

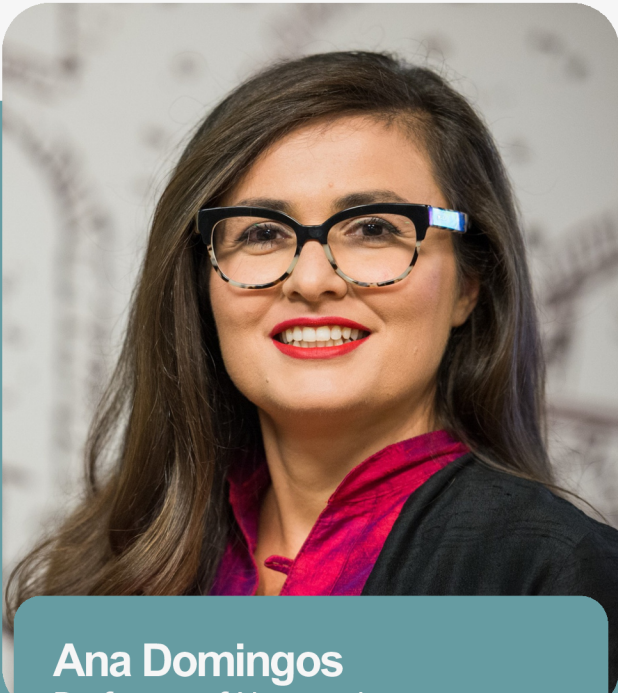


**VANDERBILT**  
School of Medicine Basic Sciences  
Department of Pharmacology

## 2024 - 2025 Seminar Series

# “Sympathetic Neuron-derived NPY Protects from Obesity”

Sympathetic nerves within brown and white adipose tissue locally release norepinephrine (NE) which induce lipolysis and thermogenesis. NPY is co-released with NE, but the extent of NPY-releasing sympathetic nerves and their role in adipose tissue is unknown. Although many reports indicate that NPY in the brain stimulates appetite, knocking out NPY has no effect on daily food consumption, and mice without NPY receptors develop late-onset obesity despite eating less. In humans, mutations in NPY have been linked to high body mass index (BMI) but not an unhealthy dietary pattern. These findings suggest that NPY have contrasting impacts on maintaining body weight homeostasis. To test this, we employed improved animal models in which NPY was selectively removed from sympathetic neurons, while leaving it intact in the brain. Our results indicate that, relative to central NPY, peripheral NPY produced by the sympathetic nerves has the opposite effect on body weight homeostasis.



**1 October 2024**

**4:00 PM**

**202 Light Hall**

Host: Heidi Hamm

**Ana Domingos**

Professor of Neuroscience  
Department of Physiology, Anatomy  
and Genetics  
University of Oxford