

The 2nd NO-AD

International Seminar

on Alzheimer's Disease and Ageing

20th Oct 2021, Oslo, Norway

2nd NO-AD International Seminar on Alzheimer's Disease and Ageing

Date: 20 October 2021 (08:15-17:00, Central European Time/CET)

Website: <https://noad100.com/2021/09/21/welcome-to-attend-the-2nd-no-ad-meeting-20th-oct-2021-at-the-akershus-university-hospital-norway/>

Venue: zoom and on site (Seminarrom S104.016, Akershus University Hospital, 1478)

Organizers: Evandro Fei Fang (University of Oslo), Martin Vyhnaek (Charles University), Noel Buckley (University of Oxford), Janet Jianying Zhang (University of Oslo)



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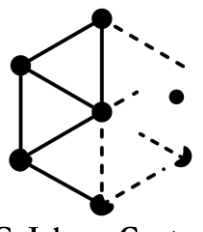
UiO



Oxford



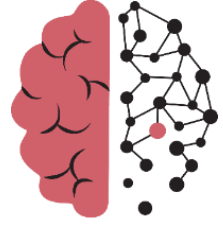
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K.G. Jebsen Centre for Alzheimer's Disease, NTNU



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AKERSHUS UNIVERSITETSSYKEHUS

2nd NO-AD International Seminar on Alzheimer's Disease and Ageing

Wednesday, October 20, 2021

8:15 a. m. – 5:00 p. m. (CET)

Ahus S1: Seminarrom S104.016 & Zoom meeting

Session/Chair	Time		Details
	08:15 - 08:30	Coffee Welcome and Introduction	
Session 1: Mechanisms of AD part 1 Chairs: Evandro Fang and Martin Vyhánek	08:30 - 09:30	Lecture 1 (Keynote) To be introduced by EFF	Nancy Ip (HKUST) ' Biomarker development and genome-editing strategies for Alzheimer's disease diagnosis and treatment '
	09:30 - 10:00	Lecture 2 To be introduced by EFF	Alejo J Nevado-Holgado (Oxford) ' Artificial Intelligence in Drug Target Discovery for Alzheimer's Disease '
	10:00 - 10:30	Lecture 3 To be introduced by MV	Evandro Fang (Ahus, UiO) ' Turning up the NAD⁺-mitophagy axis to treat Alzheimer's disease and the use of AI in related drug development '
	10:30 – 11:00	Coffee break	
Session 2: Mechanisms of AD part 2 Chairs: Janet Zhang and Liu Shi	11:00 - 11:30	Lecture 4 To be introduced by LS	Noel Buckley (Oxford) ' Modelling Alzheimer's in a dish – how far have we come? '
	11:30 - 12:00	Lecture 5 To be introduced by JZ	Linda Hildegard Bergersen (UiO) ' Exercise and AD '
	12:00 - 12:15	Short talk from student To be introduced by JZ	Katerina Cechova (CU): ' Brain-derived neurotrophic factor (BDNF) in aging and Alzheimer disease '
	12:15 - 13:30	Lunch and mingling	
Session 3: AD clinical diagnosis, treatments, and biomarkers Chair: Tormod Fladby	13:30 - 14:00	Lecture 6 To be introduced by TF	Martin Vyhánek (CU) ' Subjective cognitive complaints - part of normal ageing or the beginning of Alzheimer's disease? '
	14:00 - 14:30	Lecture 7 To be introduced by TF	Tormod Fladby (Ahus, UiO) ' Challenges in early AD Diagnostics '
	14:30 - 15:00	Lecture 8 To be introduced by TF	Jan Laczó (CU) ' Spatial navigation in Alzheimer disease '
	15:00 - 15:30	Lecture 9 To be introduced by TF	Liu Shi (Oxford) ' Replication study of plasma biomarkers relating to Alzheimer's pathology '
	15:30 - 15:45	Coffee break	
Session 4: AD and novel treatments Chairs: Martin Vyhánek and Evandro F. Fang	15:45 - 16:00	Short talk from student To be introduced by MV	Domenica Caponio (UiO) ' Changes of mitophagy in the AD human brain '
	16:00 - 17:00	Lecture 10 (Keynote) To be introduced by EFF	Li-Huei Tsai (MIT) ' Non-invasive sensory stimulation to induce gamma entrainment and treat Alzheimer's disease '

Acknowledgement

The **Validation of specific mitophagy biomarkers across Alzheimer's disease continuum** benefits from a € 1 404 000 grant from Iceland, Liechtenstein and Norway through the EEA Grants and the Technology Agency of the Czech Republic within the KAPPA Programme.

Iceland 
Liechtenstein
Norway grants

Programme **Kappa**

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This event has been made possible also through generous support from

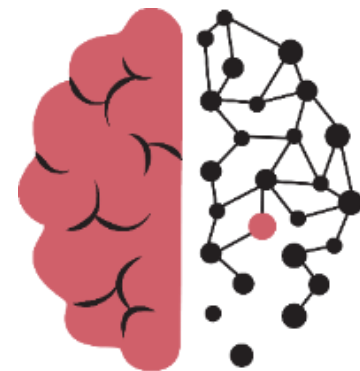


(Images from nasjonalforeningen, KAPPA).



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<http://mitophagyad.eu/>



NO-AD

www.noad100.com

2nd NO-AD International Seminar on Alzheimer's Disease and Ageing

Keynote Speaker: **About Prof. Dr. Nancy Ip**



Photo from HKUST

Research Topics: Biomarker development and genome-editing strategies for Alzheimer's disease diagnosis and treatment

Biography:

Prof. Nancy Ip is currently the Vice-President for Research and Development, The Morningside Professor of Life Science, and the Director of the State Key Laboratory of Molecular Neuroscience at The Hong Kong University of Science and Technology (HKUST). She received her PhD degree in Pharmacology from Harvard University, after which she held the position of Senior Staff Scientist at Regeneron Pharmaceuticals Inc. in New York. Since joining HKUST in 1993, she has served as the Dean of Science, Director of the Biotechnology Research Institute, and Head of the Department of Biochemistry.

Prof. Ip's major research interests are in neural development and function, as well as drug discovery for neurodegenerative diseases such as Alzheimer's disease. She is well-known for her seminar discoveries in the biology of neurotrophic factors, which are proteins that promote the survival, development, and maintenance of neurons in the nervous system. She has also made important contributions towards understanding the molecular mechanisms underlying brain development and synaptic plasticity, and their dysregulation in neurological disorders.

As a highly accomplished researcher, Prof. Ip has published 317 papers with 27,563 SCI citations, and holds 44 65 patents. She has been elected to the Chinese Academy of Sciences, the US National Academy of Sciences, the World Academy of Sciences, the American Academy of Arts and Sciences, the Hong Kong Academy of Sciences, and the Chinese Academy of Medical Sciences. Prof. Ip currently serves as a member of the Leadership Group of the Davos Alzheimer's Collaborative and the World Economic Forum Global Agenda Council, and was an elected Councillor for the Society for Neuroscience and the Senior Editor of the Journal of Neuroscience. Prof. Ip is also the recipient of numerous awards and honors including the National Natural Science Awards, the L'OREAL-UNESCO for Women in Science Award and the 10 Science Stars of China by Nature.

Two recent publications

Brain-wide Cas9-mediated cleavage of a gene causing familial Alzheimer's disease alleviates amyloid-related pathologies in mice. Duan Y., Ye T., Qu Z., Chen Y., Miranda A., Zhou X., Lok K.C., Chen Y., Fu A.K.Y., Gradinaru V. and Ip N.Y. **Nat Biomed Eng.** 2021

Large-scale plasma proteomic profiling identifies a high-performance biomarker panel for Alzheimer's disease screening and staging. Jiang Y., Zhou X., Ip F.C., Chan P., Chen Y., Lai N.C.H., Cheung K., Lo R.M.N., Tong E.P.S., Wong B.W.Y., Chan A.L.T., Mok V.C.T., Kwok T.C.Y., Mok K.Y., Hardy J., Zetterberg H., Fu A.K.Y. and Ip N.Y. **Alzheimers Dement.** 2021

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About the invited speakers



Associate Professor Alejo J Nevado-Holgado has a strong background on Artificial Intelligence and Computational Neuroscience. He is now the lead for AI and Bioinformatics at the Department of Psychiatry of the University of Oxford, where his lab is formed by 10 machine learning and bioinformatics specialists. In addition he also holds a position in the Big Data Institute of the University of Oxford, and he is the Chief of Artificial Intelligence at Akrivia Health, a University spin-off applying AI to secondary mental health EHRs. He and his teams have a strong track record on the applications of AI to the study of neurodegenerative disease and mental health. His current grants amount to approximately £1.9 million dedicated to his group.



Associate Professor Evandro F. Fang is a molecular gerontologist and neuroscientist at the University of Oslo (UiO), Norway. He did his PhD in the Chinese University of Hong Kong, followed by a 6-year postdoc at the National Institute on Ageing with Profs. Vilhelm Bohr and Mark P. Mattson. Since the joining of UiO in Oct 2017, he is leading an international team working on the molecular mechanisms of ageing and age-predisposed Alzheimer's disease (AD). His lab is interested in the roles of NAD⁺ in healthy longevity and neuroprotection, roles of mitophagy/autophagy in AD, and the use of artificial intelligence to develop novel drugs for ageing and AD. He has over 80 publications, including in Cell, Cell Metab., Nature Neurosci, Nature Ageing, and Nature Biomedical Engineering. He has received several awards including the Butler-Williams scholarship (NIA, USA), and the 2020 DKNVS prize for younger researchers (Norway).



Prof. Noel Buckley is a Professor of Neurobiology in the department of Oxford Neuroscience, Medical Science Davison of University of Oxford. He is working on gene networks in neuronal development and disease to uncover how they vary across individuals, thereby causing errors of neurodevelopment or susceptibility to neurodegeneration. His researches also focus on transcription factors that are known regulators of neurodevelopment and neurodegeneration.

<https://www.psych.ox.ac.uk/team/noel-buckley>



Professor Linda Hildegard Bergersen is a professor of neuroscience at the University of Oslo and is also affiliated to the Ageing Centre at the University of Copenhagen. She finished her PhD on "Monocarboxylate transporters in excitable tissues" under the supervision of Professor Ole Petter Ottersen. The Bergersen laboratory is working on the molecular mechanisms on how physical exercise benefits the brain. Studies from her lab show that transient increase of lactate, via exercise, plays a role in brain protection. She and her team are actively working on in-depth molecular mechanisms and to translate this discovery for potential clinical applications.

<https://www.odont.uio.no/iob/english/people/aca/lindabe/index.html>

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About the invited speakers



Dr. Katerina Cechova currently works at the Neurology, University Hospital Motol. She completed her Ph.D. in Neuroscience at the 2nd Faculty of Medicine, focusing on BDNF as a marker of prediction, follow-up, and intervention in neurodegenerative diseases in the Czech Brain Aging Study (www.cbas.cz). Currently, her main research interest is blood-based biomarkers of Alzheimer's disease with a special focus on mitophagy as a promising molecular mechanism underlying the pathogenesis of AD.



Associate Professor Martin Vyhnalek is a cognitive neurologist based in Motol University Hospital, Charles University in Prague, Czech republic. After his medical studies, he has completed a degree in clinical neuropsychology at Montpellier University in France. After returning to Prague, he co-founded the Czech brain aging study – the only Czech longitudinal, observational study on aging and dementia. He is responsible for neuropsychological core and biobanking. His research focuses mainly on early cognitive and neuropsychiatric markers of neurodegeneration and the role of subjective cognitive complaints in early AD diagnostics.



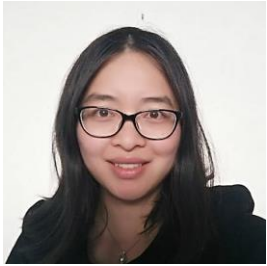
Professor Tormod Fladby is Professor II, Division of Medicine and Laboratory Sciences, Institute of Clinical Medicine, University of Oslo, Norway. He is a neurologist working on Alzheimer's disease (AD). AD is by far the most common cause of dementia, causing 60% or more of the cases. After a dementia diagnosis, loss of self-sustainability and a relentless clinical progression including loss of ambulation, incontinence, dysphagia etc., death follows typically after 8-12 years. Alzheimer's disease dementia is the end stage of a disease continuum, stretching over 2-3 decades prior to dementia. I will present clinical, biomarker and imaging research data from pre-dementia disease cohorts and discuss central pathological features including synaptic pathology and innate immunity. Key questions to be discussed are: What is early diagnosis? How can early diagnostics help us in the drive towards intervention therapy for Alzheimer's disease? <https://www.med.uio.no/klinmed/english/people/aca/tormodfl/index.html>



Prof. Jan Laczó is a Professor of Neurology at the Department of Neurology, Charles University, Second Faculty of Medicine and Motol University Hospital. In his work he focuses on early cognitive changes in normal and pathological aging, including degenerative and non-neurodegenerative diseases leading to dementia, especially on Alzheimer's disease. For this purpose, he uses experimental cognitive tasks derived from animal research, including real-space, two- and three-dimensional computerized spatial navigation tasks. His research also focuses on neural brain correlations of spatial cognition and genetic and environmental factors influencing spatial cognition.

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About the invited speakers



Dr. Liu Shi completed her PhD in Ecole Centrale de Lyon in France. Now she is working as a senior postdoctoral researcher in the department of Psychiatry at Oxford University. Her research focuses on identifying and validating blood based biomarkers in Alzheimer's disease (AD). She has expertise on applying integrative and machine learning methodologies in multi-omics data analysis as well as biomarker development. She has over 20 publications, including in *Alzheimer's & Dementia*, *Journal of Alzheimer's disease* and *Frontier Neuroscience*. In addition, she is enthusiastic about translating fundamental research into reality to ensure people benefit from science. She was an Ideas 2 Impact Fellow at the Oxford Saïd Business School and has participated in Executive MBA courses. Furthermore, she obtained the iCURE grant and acted as the entrepreneurial lead to commercialize a blood test for early diagnosis of AD.

<https://www.psych.ox.ac.uk/team/liu-shi>



Dr. Domenica Caponio joined the Fang group for her postdoc training in 2020 after finished her PhD in the University of Foggia, Italy. At the University of Oslo (UiO), she is working on the effect of mitophagy in neuronal function and resilience against Alzheimer's disease pathologies, like intracellular A β peptides, extracellular A β plaques, and Tau tangles. She uses multiple laboratory models, including *C. elegans*, *Drosophila*, iPSCs, and postmortem human brain tissues to approach these fundamental questions of the human brain. Her current projects cover spatiotemporal characterization of mitophagy and AD pathologies in the AD human brain and mechanisms of transgenerational memory. She has publications in *Nature communications* and *Nature Neuroscience*.

<https://evandrofanglab.com/current-members-2/>

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Keynote Speaker: **About Prof. Dr. Li-Huei Tsai**



Photo from MIT

Research Topics: Non-invasive sensory stimulation to induce gamma entrainment and treat Alzheimer's disease

Biography: Dr. Tsai is the director of the Picower Institute for Learning and Memory at MIT, Picower professor of neuroscience, department of brain and cognitive sciences, and senior associate member, Broad Institute. She received her Ph.D degree from the University of Texas Southwestern Medical Center at Dallas. Dr. Tsai completed her postdoctoral work with Ed Harlow's laboratory at Cold Spring Harbor laboratory and Massachusetts General Hospital. In 1994, Dr. Tsai joined the faculty in the Department of Pathology at Harvard Medical School and was named an investigator of Howard Hughes Medical Institute in 1997. In 2006, she was appointed Professor in the Department of Brain and Cognitive Sciences, and joined the Picower Institute for Learning and Memory at MIT. In 2015, she co-founded the Aging Brain Initiative at MIT. In 2019, she became co-director of the Alana Down Syndrome Center at MIT.

Awards

Outstanding Contributor Award, Alzheimer Research Forum

Alzheimer's Research Consortium

Academician, Academia Sinica

Simons Foundation Autism Research Initiative Award

Member of the National Academy of Medicine

Fellow, American Association for the Advancement of Science (AAAS)

Distinguished Academy Achievement Award, Chinese American Academic and Professional Society

The Mika Salpeter Lifetime Achievement Award

Hans Wigzell Research Foundation Science Prize

Fellow, National Academy of Inventors

Member, American Academy of Arts and Sciences

Recent Publications

Reconstruction of the human blood-brain barrier in vitro reveals a pathogenic mechanism of APOE4 in pericytes. Blanchard JW, Bula M, Davila-Velderrain J, Akay LA, Zhu L, Frank A, Victor MB, Bonner JM, Mathys H, Lin YT, Ko T, Bennett DA, Cam HP, Kellis M, **Tsai LH.**, *Nature Medicine* 2020

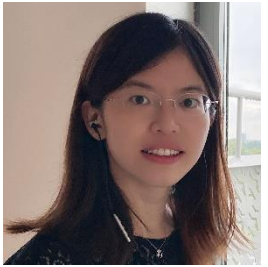
Single-cell transcriptomic analysis of Alzheimer's disease. Mathys H, Davila-Velderrain J, Peng Z, Gao F, Mohammadi S, Young JZ, Menon M, He L, Abdurrob F, Jiang X, Martorell AJ, Ransohoff RM, Hafler BP, Bennett DA, Kellis M, **Tsai LH.** *Nature*, 2019.

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About the organizers



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Dr. Janet Jian-ying Zhang is a clinician scientist who works on oral-brain ageing and sees patients with oral diseases. While a postdoc fellow at the Evandro Fang Laboratory, she is also a junior group leader in Xiangya School of Stomatology, Central South University, China. Her research interests mainly focus on biofilm-associated oral disease, dental regeneration, and oral-brain aging. In Feb 2021, she joined the Fang lab for the postdoc training where she is devoted to unveiling the causes of delirium and how it progresses to Alzheimer's disease via examining several possible molecular mechanisms.



Associate Professor Martin Vyhnálek is a cognitive neurologist based in Motol University Hospital, Charles University in Prague, Czech republic. After his medical studies, he has completed a degree in clinical neuropsychology at Montpellier University in France. After returning to Prague, he co-founded the Czech brain aging study – the only Czech longitudinal, observational study on aging and dementia. He is responsible for neuropsychological core and biobanking. His research focuses mainly on early cognitive and neuropsychiatric markers of neurodegeneration and the role of subjective cognitive complaints in early AD diagnostics.



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