Symposium title:
Mechanisms of emotional and drug-induced hyperthermia

Organisers:

Youichirou Ootsuka
Mary Overton Neuroscience Research Fellow
Centre for Neuroscience, Department of Human Physiology, School of Medicine
Flinders University of South Australia
Bedford Park, South Australia 5042, Australia
E-mail: youichirou.ootsuka@flinders.edu.au

William Blessing
Emeritus Professor
Centre for Neuroscience, Department of Human Physiology, School of Medicine
Flinders University of South Australia
Bedford Park, South Australia 5042, Australia
E-mail: w.w.blessing@flinders.edu.au

Brief description:
The physiological response to psychologically salient or stressful events includes increases in body and brain temperature (emotional hyperthermia). Certain classes of psychoactive drugs cause similar increases in temperature, sometimes to levels that are life-threatening or even fatal, outcomes that are made more likely by social interactions that also affect psychological state. The modern epidemics of recreational drug abuse focused on amphetamine derivatives (“ecstasy” and “ice”) are extremely damaging, for individuals and for society. Thus discovery of the mechanisms whereby these agents act, including the brain pathways involved, is of utmost scientific and social importance. In our symposium, three key neuroscientists researching the physiological basis of psychological and pharmacological hyperthermia will report their recent research. We will discuss brain mechanisms underlying drug-induced and emotional hyperthermia.

Aim:
The aim of the symposium is to trigger new intensive studies on how the central control of psychological state are integrated with the central thermoregulatory system, and to promote awareness of investigating comprehensive central thermoregulatory mechanisms.

Presentations:

**MDMA-induced brain hyperthermia mechanisms, environmental and state-induced modulation, and pharmacological correction.**
Eugene Kiyatkin
*National Institutes of Health (USA)*

**Higher brain stress signalling that drives the hypothalamo-medullary pathway for stress-induced hyperthermia**
Kazuhiro Nakamura
*Nagoya University, Japan*
The role of the habenula complex in stress-induced hyperthermia
Youichirou Ootsuka
Flinders University of South Australia, Australia

Key papers: