

## **Symposium 14: Neural mechanisms underlying autonomic responses to stress**

**In association with The Physiological Society**

**Theme: The neurobiology of stress**

**Tuesday 11<sup>th</sup> April, 9:00 – 10:40**

Stress disorders are associated with an elevated risk of a range of different cardiovascular events, including stroke, coronary heart disease, heart failure, and cardiovascular death. There is a need for animal research to understand the mechanisms involved in these events and to increase therapeutic approaches. In this context, Carlos C. Crestani (Brazil) will give an example of acute stress cardiovascular alteration, with a focus of corticotropin-releasing factor implication in the bed nucleus. Cardiorespiratory function in stress states, such as epilepsy, hypertension and sleep apnoea seems also to be linked to PACAP and microglia in the brainstem and spinal cord (Paul M Pilowsky, Australia). Chronic stress induces anxiety, and

alteration of the autonomic system is associated to a neural circuit involving serotonin in the brainstem (Caroline Sévoz-Couche, France). Finally, Luca Carnevali (Italy) will talk about potential cardioprotective effects of a pharmacological approach that targets the endocannabinoid system in rats with high-anxiety behaviour.

**Chair: Caroline Sévoz-Couche** - Sorbonne Universités, UPMC Univ Paris 06, INSERM, UMR\_S 1158, Unité de Neurophysiologie Respiratoire Expérimentale et Clinique, France.

**Speaker 1: C. C. Crestani** - Department of Natural Active Principles and Toxicology, School of Pharmaceutical Sciences, Univ. Estadual Paulista-UNESP, Brazil.

'Control of cardiovascular responses to acute emotional stress by corticotropin-releasing factor in the bed nucleus of the stria terminalis: Involvement of local NMDA-NO-GMPc-PKG signaling mechanism.'

**Speaker 2: P.M. Pilowsky** - Department of Physiology, University of Sydney, 7 Eliza St, Newtown, Sydney, NSW 2042, Australia.

'Microglia, PACAP and disease: role of cardiovascular neurons in the brainstem and spinal cord.'

**Speaker 3: C. Sévoz-Couche** Sorbonne Universités, UPMC Univ Paris 06, INSERM, UMR\_S 1158, Unité de Neurophysiologie Respiratoire Expérimentale et Clinique, France.

'Autonomic modifications induced by social defeat involve serotonin the brainstem associated to activation of the dorsomedial nucleus of the hypothalamus'

**Speaker 4: L. Carnevali** - Department of Neuroscience, University of Parma, Italy.

'Cardiac autonomic and respiratory correlates of high-anxiety behaviour in rats: potential involvement of the endocannabinoid signaling'.