

ESAO/TERMIS-EU Winter School 2021

*The Bionic Human: Biomaterials, (Bio)Artificial
and Bioengineered Organs, and Cybernetics for
the Future of Regenerative Medicine*

ONLINE

February 24-26, 2021



Scientific Committee

Pedro Baptista (ESAO)
Cecile Legallais (ESAO)
Piotr Ladyzynski (ESAO)
Bart Spee (ESAO)
Gloria Gallego Ferrer
(ESAO)

Heinrich Schima (ESAO)
Nuno Neves (ESAO)
Martijn van Griensven (TERMIS-EU)
Zuzana Koci (TERMIS-EU)
Fokko Wiering (IMEC, EKHA,
KIDNEW)

Our next Winter School was to be held in the town of Jaca, Spain the first capital of the Kingdom of Aragon and a skiing hotspot in the Pyrenees. However, the current pandemic situation made us switch it to an ONLINE event, since right now it is hard to see a path to run it physically.

The motto of next year's school is "***The Bionic Human: Biomaterials, (Bio)Artificial and Bioengineered Organs, and Cybernetics for the Future of Regenerative Medicine***" and will cover in a bottom-up approach the fundamentals in biomaterial science, stem cells and organoids that are making possible the creation and implantation of more complex structures like (bio)artificial and bioengineered organs, and cybernetic parts, enabling the future of regenerative medicine and the generation of Bionic Humans.

This is also the first Winter School co-organized by ESAO and TERMIS, bringing together the prowess and unique perspectives of these two societies into one single program, providing a broad view of regenerative medicine and implantable medical parts/devices/organs. There will be also a special session organized by KIDNEW, the Kidney Health Initiative and The European Kidney Health Alliance that will go in-depth into the need of new kidney dialysis innovations and implantable (bio)artificial kidneys.

The organizing committee is managing to attract world-class speakers from Europe and other continents who will give talks on the state-of-the-art in these different fields. The meeting will also provide a nice platform for presentation of work of regular participants during two online poster sessions.

The Winter School will take place from February 24-26, 2021. Registration and poster abstract submission will be open starting November with reduced fees for yESAO and ESAO, and TERMIS members at our website <https://www.esao.org/events/winterschool/>. **Abstract submission will be open until January 31st 2021.**

We invite you heartily to join our next ESAO/TERMIS Winter School and hope to see you next year in The Cloud! Please save the date in your agendas!

With warm regards from the Scientific Committee,

Pedro M. Baptista, Cecile Legallais, Piotr Ladyzinski, Bart Spee, Nuno Neves, Gloria Gallego-Ferrer, Heinrich Schima, Martijn van Griensven, Zuzana Koci and Fokko Wiering.

Layout

Total 22 lectures + 2 keynote lectures

We will give the perspective of “**Organoids and Stem Cells**” and “**Biomaterials and bioprinting**” necessary to develop “**(Bio)Artificial**” and “**Bioengineered Organs**” of the future. Then, provide a broad view of “**Current cybernetic technology and human integration**”. We will co-organize the event with **TERMIS-EU** and we will have the **European Kidney Health Alliance (EKHA)** organizing a session to discuss the necessary steps to further advances in dialysis and implantable kidney devices (Fokko Wieringa will chair this).

Hence, we will have:

- 2 keynote speakers
- 2 sessions on “**Organoids and Stem Cells**” - One organized by ESAO and the other by TERMIS-EU
- 1 session on “**Biomaterials and bioprinting**” – Co-organized by ESAO-TERMIS-EU. Nuno Neves will be the liaison between societies on this.
- 1 sessions on “**(Bio)artificial Organs**” - One organized by ESAO and the other by TERMIS-EU
- 1 session on “**Bioengineered Organs**” – organized by ESAO (Pedro Baptista)
- 2 sessions on “**Current cybernetic technology and human integration**” – Organized by ESAO. Our President, Piotr Ladyzinski will organize one of the sessions on current and future cybernetics. The other will be on cardiovascular implantable devices and cybernetic integration (Heinrich Schima).
- 1 special session on “(Bio)artificial Kidneys” – organized by EKHA/KIDNEW (Fokko Wieringa).

Abstract Submission

Abstracts for poster presentations are open until January 31st 2021. Poster presentations will be carried out in 2 virtual sessions with 3-5 minutes “rapid-fire” presentations.

Winners for 3 Poster Awards will be selected (1st prize: 500 EUR; 2nd prize: 300 EUR and 3rd prize: 200 EUR)!

Guidelines for poster submission:

- Abstract max. 400 words including title
- Send your abstract to anita.aichinger@donau-uni.ac.at
- Deadline: January 31st, 2021

Program

Wednesday, February 24th, 2021

15:00 - 15:30 **Welcome & Opening of Winter School**

Chair: Pedro Baptista, Zaragoza

15:30 - 16:20 **Anthony Atala, WFIRM, USA**

16:20 - 17:10 **Neil Harbisson, first human legal cyborg, United Kingdom**

Coffee Break

17:30 -19:30 **Poster Session I**

Chair: ESAO (Gloria Gallego Ferrer)

Thursday, February 25th, 2021

Session 1 “Organoids and Stem Cells I”

Chair: ESAO (Kerstin Schneeberger)

09:00 - 09:50 Matthias Lutolf, Lausanne, Switzerland

09:50 - 10:30 Kerstin Schneeberger, Utrecht, The Netherlands

10.30 – 11.10 Jeffrey Beekman, Utrecht, The Netherlands pending

Session 2 “Organoids and Stem Cells II”

Chair: TERMIS-EU (Martijn van Griensven)

11:10 – 11:50 Dr Michael Monaghan, Trinity College Dublin, Ireland

11:50-12:30 Prof Susan Kimber, University of Manchester, UK pending

Lunch Break

Session 3 “Biomaterials and bioprinting”

Chair: ESAO/TERMIS-EU (Nuno Neves with Zuzana Koci)

14:00 – 14:50 Mario Barbosa, Porto, Portugal

14:50 – 15:30 Prof Nuno Neves, University of Minho

15:30-16:10 Prof Lorenzo Moroni, Maastricht University

Session 4 “(Bio)artificial Organs”

Chair: ESAO (Cecile Legallais)

16:30 - 17:20 Jean-Charles Duclos-Vallee, Paris, France

17:20 - 18:00 TH Berney, Geneva, Switzerland

Coffee Break

18:00 -20:00 **Poster Session II**

Chair: ESAO (Gloria Gallego Ferrer)

Friday, February 26th, 2021

Session 5 “Current cardiovascular implantable medical devices and human integration”

Chair: ESAO (Heinrich Schima)

09:00 – 09:30 Michael Lommel, Berlin, Germany

09:30 - 10:00 Libera Fresiello, Leuven, Belgium

10:00 - 10:30 Martin Maw, Vienna, Austria

10:30 – 11:00 Thomas Schlöghofer, Vienna, Austria

Coffee Break

Session 6 “Current cybernetic technology and human integration”

Chair: ESAO/TERMIS-EU (Piotr Ladyzinski with Martijn van Griensven)

11:20 - 12:10 Prof. Artur Lorens from the World Hearing Center of the Institute of Physiology and Pathology of Hearing (Kajetany, Poland)

12:10 - 13:00 Prof. Miguel Nicolelis, Durham, USA PENDING

Lunch Break

Session 7 “Bioengineered Organs”

Chair: ESAO (Pedro Baptista)

14:00 - 14:50 Harald Ott, Boston, USA

14:50 - 15:30 Alejandro Soto-Gutierrez, Pittsburgh, USA

15:30 - 16:10 Paolo De Coppi, London, UK

Coffee Break

Session 8 “Special Session on (Bio)artificial Kidneys”

Chair: EKHA/KIDNEW (Fokko Wieringa)

16:30 – 17:00 RegMedXB Kidney Moonshot, Roos Masereeuw & Karin Gerritsen,
Utrecht, the Netherlands

17:00 – 17:30 The Kidney Project, Shuvo Roy & Bill Fissel, USA

17:30 – 18:00 Innovations in Dialysis Membranes, Dimitrios Stamatialis, TU-Twente,
the Netherlands

Poster Award Ceremony and Closing remarks

18:00 - 18:30 Pedro Baptista, Zaragoza

Registration & fees

Online by bank transfer only:

www.esao.org/registration-form-esao-winter-school-2021/

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Registration fee

before/after Jan 31, 2021

ESAO/TERMIS-EU Member € 100,- / € 150,-

Non-Member € 150,- / € 225,-

Student € 50,- / € 75,-

SPONSORS

ARAID Foundation

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