The NO-Age and NO-AD Seminar Series 032

'*C. elegans* as a tool for industrial drug discovery in ageing, microbiome and neurodegenerative disease'

by

Assos. Prof. David Weinkove
Durham University, UK

at

14:00-15:00 (CET), Monday, 22nd March 2021

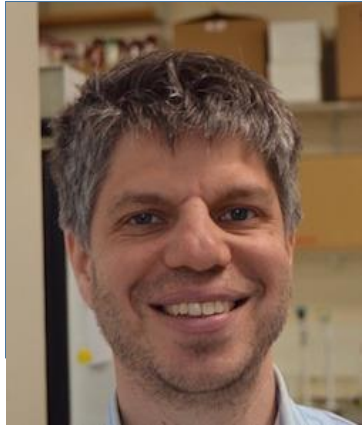Register in advance for this webinar:

https://uio.zoom.us/webinar/register/WN_mUr7M04pSSuhZk-r4ve4uw

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

Speaker: David Weinkove

Title: *C. elegans* as a tool for industrial drug discovery in ageing, microbiome and neurodegenerative disease

Abstract:
C. elegans has been incredibly successful in academic research but hasn't fulfilled its promise in industry. Since the 1990s, there have been several attempts to bring C. elegans research into pharma and biotech. Yet, C. elegans is still not a standard model in drug discovery. I have always been interested in translating research in C. elegans but it was not until we established the contract research organization Magnitude Biosciences, have we begun to see a path to really fulfilling the amazing potential of C. elegans. In this talk I will discuss our research showing how we used E. coli genetics to find interventions in bacteria that lead to significant slowing of ageing in C. elegans, and how that identified bacterial folate synthesis as a target for further development. In particular our research highlights folic acid supplementation as an area for further investigation. I will discuss our collaboration with Liping Zhao (Shanghai Jia Tong, Rutgers) to apply these findings to the understanding of the human microbiome and obesity. In addition, I will discuss how we developed automated technology that produces quantitative robust data to measure ageing. We will discuss how this technology can be used to monitor neurodegenerative models of C. elegans and has the potential to accelerate drug discovery pipelines fpr neurodegenerative disease across the world.

Name: David Weinkove
Institute: Durham University, Magnitude Biosciences
Email: david.weinkove@durham.ac.uk

Biography:
Dr David Weinkove is an Associate Professor at the Department of Biosciences, Durham University, originally appointed Lecturer in Ageing and Biochemistry in 2008. He David has an undergraduate degree from University of Cambridge (BA Hons- Natural Sciences) and a PhD from the University of London (University College London - Biochemistry) where he helped discover and characterise the Drosophila PI 3-kinase. He learnt to work with C. elegans in the lab of Ronald Plasterk at the Netherlands Cancer Institute, and Hubrecht Institute, returning to the Netherlands Cancer Institute to set up a C. elegans facility in the lab of Nullin Divecha, who works on phosphoinositide signaling in cancer and he spent two months working at the University of Utah in a collaboration with Erik Jorgensen. David then moved to the lab of David Gems at UCL, where he discovered a spontaneous mutation in the E. coli genome that caused a large lifespan increase in C. elegans. He subsequently showed that inhibition of bacterial folate synthesis slows ageing and his lab in Durham studies how bacteria influences C. elegans ageing on a molecular level. He is an author of >20 peer-reviewed papers, which have been cited >2900 times. DW is a former Trustee of the British Society for Research on Ageing (BSRA 2014-19) and organized several international conferences and workshops including the BSRA Annual Scientific Meeting 2016 and the inaugural workshop on Automated Analysis of Ageing in C. elegans (2017).
In 2018, David co-founded and is the CEO of the spinout company Magnitude Biosciences that provides research services to industry and academia using C. elegans through the use of unique automated technology to track worm movement. As part of this role, David has been invited to give several talks on the use of C. elegans in industrial drug discovery in the fields of ageing and the microbiome.