

KJELDGAARD Lecture - Prof. Laurence Van Melderén

Wednesday 28 September 2022 at 13:15-14:00

Followed by PhD-session at 14:30—15:00

(Coffee and cake will be served between lecture and PhD-session)

1871-120 (MBG Auditorium)

Hosts: Ditlev E. Brodersen and Gilles C. Vanwalleghem



Prof. Laurence Van Melderén
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Toxin-antitoxin systems and bacterial cell death

Toxin-antitoxin (TA) systems are small genetic modules that are widespread in prokaryotes. While initially discovered on plasmids, which they stabilize, TA systems are also abundantly detected in bacterial chromosomes. Their functions have been highly debated in the last decade. We recently showed that TA systems do not contribute to antibiotic persistence or stress response, as previously reported in the literature. We recently developed single-cell approaches to analyze the physiological effects of the toxins. We demonstrate that the activation of TA systems promotes cell death in cells when a TA-encoding plasmid is lost, indicating that TA activation leads to cell death and not to a state of stress tolerance. These aspects of TA biology will be discussed.