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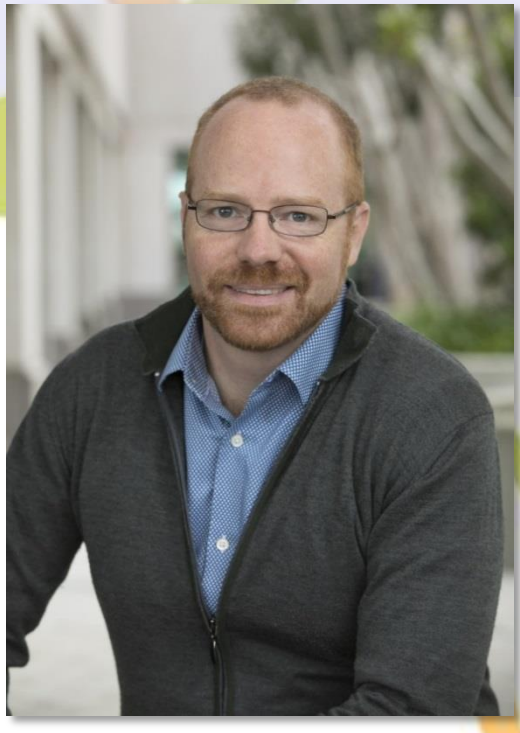
TEMASEK LIFESCIENCES LABORATORY

26 September 2019 (Thursday), 4pm
The Auditorium (Level 1)

Hosted by: Dr CAI Yu

Stem cells and aging: developing interventions to boost regeneration



Dr Heinrich JASPER
Genentech Inc.
Buck Institute for Research on Aging, United States

In aging and diseased tissues, regeneration and regenerative therapies are limited by stem cell dysfunction and unfavorable tissue environments. We study stem cells and tissue repair in barrier epithelia and the retina of *Drosophila* and mice to explore the causes and consequences of age-related regenerative dysfunction. These studies have led to the discover of interventions targeting age-related inflammation, stem cell proliferation, stem cell metabolism, innate immune responses, and the commensal microbiota as strategies to enhance regeneration and extend lifespan. I will discuss these strategies and provide perspectives for the development of targeted interventions to improve tissue function in the elderly.

Dr. Jasper is a Staff Scientist at Genentech Inc. in South San Francisco and a Professor at the Buck Institute for Research on Aging in Novato, California, USA. He obtained a diploma in biochemistry from the University of Tübingen (Germany) in 1999 and his PhD from the University of Heidelberg/EMBL (Germany) in 2002. H.J. assumed his first faculty appointment at the University of Rochester and moved to the Buck Institute in 2012. He was appointed Staff Scientist at Genentech in 2017.

Recent Publications:

1. Pedro Sousa-Victor, Joana Neves, Wendy Cedron-Craft, P. Britten Ventura, Chen-Yu Liao, Rebeccah R. Riley, Ilya Soifer, Nicholas van Bruggen, Ganesh A. Kolumam, Saul A. Villeda, Deepak A. Lamba & **Heinrich Jasper** . *Nature Metabolism* 1, 276–290 (2019). MANF regulates metabolic and immune homeostasis in ageing and protects against liver damage.
2. Haller S, Kapuria S, Riley RR, O'Leary MN, Schreiber KH, Andersen JK, Melov S, Que J, Rando TA, Rock J, Kennedy BK, Rodgers JT, **Jasper H**. Haller et al., Cell Stem Cell 2017 mTORC1 Activation during Repeated Regeneration Impairs Somatic Stem Cell Maintenance.
3. Joana Neves, Pedro Sousa-Victor, **Heinrich Jasper**. Neves et al, Cell Stem Cell 2017. Rejuvenating Strategies for Stem Cell-based Therapies in Aging.