A cell’s ability to respond to its extracellular environment involves a complex and highly organised series of events referred to as cellular signalling. Our laboratory focuses on a group of enzymes known as Protein Tyrosine Phosphatases (PTPs) that regulate tyrosine phosphorylation-dependent cellular signalling. We use cutting edge biochemical, cell biological and imaging approaches as well as knockout mice and Drosophila genetics to delineate the roles of PTPs in varied human diseases. A key focus of the laboratory is on understanding the roles of PTPs in the control of energy expenditure and glucose homeostasis.

**Research Projects**

1. The central nervous system (CNS) control of energy expenditure and glucose homeostasis in obesity
2. Molecular mechanisms by which obesity drives the development of fatty liver disease
3. Obesity and the gut microbiome
4. Obesity and cancer; cancer metabolism

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**Selected significant publications:**


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