

BRIEF CURRICULUM VITAE

ANDREJ A. ROMANOVSKY

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

EDUCATION AND TRAINING

1991-93 Postdoc (Neuroscience), Department of Physiology and Biophysics, University of Tennessee, Memphis, TN

1986-89 Ph.D. (Physiology), Institute of Physiology, National Academy of Sciences, Minsk, Belarus

1984-86 Resident (Pathophysiology), Ivan P. Pavlov Institute of Experimental Medicine, Russian Academy of Medical Sciences, St. Petersburg, Russia

1978-84 M.D. with Distinction (Internal Medicine), Ivan P. Pavlov Medical University, St. Petersburg, Russia

PRINCIPAL ACADEMIC APPOINTMENTS

2009- Faculty Member, Interdisciplinary Graduate Program in Neuroscience, Arizona State University, Tempe, AZ

2009- Faculty Member, Interdisciplinary Graduate Program in Molecular and Cellular Biology, Arizona State University, Tempe, AZ

2001- Adjunct Professor, School of Life Sciences, Arizona State University, Tempe, AZ

1999- Sr. Staff Scientist and Director to Professor and Director to Professor, Systemic Inflammation Laboratory, St. Joseph's Hospital, Phoenix, AZ

1994-00 Associate Scientist and Director, Thermoregulation Laboratory, Legacy Health System, Portland, OR

1993-94 Instructor, Department of Physiology and Biophysics, University of Tennessee, Memphis, TN

1989-91 Assistant Scientist to Scientist to Senior Scientist, Institute of Physiology, National Academy of Sciences, Minsk, Belarus

NON-ACADEMIC

2011- Partner, Tree Fever: Forestry Conservation and Development

HONORS AND AWARDS (selected)

• John F. Perkins Fellow, American Physiological Society (1994) • Fellow, Japan Society for the Promotion of Science (1994) • USSR National Scholastic Gold Medal (1978)

FOUNDING EDITOR-IN-CHIEF

• *Temperature* (2014-)

VOLUME EDITOR

• *Thermoregulation, Handbook of Clinical Neurology* (in preparation)

GUEST/ISSUE/CALL FOR PAPERS EDITOR

• *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*, vols. 288-292, call for papers on Physiology and Pharmacology of Temperature Regulation (2005-07) • *Journal of Thermal Biology*, vol. 31, special issue on Physiology and Pharmacology of Temperature Regulation (2006) • *Frontiers in Bioscience*, issue on Fever and Hypothermia in Systemic Inflammation (2003-05) • *Autonomic Neuroscience: Basic and Clinical*, vol. 85, special issue on Fever: The Role of the Vagus Nerve (2000) • *Medical Hypotheses*, vol. 50, proceedings of the mini-symposium on Clinical Thermophysiology: New Hypotheses and Emerging Concepts (1998)

EDITORIAL BOARD MEMBER (dates vary)

• *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology* • *PLoS One* (Academic Editor) • *Acta Physiologica Hungarica* (International Board) • *The Scientific World Journal* (Physiology Board) • *International Journal of Clinical and Experimental Medicine* • *International Journal of Pharmacology* (Regional Editor) • *The Open Drug Discovery Journal* • *The Open Biology Journal* • *The Open Sports Medicine Journal*

GRANT REVIEW (dates vary)

• NIH: ZDA1 MXL-F-08 (EUREKA), ZRG1 MOSS-D 12B, ZRG1 IFCN-H-03 • NSF • Medical Research Council, UK • Canadian Institutes of Health Research • Dutch Research Council • National Research Foundation, South Africa • Health, Welfare and Food Bureau, Hong Kong, China • National Science Centre, Poland • Research Council, Romania

Grant Review (continues)

• National Sleep Research Society, USA • US-Israel Binational Science Foundation, Israel • Michael Smith Foundation for Health Research, Canada • Memorial University of Newfoundland, Canada

ADVISORY BOARDS

Scientific Advisory Board, Ivan P. Pavlov Medical University, St. Petersburg, Russia (2012-present) • Thermal Physiology Section, International Union of Physiological Sciences (2004-2012)

RESEARCH SUPPORT (selected grants and contracts)

2012-14 11SDG4880051, American Heart Association, Cost-benefit of naturally occurring hypothermia in septic shock, co-investigator (Steiner AA, PI)
 2011-12 Study agreement, Abbott Laboratories/AbbVie Inc., TRP channels and thermoregulation, PI
 2007-12 R01 NS041233, NIH/NINDS, Blood-Brain Signaling in Inflammation: Lipid Mediators of Fever and Hypothermia, PI, extended through 2013
 2004-08 Study agreements 200423556, 2006193651, Amgen Inc., TRP channels and thermoregulation, PI
 2003-06 Category II grant #8016, Arizona Biomedical Research Commission, Vagal anti-inflammatory system, PI
 2000-03 R01 NS041233, NIH/NINDS, Blood-Brain Signaling in Inflammation: Role of Albumin, PI, extended through 2005

RECENT PUBLICATIONS (selected)

De Oliveira C, Garami A, Lehto SG, Pakai E, Tekus V, Pohoczky K, Youngblood BD, Wang W, Kort ME, Kym PR, Pinter E, Gavva NR, **Romanovsky AA**. Transient receptor potential channel ankyrin-1 is not a cold sensor for autonomic thermoregulation in rodents. *J Neurosci* 34: 4445-4452, 2014.
 Ngampramuan S, Cerri M, Del Vecchio F, Corrigan JJ, Kamphee A, Dragic AS, Rudd JA, **Romanovsky AA**, Nalivaiko E. Thermoregulatory correlates of nausea in rats and musk shrews. *Oncotarget* 5: 1565-1575, 2014.
Romanovsky AA. Skin temperature: its role in thermoregulation. *Acta Physiol* 210, 498–507, 2014.
 Rance NE, Dacks PA, Mittelman-Smith MA, **Romanovsky AA**, Krajewski-Hall SJ. Modulation of body temperature and LH secretion by hypothalamic KNDy (kisspeptin, neurokinin B and dynorphin) neurons: A novel hypothesis on the mechanism of hot flushes. *Front Neuroendocrinol* 34: 211-227, 2013.
 Saper CB, **Romanovsky AA**, Scammell TE. Neural circuitry engaged by prostaglandins during the sickness syndrome. *Nat Neurosci* 15: 1088-1095, 2012.
 Almeida MC, Hew-Butler T, Soriano RN, Rao S, Wang W, Wang J, Tamayo N, Oliveira DL, Nucci TB, Aryal P, Garami A, Bautista D, Gavva NR, **Romanovsky AA**. Pharmacological blockade of the cold receptor TRPM8 attenuates autonomic and behavioral cold defenses and decreases deep body temperature. *J Neurosci* 32: 2086-2099, 2012.
 Liu E, Lewis K, Al-Saffar H, Krall CM, Singh A, Kulchitsky VA, Corrigan JJ, Simons CT, Petersen SR, Musteata FM, Bakshi CS, **Romanovsky AA**, Sellati TJ, Steiner AA., Naturally occurring hypothermia is more advantageous than fever in severe forms of lipopolysaccharide- and *E. coli*-induced systemic inflammation. *Am J Physiol* 302: R1372-R1383, 2012.
 Wanner SP, Garami A, Pakai E, Oliveira DL, Gavva NR, Coimbra CC, **Romanovsky AA**. Age reverses the role of transient receptor potential vanilloid-1 channel in systemic inflammation from anti-inflammatory to proinflammatory. *Cell Cycle* 11: 343-349, 2012.
 Steiner AA, Molchanova AY, Dogan MD, Patel S, Pétervári E, Balaskó M, Wanner SP, Eales J, Oliveira DL, Gavva NR, Almeida MC, Székely M, **Romanovsky AA**. The hypothermic response to bacterial lipopolysaccharide critically depends on brain CB1, but not CB2 or TRPV1, receptors. *J Physiol* 589: 2415-2431, 2011
 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 hyperkinesis. *J Neurosci* 31: 1721-1733, 2011.
 Wanner SP, Garami A, **Romanovsky AA**. Hyperactive when young, hypoactive and overweight when aged: Connecting the dots in the story about locomotor activity, body mass, and aging in Trpv1 knockout mice. *Aging* 3: 450-454, 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.
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.
 Steiner AA, Hunter JC, Phipps SM, Nucci TB, Oliveira DL, Roberts JL, Scheck AC, Simmons DL, **Romanovsky AA**. Cyclooxygenase-1 or -2 — which one mediates lipopolysaccharide-induced hypothermia? *Am J Physiol* 297: R485-R494, 2009.
 Steiner AA, Oliveira DL, Roberts JL, Petersen SR, **Romanovsky AA**. Nicotine administration and withdrawal affect survival in systemic inflammation models. *J Appl Physiol* 105:1028-1034, 2008.

- Gavva NR, Treanor JJS, Garami A, Fang L, Surapaneni S, Akrami A, Alvarez F, Bak A, Darling M, Gore A, Jang GR, Kessler JP, Ni L, Norman MH, Palluconi G, Rose MJ, Salfi M, Tan E, **Romanovsky AA**, Banfield C, Davar G. Pharmacological blockade of the vanilloid receptor TRPV1 elicits marked and persistent hyperthermia in humans. *Pain* 136: 202-210, 2008.
- Ootsuka Y, Blessing WW, Steiner AA, **Romanovsky AA**. Fever response to intravenous prostaglandin E₂ is mediated by brain but does not require afferent vagal signaling. *Am J Physiol* 294: R1294-R1303, 2008.
- Romanovsky AA**. Thermoregulation: some concepts have changed. Functional architecture of the thermoregulatory system. *Am J Physiol* 292: R37-R46, 2007.
- Romanovsky AA**. Temperature regulation. Chapter 23. In: *Lecture Notes on Human Physiology*, 5th edition, ed. by Petersen O. Oxford, UK: Blackwell, 2007, p. 603-615.
- Steiner AA, **Romanovsky AA**. Leptin: At the crossroads of energy balance and systemic inflammation. *Prog Lipid Res* 46: 89-107, 2007.
- 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**. Non-thermal activation of transient receptor potential vanilloid-1 channels in abdominal viscera tonically inhibits autonomic cold-defense effectors. *J Neurosci* 27: 7459-7468, 2007.
- Aronoff DM, **Romanovsky AA**. Eicosanoids in non-febrile thermoregulation. *Prog Brain Res* 162: 15-25, 2007.
- 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.
- Almeida MC, Steiner AA, Branco LGS, **Romanovsky AA**. Neural substrate of cold-seeking behavior in endotoxin shock. *PLoS ONE* 1: e1, 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.
- Ivanov AI, **Romanovsky AA**. Putative dual role of ephrin-Eph receptor interactions in inflammation. *IUBMB Life* 58: 389-394, 2006.
- Almeida MC, Steiner AA, Branco LGS, **Romanovsky AA**. What is the “natural” thermoregulatory response of rats to bacterial lipopolysaccharide, fever or hypothermia? *Eur J Neurosci* 23: 3359-3367, 2006.
- Romanovsky AA**, Steiner AA, Matsumura K. Cells that trigger fever. *Cell Cycle* 5: 2195-2197, 2006.
- Ivanov AI, Steiner AA, Patel S, Rudaya AY, **Romanovsky AA**. Albumin is not an irreplaceable carrier for amphipathic mediators of thermoregulatory responses to lipopolysaccharide: compensatory role of α_1 -acid glycoprotein. *Am J Physiol* 288: R872-R878, 2005.
- Steiner AA, Chakravarty S, Robbins JR, Dragic AS, Pan J, Herkenham M, **Romanovsky AA**. All thermoregulatory responses to conventional preparations of lipopolysaccharide are triggered by lipopolysaccharide *per se* and not by lipoprotein contaminants. *Am J Physiol* 289: R348-R352, 2005.
- Rudaya AY, Steiner AA, Robbins JR, Dragic AS, **Romanovsky AA**. Thermoregulatory responses to lipopolysaccharide in the mouse: dependence on the dose and ambient temperature. *Am J Physiol* 289: R1244-R1252, 2005.
- Steiner AA, Rudaya AY, Robbins JR, Dragic AS, Langenbach R, **Romanovsky AA**. Expanding the febrigenic role of cyclooxygenase-2 to the previously overlooked responses. *Am J Physiol* 289: R1253-R1257, 2005.
- Ivanov AI, Steiner AA, Scheck AC, **Romanovsky AA**. Expression of Eph receptors and their ligands, ephrins, during lipopolysaccharide fever in rats. *Physiol Genomics* 21: 152-160, 2005.
- Steiner AA, Rudaya AY, Ivanov AI, **Romanovsky AA**. Febrigenic signaling to the brain does not involve nitric oxide. *Br J Pharmacol*, 141, 1204-1213, 2004.
- Romanovsky AA**. Do fever and anapyrexia exist? Analysis of set point-based definitions. *Am J Physiol* 287: R992-995, 2004.
- 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.
- Dogan MD, Patel S, Rudaya AY, Steiner AA, Székely M, **Romanovsky AA**. Lipopolysaccharide fever is initiated via a capsaicin-sensitive mechanism independent of the subtype-1 vanilloid receptor. *Br J Pharmacol* 143: 1023-1032, 2004.
- Ivanov AI, Scheck AC, **Romanovsky AA**. Expression of genes controlling transport and catabolism of prostaglandin E₂ in lipopolysaccharide fever. *Am J Physiol* 284: R698-R706, 2003.
- Dogan MD, Kulchitsky VA, Patel S, Pétervári E, Székely M, **Romanovsky AA**. Bilateral splanchnicotomy does not affect lipopolysaccharide-induced fever in rats. *Brain Res* 993: 227-229, 2003.
- Romanovsky AA**, Sugimoto N, Simons CT, Hunter WS. The *organum vasculosum laminae terminalis* (OVLT) in immune-to-brain febrigenic signaling: a reappraisal of lesion experiments. *Am J Physiol* 285: R420-R428, 2003.
- Ivanov AI, Kulchitsky VA, **Romanovsky AA**. Role for the cholecystokinin-A receptor in fever: a study of a mutant rat strain and pharmacological analysis. *J Physiol* 547: 941-949, 2003.
- Ivanov AI, Patel S, Kulchitsky VA, **Romanovsky AA**. Platelet-activating factor: a previously unrecognized mediator of fever. *J Physiol* 531: 221-228, 2003.