U. of Oslo | U. of Copenhagen | Chinese U. of Hong Kong | Norwegian U. of Science and Technology | K.G. Jebsen Centre for Alzheimer's Disease | Kavli Institute for Systems Neuroscience | NO-Age | NO-AD

The NO-Age and NO-AD Seminar Series 013

'Molecular Mechanisms of ageing and strategies to extend healthy longevity' (tentative)

by

Prof. Brian Kennedy
Ageing Centre, National University of Singapore

at

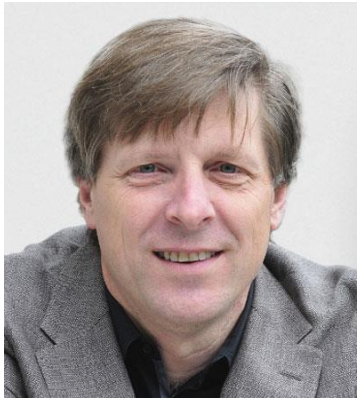
14:00-15:00 (CET), Monday, 15th Feb. 2021

Register in advance for this webinar:
https://uio.zoom.us/webinar/register/WN_J7YNWYdbS7-es3h1Gdcfng

Organizers:
Evandro F. Fang (UiO), Jon Storm-Mathisen (UiO), Menno P. Witter (NTNU),
Lene Juel Rasmussen (KU), W.Y. Chan (CUHK)

Queries: e.f.fang@medisin.uio.no

Previous recorded talks are available here: https://noad100.com/videos-previous-events/



Name: Brian Kennedy
Institute: Ageing Centre, National University of Singapore (NUS)
Email: bkennedy@nus.edu.sg
Image: NUS

Speaker: Brian Kennedy

Title: 'Molecular Mechanisms of ageing and strategies to extend healthy longevity' (tentative)

Abstract:
To be updated

Biography:
Research Interest

Research in the Kennedy lab is directed at understanding the biology of ageing and translating research discoveries into new ways of delaying, detecting, preventing and treating human ageing and associated diseases.
Current Research Projects

Several research strategies are employed to understand the biology of human ageing and to develop translational approaches. We use multiple model organisms and systems for these purposes, relying on non-vertebrates for discovery-based approaches to generate hypotheses regarding ageing mechanisms and studies in mammals to test hypotheses and to develop translational strategies. Specific projects include:

Systems biology strategies to understand ageing – Using the yeast Saccharomyces cerevisiae, we employ large-scale genetic and molecular approaches to define how pathways controlling ageing interact in a network. Recently, we published a full genome analysis of replicative ageing, the number of divisions one yeast mother cell can undergo. Surprisingly, it is relatively easy to extend replicative lifespan, as nearly 250 long-lived gene deletions were identified. Currently, we are generating an epistasis network to define how these genes interact, and combining this with detailed analysis of specific long-lived mutants. In addition, we have identified drugs that extend yeast lifespan and seek their mechanism of action. We are also active with the nematode C. elegans, using it primarily as a short-lived multicellular species in which to define which yeast ageing pathways are conserved.

Murine longevity and studies and disease models – Several approaches are employed to identify the mechanisms governing mammalian ageing. Primary focus is on the mTOR pathway, which is intimately linked to ageing. Reduced mTOR signalling, for instance by treatment with rapamycin, extends both lifespan and healthspan, the disease-free and functional period of life. We use genetic and pharmacologic strategies to modify mTOR activity, with the goal of determining in which tissues mTOR modulates ageing, the temporal nature of interventions and, importantly, the pathways downstream of mTOR that transmit age-related signals. Other lines of experimental investigation are aimed at understanding BCAA metabolism and disease and understanding how altered nuclear lamin function is linked to ageing and diseases.