

Zoophysiology Seminar

Friday, 21/8, 13.00–14.00, 1130-123

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How endocrine signaling drives metabolic and behavioral adaptation to nutrition and exercise

Animals must adapt their metabolism, growth and behavior to changing nutritional conditions and physiological demands. Our work uses *Drosophila* and mammalian systems to uncover how organs sense changes in nutrient state, energy demand and physiological stress, and translate this information into endocrine signals that coordinate whole-animal responses. We have identified gut-, fat- and muscle-derived signals that communicate with distant tissues to regulate growth, food choice, sleep, insulin signaling and adaptation to nutritional conditions. We also use high-throughput in vivo exercise platforms in *Drosophila*, combined with genetics and human proteomics, to identify pathways regulated by physical activity that mediate systemic physiological adaptations and energy homeostasis.