

Symposium, 21st – 22nd April 2022

Celebration of the
100th
anniversary

of Professor August Krogh's
Nobel Prize in Physiology
and Medicine 1920

Novo Nordisk Foundation,
Tuborg Havnevej 19,
2900 Hellerup,
Denmark

Organizer

August Krogh Club,
University of Copenhagen
www.akc.ku.dk



Welcome

The August Krogh Club welcomes you to a celebration of the 100th anniversary of the Nobel Prize in Physiology and Medicine awarded to Professor August Krogh on 28th October 1920

Professor Schack August Steenberg Krogh was one of the most influential Danish scientists of the 20th century. Among his many contributions to science, he discovered the mechanism of pulmonary gas exchange and the active regulation of blood flow through capillaries. He also pioneered the study of exercise physiology and the use of radioactive isotopes in physiology, and he founded the production of insulin in Scandinavia. But perhaps most importantly, he established the Danish research tradition within physiology and metabolism that is still active today.

The aim of this symposium is to gather colleagues within the fields of physiology and metabolism in order to share insights from the past, to illuminate present knowledge, and to provide a glimpse of what may be to come.

The August Krogh Club idea was fostered by researchers associated with the Department of Nutrition, Exercise and Sports, the Department of Biology, and the Natural History Museum of Denmark at the University of Copenhagen. The August Krogh Club was founded in 2011 and it is supported financially by the University of Copenhagen and the Novo Nordisk Foundation. The vision for the August Krogh Club is to facilitate and increase visibility of research in the fields of physiology and metabolism.

Through initiatives such as meetings, seminars and symposia, the August Krogh Club is a platform within the field of physiology and metabolism from which the Danish research tradition in physiology can be maintained and expanded in the recognition that: “If we have seen further, it is only by standing on the shoulders of giants” (Isaac Newton (1675)).


PROGRAM - August Krogh Symposium 2022

DAY 1 – THURSDAY 21ST APRIL

08:15 - 09:00 Arrival and registration. Beverages and a breakfast roll/pastry will be available

09:00 - 09:20 Opening
Welcome by Head of the August Krogh Club, Professor Jørgen F.P. Wojtaszewski, Department of Nutrition, Exercise and Sports, University of Copenhagen

SESSION I Chairs: Professor Tobias Wang, Aarhus University and Professor Emeritus Erik Hviid Larsen, University of Copenhagen

09:20 - 10:00 *August Krogh and a fulfilment of Alfred Nobel's will*
 Professor Erling Norrby, the Royal Swedish Academy of Sciences

10:00 - 10:40 *Marine fish osmoregulation has implications for global oceanic carbon cycling*



Professor Martin Grosell, Rosenstiel School of Marine and Atmospheric Science, University of Miami

10:40 - 11:10 **Coffee break**

SESSION II Chairs: Professor Hans Ramløv, Roskilde University and Professor Angela Fago, Aarhus University

11:10 - 11:50 *Lung diffusion and ventilatory control during exercise: from August and Marie to present*



Professor Emeritus Jerome Dempsey, Department of Population Health Sciences, University of Wisconsin

11:50 - 12:30 *A cool fish tale - how unrelated Antarctic notothenioids and Arctic cods evolved the same solution to avoid freezing*



Professor Christina Cheng, Department of Evolution, Ecology and Behavior, University of Illinois

12:30 - 13:30 **Lunch**

SESSION III Chairs: Professor Erik Richter, University of Copenhagen, and Senior Researcher Helga Ellingsgaard, Rigshospitalet

13:30 - 14:10 *Insulin at 100: its mechanism of action and alterations in disease*



Professor, MD, C. Ronald Kahn, Joslin Diabetes Center, Harvard School of Medicine

14:10 - 14:50 *Exercise metabolism: implications for performance and health [virtual presentation]*



Professor of Physiology Mark Hargreaves, University of Melbourne

14:50 - 15:20 **Coffee break**

SESSION IV

Chairs: Professor Louise Torp Dalgaard, Roskilde University and Associate Professor Thomas Jensen, University of Copenhagen

15:20 - 16:00



Beyond the August Krogh principle: from "Ideal Animals" to "Pattern Recognition and Syntheses"
[virtual presentation]

Professor Warren Burggren, Department of Biological Sciences, University of North Texas

16:00 - 16:40



Insulin lost in translation

Professor Bart Roep, Leiden University Medical Center

16:40 - 17:00 Closing remarks

17:15 - 22:00

Dinner at the restaurant **Address**, Tuborg Havnepark 15, Hellerup

Entertainment: Lilly Unity – jazz trio with nerve and curiosity.



Dinner talk: Growing up in the shadow of a physiological super-hero

Professor Tobias Wang, Department of Bioscience – Zoophysiology, Aarhus University

DAY 2 – FRIDAY 22ND APRIL

08:15 - 09:00

Arrival. Beverages and a breakfast roll/pastry will be available.

09:00 - 09:20

Opening

Chairs: Professor Michael Kjær, Bispebjerg Hospital and Professor Bente Klarlund Pedersen, Rigshospitalet.

Rector Henrik C. Wegener, University of Copenhagen

Chairman Lars Rebien Sørensen, Novo Nordisk Foundation

Dean Katrine Krogh Andersen, SCIENCE, University of Copenhagen

SESSION V

Chairs: Professor Michael Kjær, Bispebjerg Hospital and Professor Bente Klarlund Pedersen, Rigshospitalet.

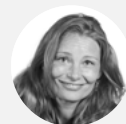
09:20 - 10:00



Skeletal muscle capillarization: what is new since Krogh's discoveries?

Professor Ylva Hellsten, Department of Nutrition, Exercise and Sports, University of Copenhagen

10:00 - 10:40



Unravelling the mechanisms underlying extreme stress tolerance in tardigrades

Associate Professor Nadja Møbjerg, Department of Biology, University of Copenhagen

10:40 - 11:10 **Coffee break**

SESSION VI Chairs: Professor Henriette Pilegaard, University of Copenhagen and Assistant Professor Jakob Grunnet Knudsen, University of Copenhagen

11:10 - 11:50 *Exercise and insulin interaction - when it gets personal(..ized)*



Professor Jørgen F.P. Wojtaszewski, Department of Nutrition, Exercise and Sports, University of Copenhagen, Denmark

11:50 - 12:30 *Respiring mitochondria: born to run*



Director, Professor Darrell Neufer, East Carolina Diabetes & Obesity Institute and Departments of Physiology and Kinesiology, East Carolina University

12:30 - 13:30 **Lunch**

SESSION VII Chairs: Professor Jørn Wulff Helge, University of Copenhagen and Professor Bente Kiens, University of Copenhagen

13:30 - 14:10 *The hyperpnoea of exercise in health: respiratory influences on neurovascular control*



Professor Bill Sheel, School of Kinesiology, University of British Columbia

14:10 - 14:50 *The concept of small artery disease*



Professor Christian Aalkjær, Department of Biomedicine, Aarhus University

14:50 - 15:20 **Coffee break**

SESSION VIII Chairs: Professor Kurt Højlund, University of Southern Denmark and Associate Professor Abigail Mackey-Sennels, Bispebjerg Hospital

15:20 - 16:00 *Living dead: metabolic arrest and the control of biological time [virtual presentation]*



Professor Kenneth B. Storey, Department of Biology, Carleton University

16:00 - 16:40 *Modern therapy of cardio-reno-metabolic disease*



Professor Jens Juul Holst, Novo Nordisk Foundation Center for Basic Metabolic Research, Department of Biomedical Sciences, University of Copenhagen

16:40 - 17:00 Meeting close

17:00 - 17:45 Departure. Beers, soft drinks, and snacks will be available.

Organization committee at the University of Copenhagen

Professor Jørgen F.P. Wojtaszewski,
Department of Nutrition, Exercise and Sports

Professor Bente Kiens,
Department of Nutrition, Exercise and Sports

Associate Professor Nadja Møbjerg,
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Thanks to

The organization committee thanks professor emeritus Erik Hviid Larsen (UCPH), professor Hans Ramløv (RUC), professor Jørn Wulff Helge (UCPH), professor Tobias Wang (AU), and professor Ylva Hellsten (UCPH) for inspirational input to the symposium program.

Supported by:

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