CIIID FALL QUARTER SEMINAR

Nucleic acids and Innate Immunity

When nucleic acids sensing turns toxic: novel strategies to control auto-inflammation

DATE: **Friday, September 28th, 2018**

TIME: **10:00 AM - 11:00 AM**

LOCATION: **South Lake Union Brotman Auditorium**
850 Republican St.,
Seattle, WA 98109

PRESENTED BY: **Michael P. Gantier, Ph.D.**

ARC Future Fellow and Group Leader

Centre for Innate Immunity and Infectious Diseases,
Hudson Institute of Medical Research (Australia).

"Our laboratory recently discovered that mild DNA damage originating from DNA intercalation or gene recombination could lead to the leakage of nuclear DNA into the cytoplasm, resulting in the activation of the immune sensor cGAS and downstream production of pro-inflammatory cytokine such as type-I interferons (Pepin et al., Nucleic Acids Research, 2016 and 2017; Pepin et al. mBio 2017). Independent studies validated our findings and are collectively showing that cGAS sensing of leaked cytosolic DNA acts as a critical checkpoint of genomic integrity, and stops cell proliferation of damaged cells to maintain tissue homeostasis. Here I will present some of our latest research investigating how cGAS engagement in damaged cells modulates tissue homeostasis and inflammation, and why this could present novel therapeutic opportunities in auto-inflammatory diseases such as systemic lupus erythematosus (SLE). I will also introduce our on-going studies on the rational design of next generation immuno-modulatory oligonucleotides and define why such molecules present exciting potential for the modulation of toxic nucleic acids sensing, for instance seen in SLE."

The CIIID gratefully acknowledges the generous contribution in support of this series from the **University of Washington** | **School of Medicine**

This seminar is open to all faculty, staff and students. No registration is required.
For more information on CIIID, please visit https://ciiid.washington.edu/
Event contact: Jackie Berhorst | Email: jdao@uw.edu.

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