

## セミナーのお知らせ

# "Discovering essential extracellular receptor-ligand interactions: methods and application to pathogen and leukocyte cellular recognition"

**Professor, Gavin James Wright**

*Wellcome Trust Sanger Institute, Cambridge*

Date: June 27<sup>th</sup> Thursday

Time: 3pm to 4 pm

Location: Biken Hall, 1<sup>st</sup> Floor, Main building, Research Institute for Microbial Diseases

Individual cells within biological systems frequently coordinate their functions through signals initiated by specific extracellular protein interactions involving receptors that bridge the cellular membrane. Due to their amphipathic biochemical nature, these membrane-embedded receptor proteins are difficult to manipulate and their interactions are characterised by very weak binding strengths. These features make identifying new receptor-ligand interactions technically challenging. We have developed several methods to discover new extracellular receptor interactions that can be applied in a systematic, genome-wide approach and have applied them to important problems of cellular recognition. I will discuss the development of these techniques and how they have been used to identify extracellular receptor-ligand interactions that are essential for the invasion of human erythrocytes by the blood stage of the malaria parasite and also novel interactions between human leukocyte receptors.

### 【参考文献】

1. Dundas-K, Shears-M, Sinnis-P and **Wright-GJ**. "Important extracellular interactions between *Plasmodium* sporozoite and host for infection." **Trends in Parasitology** 2018 In Press.
2. Chong-ZS, Ohnishi-S, Yusa-K and **Wright-GJ**. "Pooled extracellular receptor-ligand screening using CRISPR activation." **Genome Biology** 2018 19 p205.
3. Galaway-F, Drought-LG, Fala-M, Cross-N, Kemp-AC, Rayner-JC and **Wright-GJ**. "P113 is a merozoite surface protein that binds the N-terminus of *Plasmodium falciparum* RH5" **Nature Communications** 2017 8 p14333.

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※医学系研究科単位認定の対象となるセミナーです。