



Leopoldina
Nationale Akademie
der Wissenschaften

Physiology and Pathophysiology 2023

Leopoldina Symposium

In-person conference organised by the American Physiological Society's FUNCTION, the German National Academy of Sciences Leopoldina and Academia Europaea's Cardiff University Knowledge Hub

Tuesday 7th March 2023 / 10:00 – 19:30
Wednesday 8th March 2023 / 09:15 – 17:00



German National Academy of Sciences Leopoldina
Jägerberg 1, 06108 Halle (Saale), Germany



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EDITORIAL

Physiology and Pathophysiology 2023

Ole H. Petersen

Registration

There is no attendance fee, but registration is required:

<https://www.eventbrite.co.uk/e/physiology-pathophysiology-2023-symposium-tickets-444527382367>

Programme

Day 1: 7th March 2023

10:00 Welcome

Armin Kurtz ML, *University of Regensburg*, (Member of the Leopoldina's Senate and Chair of the Section on Physiology and Pharmacology/Toxicology)

Ole H Petersen ML FRS MAE, *Cardiff University* (Editor-in-Chief, *Function*)

10:10 General Physiology

Chairs: Gerhard Burckhardt ML, *University of Göttingen* and Liliana Schaefer, *Goethe University Frankfurt*

Drugs and trafficking: lessons from calcium channels

Annette Dolphin FRS MAE, *University College London*

10:35

Membrane protein moonlighting: never say never!

Dennis Brown MAE FAPS, *Harvard Medical School*

11:00

Extracellular nucleotides

R Alan North FRS MAE, *University of Manchester*

11:25 Coffee break

11:45

Store-operated calcium channels in health and disease

Anant Parekh FRS MAE, *National Institute of Environmental Health, NIH, North Carolina*

12:10

Cantu Syndrome: From a single ion channel to multi-organ pathologies

Colin Nichols FRS, *Washington University School of Medicine in St Louis*

12:35 General discussion

Discussion Leaders: Liliana Schaefer and Gerhard Burckhardt

13:15 Lunch break

14:15 Neuroscience

Chairs: Gemma Modinos, *King's College London* and Robert Zorec MAE, Member of the Slovenian Academy of Sciences and Arts, *University of Ljubljana*

Brain rhythms, language rhythms and reading
Usha Goswami ML FRS, *University of Cambridge*

14:40

Neuronal mechanisms underlying learning
Carl Petersen MAE, *Brain Mind Institute EPFL, Lausanne*

15:05

Challenging "inflammaging" of the brain: glial paralysis, rather than reactivity defines brain ageing
Alex Verkhratsky ML MAE, *University of Manchester*

15:30 Coffee break

15:50

How glutamate and GABA 'became' transmitters
Jon Storm-Mathisen, Member of the Norwegian Academy of Science and Letters, *University of Oslo*

16:15 – 17:00 General Discussion

Discussion Leaders: Robert Zorec and Gemma Modinos

18:30 – 19:30 Leopoldina – Lecture

Chair: Armin Kurtz ML, *University of Regensburg*

How alcohol poisons the cells of the pancreas



Ole H Petersen ML FRS MAE, *Cardiff University*

Day 2: 8th March 2023

09:15 Cardiovascular Physiology

Chairs: Teresa Pérez Garcia, *University of Valladolid* and Calum Wilson, *University of Strathclyde*

Calcium and CaMKII: Pleiotropic signaling in cardiac function and disease

Donald M Bers, *University of California, Davis*

09:40

A look into brain blood vessels: When they work and don't

Mark T Nelson, Member of NAS, *University of Vermont*

10:05

Capillary-mitochondrial oxygen transport: Paradigm shifts

David Poole FAPS, *Kansas State University*

10:30 Coffee Break

11:00

Macro- and microvascular remodeling in pulmonary hypertension

Wolfgang Kübler FAPS, *Charité - Universitätsmedizin Berlin*

11:25 General Discussion

Discussion Leaders: Calum Wilson and Teresa Pérez Garcia

12:15 Lunch Break

13:00 Kidney and Fluid Balance

Chairs: Armin Kurtz ML, *University of Regensburg* and Andras Spät MAE, Member of the Hungarian Academy of Sciences, *Semmelweis University Budapest*

Salt and Kidney Metabolism

Allen Cowley FAPS, *Medical College Wisconsin*

13:25

Getting the most into (and out of) your kidneys

Ora Weisz FAPS, *University of Pittsburgh*

13:50 General Discussion

Discussion Leaders: Andras Spät and Armin Kurtz

14:15 The pancreas as a physiological and pathophysiological model

Chairs: Pawel Ferdek, *Jagiellonian University in Krakow* and Oleg Gerasimenko, *Cardiff University*

Pathological processes in exocrine pancreas: ex vivo studies
Julia Gerasimenko, *Cardiff University*

14:40

New challenges in the management of acute pancreatitis
Peter Hegyi MAE, *Semmelweis University Budapest*

15:05 Coffee Break

15:25

Pancreatic carcinogenesis and pancreatic functions
Monika Jakubowska, *Jagiellonian University in Krakow*

15:50

Synergising reductionist and empirical developments to improve treatment outcomes for pancreatic cancer
John Neoptolemos MAE, *University of Heidelberg*

16:15 General Discussion

Discussion Leaders: Oleg Gerasimenko and Pawel Ferdek

17:00 End of Meeting

FAPS: Fellow of the American Physiological Society

FRS: Fellow of the Royal Society

MAE: Member of the Academia Europaea

ML: Member of the German National Academy of Sciences Leopoldina

NAS: National Academy of Sciences