



**RI Invited Speaker Form**

Please complete as much as you can

<b>Name &amp; job title:</b>	Sophie Steculorum Group Leader
<b>Institution:</b>	Group of Neurocircuit Wiring and Function Max Planck Institute for Metabolism Research
<b>Talk title:</b>	Novel regulators of the central control of feeding and systemic insulin sensitivity
<b>Date:</b>	06/03/18
<b>Seminar Abstract:</b> (provide URL if easier)	<p>Over the last decades, our understanding of the fundamental homeostatic processes governing energy balance and glucose homeostasis has largely evolved and pinpointed a pivotal role of the central nervous system and more particularly of the arcuate nucleus of the hypothalamus (ARH). Activation of orexigenic AgRP-expressing neurons located in the ARH potently promotes feeding. We demonstrated that in addition to modulating feeding, chronically altering AgRP-neurons activity also affects peripheral glucose homeostasis. Further, optogenetic circuitry mapping reveals that feeding and insulin sensitivity are controlled by both distinct and overlapping AgRP-projections. Collectively, our results suggest that AgRP neurons in mice induce not only eating, but also insulin resistance, revealing a mechanism by which these neurons rapidly coordinate hunger states with glucose homeostasis. Furthermore, we discover a novel AgRP-neurons' stimulatory pathway by demonstrating that they express the purinergic receptor 6 (P2Y6). Activation of P2Y6 by its endogenous ligand uridine-diphosphate increases AgRP-neuron's action potential firing and promotes feeding. Selectively abrogating P2Y6-signaling in AgRP-neurons alleviates obesity-associated adiposity, hyperphagia and insulin resistance. Taken together, our work reveals that modulating AgRP-neurons by targeting P2Y6-signaling improves obesity and obesity-associated metabolic outcomes.</p>

**Speaker Biography:**  
(provide URL if easier)

<https://www.sf.mpg.de/1826681/cv-sophie-steculorum>

**Image:**

