

# Welcome to Andrej A. Romanovsky's FeverLab —

*physiological research laboratory where*

*body temperature regulation and systemic inflammation are studied...*

## Affiliation

**Present** (since December 1999): Systemic Inflammation Laboratory (FeverLab), Trauma Research, Level 1 Trauma Center, St. Joseph's Hospital and Medical Center, Phoenix, Arizona, USA

The laboratory is located at the Marian H. Rochelle Neuroscience Research Center, Barrow Neurological Institute.

St. Joseph's Hospital is a Dignity Health (formerly, Catholic Healthcare West) hospital.

**Past** (December 1994-January 2000): Thermoregulation Laboratory (FeverLab), Clinical Research and Technology Center, Legacy Health System, Portland, Oregon, USA

## Research foci and representative publications

PDFs of publications can be downloaded or requested from the <http://www.feverlab.net/toll-free.htm> page.

### **Focus 1: Fever and hypothermia in systemic inflammation: physiological mechanisms and mediators**

Steiner AA, Ivanov AI, Serrats J, Hosokawa H, Phayre AN, Robbins JR, Roberts JL, Kobayashi S, Matsumura K, Sawchenko PE, Romanovsky AA. Cellular and molecular bases of the initiation of fever. PLoS Biol 4: e284, 2006.

Steiner AA, Chakravarty S, Rudaya AY, Herkenham M, Romanovsky AA. Bacterial lipopolysaccharide fever is initiated via Toll-like receptor 4 on hematopoietic cells. Blood 107: 4000-4002, 2006.

Steiner AA, Dogan MD, Ivanov AI, Patel S, Rudaya AY, Jennings DH, Orchinik M, Pace TWW, O'Connor KA, Watkins LR, Romanovsky AA. A new function of the leptin receptor: mediation of the recovery from lipopolysaccharide-induced hypothermia. FASEB J 18: 1949-1951, 2004.

**Focus 2: Roles of transient receptor potential (TRP) channels in body temperature regulation**

Garami A, Pakai E, Oliveira DL, Steiner AA, Wanner SP, Almeida MC, Lesnikov VA, Gavva NR, Romanovsky AA. Thermoregulatory phenotype of the Trpv1 knockout mouse: thermoeffector dysbalance with hyperkinesia. *J Neurosci* 31: 1721-1733, 2011.

Garami A, Shimansky YP, Pakai E, Oliveira DL, Gavva NR, Romanovsky AA. Contributions of different modes of TRPV1 activation to TRPV1 antagonist-induced hyperthermia. *J Neurosci* 30: 1435-1440, 2010.

Steiner AA, Turek VF, Almeida MC, Burmeister JJ, Oliveira DL, Roberts JL, Bannon AW, Norman MH, Louis J-C, Treanor JJS, Gavva NR, Romanovsky AA. Nonthermal activation of transient receptor potential vanilloid-1 channels in abdominal viscera tonically inhibits autonomic cold-defense effectors. *J Neurosci* 27: 7459-7468, 2007.

**Focus 3: Body temperature control : what is regulated and how; thermoregulation concepts**

Romanovsky AA, Almeida MC, Garami A, Steiner AA, Norman MH, Morrison SF, Nakamura K, Burmeister JJ, Nucci TB. The transient receptor potential vanilloid-1 channel: a thermosensor it is not. *Pharmacol Rev* 61: 228-261, 2009.

Romanovsky AA. Thermoregulation: some concepts have changed. Functional architecture of the thermoregulatory system. *Am J Physiol* 292: R37-R46, 2007.

Romanovsky AA, Ivanov AI, Shimansky YP. Selected contribution: Ambient temperature for experiments in rats: a new method for determining the zone of thermal neutrality. *J Appl Physiol* 92: 2667-2679, 2002.

**Focus 4: Behavioral thermoregulation: pathways and mechanisms**

Almeida MC, Steiner AA, Branco LGS, Romanovsky AA. Cold-seeking behavior as a thermoregulatory strategy in systemic inflammation. *Eur J Neurosci* 23: 3359-3367, 2006.

Almeida MC, Steiner AA, Branco LGS, Romanovsky AA. Neural substrate of cold-seeking behavior in endotoxin shock. *PLoS One* 1: e1, 2006.

Romanovsky AA, Shido O, Sakurada S, Sugimoto N, Nagasaka T. Endotoxin shock: thermoregulatory mechanisms. *Am J Physiol* 270: R693-R703, 1996.

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