



Joint -E S A O – A S A I O
Winter School 2010
21.-23.01.2010

Bioartificial Organs & Cell Therapy
dedicated to the memory of Michael J. Lysaght

A joint activity of the European Society of Artificial Organs
and the American Society for Artificial Internal Organs

Artis Hotel Semmering
2680 Semmering 99
Austria



Mission of the ESAO Winter Schools:

- Provide High level education in specific fields of artificial organs
- “Teach the Teachers”
- Provide interaction among scientific participants in an attractive atmosphere

Scientific Committee:

Chairmen: Dieter Falkenhagen (Krems), Edward F Leonard (New York), Heinrich Schima (Vienna)

Jadranka Buturovic-Ponikvar (Ljubljana), Birgit Glasmacher (Hannover), C. James Kirkpatrick (Mainz), Hans Jörg Meisel (Halle/Saale), Sergey Mikhalovsky (Brighton), Rafael Ponikvar (Ljubljana), Gerhard Rakhorst (Groningen), Rui L. Reis (Caldas das Taipas), Jörg Vienken (Bad Homburg), Beat Walpoth (Geneva), Viktoria Weber (Krems), Jan Wojcicki (Warsaw)

Organizing Committee:

Anita Aichinger (Krems)

Questions regarding this conference may be directed to either the chairs (program and content) or to the congress office (arrangements).

Congress office:

ESAO office: Anita Aichinger
Dr. Karl Dorrek Str. 30, A-3500 Krems
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Dieter Falkenhagen
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This Winter School will examine the interfaces between

- **organ replacement technologies**
- **research in biomaterials**
- **tissue engineering**
- **regenerative medicine**
- **cell therapy**

Existing artificial organ technologies are almost exclusively based on synthetic biomaterials. New biomaterials research is largely devoted to understanding and developing improved interfaces between artificial materials and biological cells and molecules. Tissue engineering is centered on the directed growth of cells on surfaces and on constructs that include so-called “scaffolds.” Regenerative medicine explores tissue regeneration by the stimulation of growth of both endogenous and exogenous cells, including stem cells. While each of these disciplines contains an energetic and diverse scientific base, none are centrally focused on the development of bioartificial replacements for major internal organs.

This meeting aims to explore and exploit the connections between these scientific bases in order to address directly the possibilities for less artificial, more biological organ replacements.

The meeting will comprise a diverse mix of scientists whose work contributes to the development of bioartificial organs.

Homepage: www.esao.org/winterschool

Thursday, January 21

6.00-7.40 p.m.

6.00- 6.15 p.m. Welcome
E. Leonard, D. Falkenhagen, B. Walpoth

Chairs: B. Walpoth, H. Schima

6.15- 6.25 p.m. E. Leonard
A tribute to Michael Lysaght

6.25- 7.10 p.m. K. Healy
The future of hES and hiPS cells in hybrid artificial
organs and tissue models

7.10- 7.40 p.m. G. Dinhobl
The Semmering railway: An early masterpiece of
engineering and world cultural heritage

7.40 - 10.30 p.m. Group Dinner

Friday, January 22

Morning session I:

8.30–10.30 a.m.

Chairs: E. Leonard, J. Kirkpatrick

8.30- 9.15 a.m. L. Niklason
Lung regeneration

9.15-10.00 a.m. J. Butcher
Natural engineering of the heart – developmental
biology based paradigms for regenerative
medicine

10.00.-10.30 a.m. Coffee Break

Morning session II:

10.30 a.m.-12.30 p.m.

Chairs: R. Reis, J. Wojcicki

10.30-11.00 a.m. G. Schmitz
Cell-therapy as a new tool in therapeutic medicine

11.00-11.30 a.m. C.J. Kirkpatrick
Learning about mechanisms of regeneration from
co-culture systems

11.30-12.00 a.m. G. Steinhoff
Cell therapy in cardiac diseases

12.00-12.30 p.m. B. Walpoth
Vascular tissue engineering

Evening session:

5.00-8.30 p.m.

Chairs: B. Glasmacher, V. Weber

5.00- 5.45 p.m. D. Taylor
Building organs and test beds: one stem cell at a time

5.45- 6.30 p.m. R.L. Reis
New interdisciplinary approaches for tissue engineering
of bone and other tissues

6.30- 7.00 p.m. Coffee break

7.00- 8.30 p.m. Round Table: Regulatory affairs in cell therapy
Chairman: J. Vienken
C. Herbst, J. Kurz, St. Nehrer, K. Pinkernell

8.30-10.30 p.m. Group Dinner

Saturday, January 23

Morning session I:

8.30–10.30 a.m.

Chairs: D. Falkenhagen, R. Ponikvar

8.30-9.15 a.m. E. Leonard
Governing theory and methods for the perfusion
of 3-dimensional tissue constructs

9.15-10.00 a.m. S. Nigam
Development and cell based approaches to tissue
engineering of the kidney

10.00-10.30 a.m. Coffee Break

Morning session II:

10.30 a.m. - 12.45 p.m.

Chairs: S. Mikhalovsky, J. Meisel

10.30-11.00 a.m. W. Zimmermann
Cardiac muscle engineering and repair

11.00-11.30 a.m. F. Emmrich
Cell therapy in stroke

11.30-12.00 a.m. St. Nehrer
Tissue engineering in cartilage repair

12.00-12.30 p.m. J. Meisel
Cellular options for intervertebral disc repair

12.30-12.45 p.m. S. Deepti
Special approach for chondrogenesis of human
mesenchymal stem cells on supermacroporous
cryogels

Afternoon session:

5.00 – 7.15 p.m.

Chairs: G. Rakhorst, J. Ponikvar

5.00-5.30 p.m. A. Kumar
Supermacroporous cryogel applications for
cell therapy

5.30-6.00 p.m. Nuno M. Neves
From biomaterials to (nano)structured scaffolds
in the engineering of connective tissues

6.00-6.30 p.m. D. Falkenhagen
Bioartificial support in liver diseases

6.30-7.00 p.m. St. Mitzner
Cell therapy in sepsis

7.00-7.15 p.m. H. Schima: Concluding remarks

7.15-10.30 p.m. Group Dinner

List of Speakers and Chairpersons

Jonathan Butcher: Department of Biomedical Engineering, 304 Wein Hall, Cornell University, Ithaca, NY 14853-7202, USA

Jadranka Buturovic Ponikvar: Department of Nephrology, University Medical Center Ljubljana, Zaloska 7, 1525 Ljubljana, Slovenia

Singh Deepti: Dept. of Biological Science & Bioengineering, Indian Institute of Technology, Kanpur 208016, India

Günter Dinhl: ÖBB, Bauabteilung, Vienna, Austria

Frank Emmrich: Fraunhofer Institute for Cell Therapy and Immunology IZI in Leipzig, Perlickstraße 1, 04103 Leipzig, Germany

Dieter Falkenhagen: Center for Biomedical Technology, Danube University Krems, Dr. Karl Dorrek Str. 30, 3500 Krems, Austria

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Kevin E. Healy: Departments of Materials Science and Engineering and Bioengineering, 370 Hearst Memorial Mining Bldg., 1760, Berkeley, CA 94720-1760, USA

Christian Herbst: Regulatory, Meinekestrasse 26, 10719 Berlin, Germany

C. James Kirkpatrick: Institute of Pathology, Johannes Gutenberg University, Langenbeckstrasse 1, 55101 Mainz, Germany

Ashok Kumar: Dept. of Biological Science & Bioengineering, Indian Institute of Technology, Kanpur 208016, India

Johann Kurz: Federal Ministry for Health, Radetzkystraße 2, 1030 Wien, Austria

Edward F. Leonard: Chemical and Biomedical Engineering, Columbia University MC 4721, New York, NY 10027, USA

Hans J. Meisel: Clinic for Neurology, BG-Kliniken Bergmannstrost, Merseburger Str. 165, 06112 Halle, Germany

Bart Meyns: Department of Cardiac Surgery, Gasthuisberg University Hospital, Herestraat 49, 3000 Leuven, Belgium

Sergey Mikhailovsky: School of Pharmacy and Biomolecular Sciences, University of Brighton, Cockcroft Building, Lewes Road, Brighton BN2 4GJ, United Kingdom

Steffen Mitzner: University Rostock, Medical Faculty, Rennbahnstrasse 16-17, 18057 Rostock, Germany

Stefan Nehrer: Center for Regenerative Medicine, Danube University Krems, Dr. Karl Dorrek Str. 30, 3500 Krems, Austria

Nuno M Neves: Department of Polymer Engineering, University of Minho, S. Claudio do Barco, 4806-909 Caldas das Taipas, Giumaraes, Portugal

Sanjay Nigam: Department of Pediatrics, University of California, San Diego, 9500 Gilman Dr, La Jolla, CA 92093, USA

Laura E. Niklason: Yale University, P.O.Box 208089, New Haven, CT 06520, USA

Kai Pinkernell: Miltenyi Biotec GmbH, Friedrich-Ebert-Strasse 68, 51429 Bergisch Gladbach, Germany

Rafael Ponikvar: Department of Nephrology, University Medical Center Ljubljana, Zaloska 7, 1525 Ljubljana, Slovenia

Gerhard Rakhorst: University Groningen, Deusinglaan 50, 9713 Groningen, The Netherlands

Rui L. Reis: Department of Polymer Engineering, University of Minho, S. Claudio do Barco, 4806-909 Caldas das Taipas, Giumaraes, Portugal

Heinrich Schima: Center for Biomedical Engineering and Physics, Medical University of Vienna, Währinger Gürtel, 18-20, 1090 Vienna, Austria

Gerd Schmitz: University Hospital Regensburg, Franz-Josef-Strauß Allee 11, 93053 Regensburg, Germany

Gustav Steinhoff: University Rostock, Medical Faculty Schilling Allee 35, 18057 Rostock, Germany

Doris Tayler: University of Minnesota, Center for Cardiovascular Repair, Minneapolis, MN 55105, USA

Jörg Vienken: Fresenius Medical Care, BioScience Department, Else Kröner Strasse 1, 61346 Bad Homburg, Germany

Beat H. Walpoth: Cardiovascular Research, Department of Surgery, HUG Univ. Hospital, 24 rue Micheli du Crest, 1211 Geneve 14, Switzerland

Viktoria Weber: Center for Biomedical Technology, Danube University Krems, Dr. Karl Dorrek Str. 30, 3500 Krems, Austria

Jan M. Wojcicki: Institute of Biocybernetics and Biomedical Engineering P.A.S., Trojdena 4, 02-109 Warsaw, Poland

Wolfram Zimmermann: Department for Pharmacology, University Göttingen, Robert Koch Str. 40, 37075 Göttingen, Germany

Payment procedure

Payment by bank transfer only

IMPORTANT! Any bank charges have to be borne by the sender

Payment terms:

Please make sure to transfer the exact amount. Bank expenses and currency exchange fees will not be covered by the organisation. Please ensure that your First Name and Family Name or Institution/Company and the words **“Registration to ESAO Winter School 2010”** appear on your bank transfer order.

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Dr. Karl Dorrek Str. 30
A-3500 Krems

Account number: 0397-32615/00

Bankcode: 12000

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Obere Landstraße 19
A-3500 Krems, Austria

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Cancellation policy: Until Dec 21/2009, 50% will be reimbursed, after Dec 21/2009 cancellations will not be accepted.

Registration form

Family Name, Title:
First Name:
Institute:
Address:
Postale Code: City: State: Country:
Tel./Fax:
E-mail:

Please register early because the number of participants is limited to 85!

Registration fee (in Euro)

REGISTRATION	before December 21	after December 21
Member of ESAO, ASAIO and OeGMBT:	€200,--	€250,--
Non-Member:	€250,--	€300,--
Students:	€100,--	€150,--
Participants from non-EC East European Countries:	€100,--	€150,--

Please contact the hotel directly for hotel reservation:

Accommodation

Price including breakfast and dinner for one night

Hotel Artis € 68,-- price for single room
€124,-- price for double room

Hotel Artis, 2680 Semmering 99, Austria
Telephone: +43 (0)2664 8641-512
Fax: +43 (0) 2664 8641-553
e-mail: sales@artis-semmering.at
Homepage: www.artis-semmering.at

Please fill in the form and reply to:

ESAO office (office times 8.00 a.m.-12.00 a.m.):

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Travel information:

by car:

Semmering is situated 7 km from the S6 Semmering motorway and 90 km from Vienna. (<http://www.touristcam.at/routenplaner.php>)

by train:

More than 20 trains stop every day at the Semmering railway station, coming from Vienna and Graz. (<http://www.oebb.at>)

by airplane:

The Vienna airport is only 100 km from Semmering.

Hotel information: Artis Hotel Semmering

Telephone: ++43 (0) 2664 8641-512
Telefax: ++43 (0) 2664 8641-553
e-mail: office@artis-semmering.at
homepage: <http://www.artis-semmering.at>

Semmering:

The Semmering resort is about 1000m above sea level in a marvellous mountain location. The surroundings include not only picturesque mountains and stone formations, but also the world's first mountain railway, which was constructed in the 1850s and is part of the Unesco world heritage. With 16 spectacular viaducts, 15 tunnels, 142 vertical structures, 129 bridges, modelled rock faces and supporting walls, it was built in only six years. The densely forested region has been developed for tourism with classical hotels and villas. Semmering became a famous meeting area for monarchical society and hosted as well such prominent visitors as Schnitzler, Werfel, Kokoschka, Brahms, Mahler, Schönberg, and Webern. This historic atmosphere has been preserved.

Semmering is also famous for Winter sports and Summer hiking. The Semmering ski resort, which hosts World Cup alpine skiing events, is located at the pass and extends into the Hirschenkogel mountains.