

Education

1988 Dr.med.sci, Faculty of Health Sciences, University of Copenhagen, Denmark

1978 MD, Faculty of Health Sciences, University of Copenhagen, Denmark

CURRENT POSITION(S)

2007 – Ordinary Professor of Translational Neurobiology, University of Copenhagen, Denmark

1998 – Ordinary Professor of Clinical Neurophysiology, University of Copenhagen, Denmark

1994 – Consultant, Department of Clinical Neurophysiology, Rigshospitalet, Copenhagen, Denmark

2004 Visiting professor at Klinikum Charité, Humboldt University, Berlin, Germany

PREVIOUS POSITIONS

1978 – 1980 & 1988 – 1994 Clinical education at Copenhagen University Hospitals

1993 Certified specialist in clinical neurophysiology

FELLOWSHIPS AND AWARDS

2017 Member of Academia Europaea

2016 Niels A. Lassen Prize

2004 Humboldt Research Award in Medicine (Alexander von Humboldt Stiftung, Germany)

1992 Arnold Friedman Distinguished Clinician/Researcher Award (American Headache Association)

1985 – 1986 Fulbright Scholarship, Department of Biophysics, New York University, NY, USA

1980 – 1985 Junior and Senior Research Fellow, Department of Physiology, University of Copenhagen and Department of Biophysics, New York University

1982 Harold G. Wolff Award (American Headache Association)

1982 Award of the Danish Neurological Society and Danish Migraine Society

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

1994 – 2018 I have trained 21 PhD students in my lab and hospital department, most of whom now have leading positions at hospitals in Copenhagen or pharmaceutical companies, and 1 former PhD-student is now an assistant professor at the University of Copenhagen. I was a member of the board of directors setting up “The Graduate School for Neuroscience” at University of Copenhagen in 1996 and have served continuously on its board since then. I have arranged numerous PhD courses on “Brain energy metabolism and blood flow” and most recently (in 2019) I organized and directed a PhD-course on 'Preclinical Research Models and Methods'. I have trained 13 postdocs and more than 40 bachelor and master students at the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark.

TEACHING ACTIVITIES

2007 – Teaching basic neuroscience and acting supervisor for medical students' bachelor and master theses in translational neurobiology as part of my job as professor of translational neurobiology at the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark.

1994 – Teaching neurology and clinical neurophysiology and acting supervisor for clinically relevant bachelor and master theses as part of my job as clinical professor at the Faculty of Health and Medical Sciences, University of Copenhagen, Denmark.

INSTITUTIONAL RESPONSIBILITIES (selected for the last 15 years)

2018- 2019 Director of International Course on Brain Homeostasis and Neurovascular Coupling under the organization 'The CAJAL Advanced Neuroscience Training Programme, FENS and IBRO sponsored.

2014 – Director of the Lundbeck Foundation Research Initiative on Brain Barriers and Drug Delivery, University of Copenhagen

2009 – 2018 Member of Board of Directors, Center for Healthy Aging, University of Copenhagen

2007 – Member of Board of Directors, Committee for Neurology and Clinical Neurophysiology, Capital region of Denmark

1998 – 2018 Member/Chair for Committees assessing 12 full professorships at University of Copenhagen

1998 – 2018 Member of Committees or panels recommending professor- or directorships at Baylor College of Medicine, Houston Texas; University of Rochester, Rochester, NY; University of Maryland, MD; Harvard University, Massachusetts; UCSD, San Diego; Max-Planck Institute for the Max-Planck Society; University of Calgary and University of Montreal, Canada; University of Tel Aviv, Israel.

2010 – 2016 Member of the Research Strategy Faculty Committee, University of Copenhagen

2003 – 2007 Chairman of Strategic Brain Research Program at University of Copenhagen

2003 – Founding member of the steering committee for COSBID, a large multi-centre study of the importance of brain injury depolarization for the outcome of patients with trauma, haemorrhage and stroke (www.cosbid.org)

COMMISSIONS OF TRUST

2016 – Member of International Scientific Advisory Board Member for IBS Center for Neuroscience Imaging Research, Sungkyunkwan University, South Korea

2009 – International Scientific Advisory Board Member for Max-Planck Institute for Cognitive Neuroscience, Leipzig

2009 – 2018 Editor-in-chief, Journal of Cerebral Blood Flow & Metabolism

1998 – 2018 Examiner of numerous PhD and dr.med.sci-theses from universities in Denmark, 2 from France (University of Caen and University of Paris) and 2 from Norway (University of Oslo)

1998 – 2018 Review Board for grant applications numerous times for Bi-national Science Foundation (USA – Israel), Third World Academy of Science; Grant Academy of Czech Republic; The Migraine Trust, UK; Wellcome Foundation, UK; Suisse Research Grant Agency; Medical Research Council, UK; Royal Society, UK; German Research Foundation (Deutsche Forschungsgemeinschaft); French, Belgian and Dutch foundations.

2008 – 2014 International Scientific Advisory Board Member, Max-Planck Institute for Neurology, Cologne, Germany

2009 – 2014 Member of Transatlantic Network of Excellence funded by Fondation Leducq

2006 – 2009 Editorial Board, Journal of Cerebral Blood Flow & Metabolism

2008 – 2010 Editorial Board, Neuroimage

2000 – 2005 Editorial Board, Liaison section, Clinical Neurophysiology

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

1988 – Member, Society of Neuroscience, USA

1988 – Member, Danish Society of Neuroscience

1981 – Member, International Society of Cerebral Blood Flow & Metabolism

MAJOR COLLABORATIONS

- Within the framework of the Lundbeck Foundation Research Initiative for Brain Barriers and Drug Delivery (www.RIBDD.dk) we collaborate with professors Thomas Lars Andresen at Danish Technical University, Kristian Strømgaard and Birger Brodin at the University of Copenhagen at Torben Moos at Aalborg University on the blood-brain barrier (BBB). We build mathematical models of capillary permeability with Henrik Flyvbjerg and his group at Danish Technical University.
- Internationally, we collaborate with professor Anna Devor and her group at Department of Bioengineering, University of California in San Diego on developments of two-photon microscopy under the NIH-BRAIN initiative and funded on our side by the Lundbeck Foundation.
- Since 2003 we have been part of the so-called COSBID network (Cooperative study of Brain Injury Depolarizations (<http://www.cosbid.org/>)). The international collaboration includes network members in various combinations in both clinical and animal experimental studies.
- National collaboration is established with a large group of scientists at the Center for Healthy Aging on the mechanisms of cognitive decline in brain aging including both animal experimental and human research (<https://healthyaging.ku.dk/>).

Invited talks since 2010

2019 Neurovascular biology of capillary control, University of Bordeaux, France, 2019.

2019 The blood-brain barrier in acute neurological disorders. NICIS-USA, Washington DC, USA.

2018 I promoted my group members for invited talks at the Gordon Research Conference on Brain Barriers, at Cerebral Blood Flow meeting at UCSD, and at the Society for Neuroscience meeting in San Diego.

2018 Cortical spreading depression and migraine. European Headache Forum, Florence.

2017 *Key note lecture*: Conceptual shifts in cerebral blood flow regulation. 28th International Symposium on Cerebral Blood Flow, Metabolism and Function, Berlin

2017 Gamma activity, oxygen consumption and blood flow regulation in healthy aging. 28th International Symposium on Cerebral Blood Flow, Metabolism and Function, Berlin

2017 Local control of brain blood flow by penetrating arterioles and capillaries. Lund, Sweden.

2017 *Keynote lecture*: Local control of arteriolar and capillary blood flow in health and disease. 14th Conference on Acute Neurovascular Event after Subarachnoid Hemorrhage – Vasospasm 2017, LA, USA.

2017 Two-photon microscopy of cerebral capillaries. 20th International Symposium on Signal Transduction at the Blood-Brain Barriers, Krakow.

2017 Neurovascular biology of capillary control. 12th Conference on cerebrovascular biology. Melbourne.

2016 Brain Microvascular Function *In Vivo* by Pericytes. Gordon Research Conference, Barriers of the CNS.

2016 Blood flow in the brain and its regulation. North American Vascular Biology Organization.

2016 *Key note lecture*. Capillary pericytes regulate cerebral blood flow in health and disease. 19th International Symposium on Signal Transduction at the Blood-Brain Barriers, Copenhagen.

2016 Capillary Pericytes regulate Cerebral Blood Flow. 12th Conference on Brain Energy. Hong Kong.

2016 Blood flow regulation. Institute of Neurology, University College London, 2016.

2016 Neurophysiology of control of brain blood flow and metabolism. Brain Conference, Seoul, Korea.

2016 Conceptual shifts in cerebral blood flow regulation. VASCOG 2016, Amsterdam, Holland

2016 Local control of brain blood flow by capillaries, Marie Curie Initial Training Network, Lubeck

2016 Pericytes in Neuroinflammation. Neuroscience in Intensive Care Symposium, Paris

2016 *Key note lecture*: The neurovascular unit. Dutch Cardiovascular conference, Nijmegen, Holland.

2016 Brain Pericytes. Gordon Research Conference on Barriers of the CNS, NH, USA

2015 Two-photon microscopy. Neurosciences in Critical Care Symposium, Institute Pasteur, Paris

2015 *Keynote lecture*: Brain blood flow and energy metabolism. Hotchkiss Brain Institute, Calgary

2015 Brain energy supply and metabolism. Federation of European Physiological Societies, Lithuania

2015 Brain blood flow and energy use. Ludwig-Maximilians-University Munich Medical Center

2015 Brain blood flow and energy metabolism. Hungarian Academy of Sciences, Hungary

2015 Spreading depression and astroglial calcium waves. Brain'15, Vancouver

2014 Cerebral blood flow and oxygen use. Symposium on Neuroprotection. Magdeburg, Germany

2014 Cortical spreading depression. Institute Pasteur Paris, France

2014 Vascular pathophysiological events. INSERM Center de Psychiatrie et Neurosciences. Paris

2013 Brain Energy Metabolism. International Society for Neurochemistry, Cancun Mexico

2013 Brain Blood Flow and Oxygen Consumption. Symposium, University of Iowa, USA

2013 Cortical spreading depolarization. Scandinavian Anesthesiology Congress, Turku, Finland

2013 Brain blood flow and energy metabolism. The Norwegian Academy of Science, Oslo

2012 Brain Oxygen Consumption. Genome Instability in Aging and Brain Disease. Oslo, Norway

2011 How does blood flow relate to brain activity? 31st Annual Meeting of the Australian Neuroscience

2010 Control of brain blood flow. *Killam Speaker*, Montreal Neurological Institute, Canada

2010 Neurovascular and neurometabolic coupling in rodent brain. University of Montreal, Canada

2010 Does BOLD fMRI reveal pseudoneural activity? University of Glasgow, UK

2010 Cortical spreading depression in human brain cortex. Hacettepe University, Ankara, Turkey

2010 Cerebral blood flow and energy metabolism. 7th FENS Forum. Amsterdam, Holland

2010 Neurometabolic coupling. 9th Conference on Brain Energy Metabolism. Budapest, Hungary

2010 Emerging Techniques in Neuroscience. Kavli Institute for Theoretical Physics, Cal., USA

2010 Hemodynamics and electrophysiology. 29th Congress of Clinical Neurophysiology, Kobe, Japan