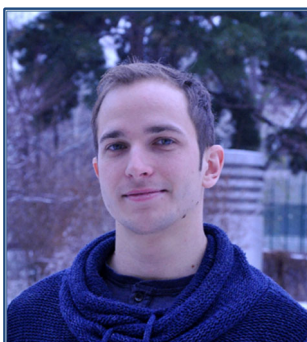
Farewell of the Former yESAO Coordinators

This year, Ben Torner and Martin Maw completed their final term and handed over the torch of the yESAO coordinator to Jana Korte and Andreas Escher. The yESAO would like to once again thank Ben and Martin for all their enriching contributions over the last years.



Dear yESAOs,

I would like to thank you very much for the opportunity to be the coordinator in this great community. The two years were an immensely exciting time and especially organizing the yESAO conferences gave me a lot of pleasure and helped me to develop personally. Martin has been a great partner and I thank him also as a friend. Furthermore, I thank the many support of ESAO and our great yESAO core team. You people are great! I am looking forward to the yESAO activities in the next years, where I am happy to be part of the core team.



Thank you to all friends in yESAO, and to everybody in ESAO who supported us these past years. Special thanks also to Ben, who has been a bucketload of puppy love to work with!

It was an amazing experience to contribute to this society, that helped me grow as a person. I am elated that the yESAO is in competent hands with Jana and Andi at the helm!

Thank you and bon voyage!

Retreat and Conference Planning in Berlin 11th June 2022

The new coordinators were immediately supported in their role by an ambitious Core Team of 12 young researchers. To get to know each other and initiate the intensive period of conference planning the yESAO organized a retreat hosted in Berlin. During this retreat, colleagues became friends and duties became joy, and the current conference program evolved.

yESAO Exchange Awards 2022

The winners of the yESAO Exchange Award 2022 successfully completed their exchanges and will present their findings in the Awards Session of the main ESAO:

- Joseph Bornoff and Faisal Zaman:
'The influence of pumping parameters on haemolysis produced by positive displacement artificial hearts: a combined experimental and numerical study'
- Gesine Hentschel and Nicolas Rivoallan:
'Fabrication of graded polymer fibers for the use in the osteotendinous junction'

The application for the yESAO Exchange Program Award is currently closed. A new application round for the yESAO Exchange Awards 2023 will start in December 2022 and will be advertised on time.

ESAO Joint Summer School 2022 of the EUTox Working Group and the SFB/TRR219 – Skopje (North Macedonia)



**Joint Summer school of the ESAO,
Eutox working group,
and the SFB/TRR219 IRTG**

**“Emerging and future technologies to remove uremic
toxins: tackling cardiovascular complications in kidney
failure”**

**Skopje, Republic North Macedonia
21-23 September 2022**

EUTox

European Society for Artificial Organs

MYOCARDIUM VESSEL CIRCULATION

Aachen
Homburg
SFB TRR 219

Emerging and future technologies to remove uremic toxins: tackling cardiovascular complications in kidney failure, organized by PD Dr. Heidi Noels and Prof. Dr. Joachim Jankowski on the behalf of EUTox

Did you know that since the discovery of dialysis the technology has not innovated that much? But that the number of patients, with associated comorbidities like cardiovascular diseases, is incredibly rising? Different pathological processes underlie increased cardiovascular risk in patients with chronic kidney disease, and clinicians and basic scientists are working side by side to reveal mechanistic insights. This is required for improvements in both the diagnosis and treatment of patients. This course is meant for future scientists in experimental nephrology and cardiovascular diseases and will equip you with the knowledge needed to make a change for kidney patients through accelerating insights into the underlying pathology of chronic kidney disease and associated cardiovascular

disease, trends in dialysis technology, regenerative nephrology and artificial intelligence. The course is meant for PhD/Dr med students and young postdocs with a background in biomedical, technological or pharmaceutical sciences and concerns diverse trainings and workshop activities along with social events.

ESAO Winter School 2023 in Lutherstadt Wittenberg, Germany

MARTIN-LUTHER-UNIVERSITÄT HALLE-WITTENBERG

Fraunhofer IMWS

IFAM

ESAO
European Society for Artificial Organs

ESAO Winter School 2023

List of Speakers

- Maria Rosa Aguilar, Spain
- George Altankov, Bulgaria
- Gerardo Catapano, Italy
- Gloria Gallego-Ferrer, Spain
- Gilson Kang, South-Korea
- Horst Klinkmann, Germany
- Yannis Missirlis, Greece
- Nuno Neves, Minho, Portugal
- Joao Mano, Aveiro, Portugal
- Manuel Salmeron-Sanchez, UK
- Heinrich Schima, Austria
- Dimitrios Stamatialis, The Netherlands
- Christian Schmelzer, Germany
- Bernd Stegmayr, Sweden
- Jörg Vinken, Germany
- Viktoria Weber, Austria
- Christian Wölk, Germany
- Kai Zhang, Germany

Lutherstadt Wittenberg, Germany
February 15-18, 2023
www.esao.org

Artificial Organs and Tissue Engineering – From Basics to Clinical Application
Farewell Symposium Prof. Dr. Thomas Groth

The upcoming ESAO Winter School will also represent a Farewell Symposium for Prof. Thomas Groth, former President of ESAO, who will retire as Professor of Biomedical Materials at Martin Luther University Halle-Wittenberg. The motto of this event is “Artificial Organs and Tissue Engineering – From Basics to Clinical Application” and refers to presentations on materials science, development of technologies, and the bedside application of these disciplines for the treatment of patients. The organizing committee has succeeded in attracting distinguished international speakers who will give talks on the state of the art in the field. The meeting will also provide an excellent platform for the presentation of the work of regular participants during the poster sessions with snacks and beverages, a get-together party as well as guided tours through the historical centre of the old town. As is customary at our Winter Schools, awards will be given for the best poster presentations.

The venue is the Leucorea Wittenberg, which represents the oldest part of the Martin Luther University founded more than 500 years ago, but equipped with modern lecture halls. The Leucorea is located near the Lutherstadt Wittenberg train station, which can be easily reached from airports in Berlin or Leipzig. The Winter School will take place from February 15-18, 2023. Registration and poster abstract submission will open soon and can be accessed through our website <https://www.esao.org/events/winterschool/>.

We heartily invite you to join the next ESAO Winter School 2023 and hope to welcome you next year in Lutherstadt Wittenberg.

With warm regards from Organizing Committee,
Thomas Groth, Viktoria Weber, and Christian Schmelzer

Report about activities of International Federation for Artificial Organs (by IFAO-Secretary-Treasurer Thomas Groth)

As a major focus of IFAO is the support of transcontinental collaboration between the member societies. One of the measures is the organization of IFAO Sessions during the annual meetings of member societies ASAO, ESAO and JSOA. This year IFAO supports the organization of a special symposium on Cardiac Support during the upcoming congress of ESAO in Krems with contributions from different continents. Heinrich Schima, the Chairman of IFAO and Toru Masuzawa, the Chairman of Asian Pacific Society for Artificial Organs jointly organized this session to be held in Krems and later also during the Congress of Japanese Society for Artificial Organs. The program of IFAO Symposium during the ESAO Congress in Krems is shown below.

Saturday, September 10, 2022

Room G.E.06		
08:30–10:00		Joint IFAO – ESAO Symposium Chair: H. Schima (Vienna, Austria), T. Masuzawa (Ibaraki, Japan)
08:30–09:00	O104-K	Magnetically Levitated Mechanical Circulatory Support Systems T. Masuzawa (Ibaraki, Japan)
09:00–09:20	O105	A Globally-Collaborative Approach to Improve Pre-Clinical Evaluation of Cardiovascular Devices S. Gregory (Melbourne, Australia)
09:20–09:40	O106	Recent Developments in Cardiac Valve Replacement U. Steinseifer (Aachen, Germany)
09:40–10:00	O107	The Effects of the European Medical Device Regulation (MDR) on Implant Development and Clinical Evaluation B. Akra (Landsberg, Germany)

IFAO is also glad to announce the upcoming ESAO-IFAO Congress that will be organized by Andrea Remuzzi which shall take place from August 29 – September 2, 2023 in Bergamo, Italy. IFAO will strongly support the congress by a stipend to be used partly for travel grants for PhD students from other continents and invitation of speakers.

IFAO will continue to support the organization of ESAO-IFAO Webinars, which started in Spring 2021 with great success. Our sister societies ASAO and JSOA help to disseminate the information about webinars to their members. More details about webinars can be found in this newsletter.

Also, if you have any questions or suggestions regarding the activities of IFAO you can contact Thomas Groth (thomas.groth@pharmazie.uni-halle.de) or Heinrich Schima (heinrich.schima@meduniwien.ac.at).

Working Group Activities

WG Albunet

Regularly interactive presentations have been performed on topics related to the protein albumin. Presentations on the first Tuesday of every month have been performed at 17.00 hrs via internet. This was open to all members of albunet e.V. Currently, internal discussions circle around a submission of a grant related to albumin analysis and performance. A meeting on this topic was performed on August 26, 2022. Also, during the 48th Annual ESAO Congress in Krems, an albunet symposium with 5 speakers will take place.

WG Tissue Engineering

The working group organized a session together with yESAO at the Tissue Engineering and Regenerative Medicine International Society (TERMIS-EU) Meeting held in Krakow, Poland, from June 28th to July 1st 2022. This symposium was organized in collaboration with Prof. Thomas Groth in the framework of the Working Group on Tissue Engineering of ESAO. We have also organized a joint TERMIS-ESAO Symposium at ESAO Congress 2022. This Symposium was organized in the framework of the MoU signed between both Societies.

WG Bioartificial Organs

The working group has organized a specific session on bioartificial organs at ESAO Congress 2022.

Room G.E.12		
14:00–15:30		Symposium: Bioartificial Organs Chair: O. Ter Beek (Enschede, The Netherlands), J. Vienken (Usingen, Germany)
14:00–14:30	O46-K	Extracorporeal Blood Purification, Kidney Therapies and Exogenous Toxins <u>J. Vienken</u> (Usingen, Germany)
14:30–14:45	O47	Assessing the Functionality of Bioengineered Proximal Tubules for Bioartificial Kidney Applications J. Faria, S. Ahmed, D. Stamatialis, M.C. Verhaar, R. Masereeuw, K.G.F. Gerritsen, <u>S.M. Mihailă</u> (Utrecht, The Netherlands)
14:45–15:00	O48	Development of Hemodialysis Membranes for Outside-In Filtration <u>D. Ramada</u> , I. Geremia, O. ter Beek, D. Stamatialis (Twente, The Netherlands)
15:00–15:15	O49	Light-Driven Urea Oxidation for a Wearable Artificial Kidney <u>J.C. Vollenbroek</u> , M.C. Verhaar, M. Odijk, K.G.F. Gerritsen (Utrecht, The Netherlands)
15:15–15:30	O50	First Optimization of a Co-Culture of Dural Fibroblasts and Stem Cells for Meningeal Tissue Engineering L. Tonini, C. Pelletier, <u>N. Oederich-Muniz</u> , T. Baudequin (Compiègne Cedex, France)

Dutch WG Bioartificial Organs members are currently contributing to the establishment of the Dutch NXTGEN program (where ESAO sent a support letter too) and to EKHA but we expect to have more concrete plans to report in the beginning of 2023.

Corporate Members Enquiry Results

In the first months of 2022 Alessandra Molteni and Tom Verbelen organized a survey among current and possible future corporate members for the ESAO. Attracting more corporate members to our society should be of mutual interest for both ESAO and these companies, since ESAO might give a lot in return to their corporate members.

To better understand the needs and desires of (possible future) ESAO corporate members the results of this survey were analyzed. The most important need for corporate members appears to be able to have access to the ESAO members in order to be able to network with our scientists, doctors and engineers. The means to do so have been identified:

- *Organizing corporate symposia and round tables with other medical device companies and notified bodies at the ESAO annual meetings.*
- *Presence of our corporate members on our monthly webinars*
- *Setting up a supporting corporate committee*
- *Increasing the opportunities for cooperation between academia and industry*

- *Attract more clinicians to the ESAO by increasing the number of clinical relevant topics at the meetings and in publications.*

The ESAO board has discussed these results and aims to attract more corporate members in the upcoming years by focusing on the points described above. Of course, all our members are happily invited to come up with other ideas and or suggestions.

Announcements





MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG



Fraunhofer
IMWS



European Society for Artificial Organs

ESAO Winter School 2023

List of Speakers

Maria Rosa Aguilar, Spain
George Altankov, Bulgaria
Gerardo Catapano, Italy
Gloria Gallego-Ferrer, Spain
Gilson Kang, South-Korea
Horst Klinkmann, Germany
Yannis Missirlis, Greece
Nuno Neves, Minho, Portugal
Joao Mano, Aveiro, Portugal
Manuel Salmeron-Sanchez, UK
Heinrich Schima, Austria
Dimitrios Stamatialis, The Netherlands
Christian Schmelzer, Germany
Bernd Stegmayr, Sweden
Jörg Vienken, Germany
Viktoria Weber, Austria
Christian Wölk, Germany
Kai Zhang, Germany

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