

10 SEPT
2026

Thursday

LECTURE

MEET & EAT *

Light lunch provided
BAM3, James Allison

11.00am - 12.00pm

12.00pm - 1.00pm



The Cancer Neuroscience of Brain Metastases

ABSTRACT

Cancer Neuroscience studies how the nervous system directly communicates with and influences tumor cells, and how tumors in turn hijack neural signaling for their own growth and spread. I will show how brain metastases (BM) display tumor-intrinsic Ca^{2+} co-activity, both in vitro and in vivo, and that blocking gap junctions reduces this Ca^{2+} activity as well as tumor cell proliferation. We aim to genetically dissect the ion channels and downstream targets driving this Ca^{2+} communication, establish how this activity is mechanistically associated with cell cycle progression, and determine how the brain's unique microenvironment shapes BM calcium signaling and metastatic growth. Importantly we have found that neurons form functional excitatory synapses with brain-metastatic cancer cells, using AMPA-type glutamate receptors to drive tumor growth, and showing that blocking these receptors reduces metastatic burden in preclinical models and I will present our latest findings supporting this project. Finally, I will present our current work studying the interplay between the nervous system and the immune system in BM, where we set out to discover how this interaction influences anti-BM efficacy, T cell dynamics and brain infiltration. Together, these topics highlight how BM co-opts neural and immune communication for its own advantage, pointing toward shared therapeutic targets that our project will help characterize further.



SPEAKER

Matthia Karreman

Teamleader : Cancer Neuroscience of Brain Metastases
University Hospital Heidelberg (UKHD) and German Cancer Research Center (DKFZ) Heidelberg

HOST:

Department of Cancer Research LIH

RESPONSIBLE SCIENTIST:

Ángel Álvarez-Prado

*Registration for the Meet & Eat is mandatory. Please email Siu-Thanh.Ho@lih.lu to confirm your attendance

Location:

Lecture:
CHL - Centre
Room: *Amphitheatre*
4, rue Ernest Barblé
L-1210 Luxembourg

Webex:
In-person attendance is strongly encouraged. If you are unable to attend on site due to operational constraints, please contact Siu-Thanh.Ho@lih.lu for the Webex link.