

Saturday, March 4

BREAKFAST

Mesquite Dining Room

07:00 Breakfast buffet available from 07:00 to 08:00.

SYMPOSIUM 1**NEURAL CONTROL OF BODY TEMPERATURE**

Saguaro Ballroom I, II, III

Chairs: Morrison SF; *Oregon Health and Science University, Beaverton, Oregon, USA*
Saper CB; *Harvard Medical School, Boston, Massachusetts, USA*

08:00 Afferent pathways for temperature homeostasis
Craig AD; *Barrow Neurological Institute, Phoenix, Arizona, USA*

08:30 Central neural control of thermoregulatory effectors
Morrison SF; *Oregon Health and Science University, Beaverton, Oregon, USA*

09:00 Hypothalamic integration of thermoregulation with
other homeostatic processes
Gerstberger R; *Justus-Liebig University Giessen, Giessen, Germany*

COFFEE BREAK

Outside Saguaro Ballroom I, II, III

09:30 Refreshments provided.

SYMPOSIUM 2**HOT OR COLD: HOW DO WE SENSE?**

Saguaro Ballroom I, II, III

Chairs: Craig AD; *Barrow Neurological Institute, Phoenix, Arizona, USA*
Kobayashi S; *Kyoto University, Kyoto, Japan*

10:00 Warm-sensitive TRP channels
Caterina MJ; *Johns Hopkins Medicine, Baltimore, Maryland, USA*

10:30 ThermoTRP channels and cold sensation
Patapoutian A; *The Scripps Research Institute, La Jolla, California, USA*

11:00 ThermoTRP channels: sensors or comparators?
Kobayashi S; *Kyoto University, Kyoto, Japan*

Saturday, March 4

BREAK

11:30 Short break; no refreshments.

SYMPOSIUM 3

THERMOREGULATORY FUNCTION OF HUMAN SKIN VASCULATURE

Saguaro Ballroom I, II, III

Chairs: Kenney WL; *Penn State University, University Park, Philadelphia, USA*
Sawka MN; *USARIEM, Natick, Massachusetts, USA*

11:45 Control of cold-induced cutaneous vasoconstriction
Johnson JM; *University of Texas Health Science Center,
San Antonio, Texas, USA*

12:15 Mechanisms of cutaneous vasodilation in humans
Minson CT; *University of Oregon, Eugene, Oregon, USA*

LUNCH

Mesquite Dining Room

13:00 Lunch buffet available from 13:00 to 14:00.

SYMPOSIUM 4

HYPOTHERMIA: CLINICAL IMPLICATIONS

Saguaro Ballroom I, II, III

Chairs: Petersen SR; *St. Joseph's Hospital, Phoenix, Arizona, USA*
Sessler DI; *Cleveland Clinic, Cleveland, Ohio, USA*

14:15 Perioperative body temperature, heat balance, and clinical outcomes
Sessler DI; *Cleveland Clinic, Cleveland, Ohio, USA*

14:45 Therapeutic cooling for brain injury
Krieger DW; *Cleveland Clinic, Cleveland, Ohio, USA*

COFFEE BREAK

Outside Saguaro Ballroom I, II, III

15:15 Refreshments provided.

Saturday, March 4

SYMPOSIUM 5

OBESITY AND THERMOREGULATION

Saguaro Ballroom I, II, III

Chairs: Reitman ML; *Merck Research Laboratories, Rahway, New Jersey, USA*
Westerterp KR; *Maastricht University, Maastricht, The Netherlands*

15:30 Non-exercise induced thermogenesis:
implications for body mass and temperature regulation
Levine JA; *Mayo Clinic, Rochester, Minnesota, USA*

16:00 Uncoupling protein-3, energy metabolism and oxidative stress:
recent clarifications and complications
Harper M-E; *University of Ottawa, Ottawa, Ontario, Canada*

16:30 Leptin in body mass and temperature regulation:
lessons from studying torpor in mice
Reitman ML; *Merck Research Laboratories, Rahway, New Jersey, USA*

BREAK

17:00 Group picture at Opera House.
Poster setup; free time.

DINNER

Mesquite Dining Room

18:00 Dinner buffet available from 18:00 to 19:00.

POSTER SESSION... EXHIBITION...

Opera House

19:30 Session starts.
Free wine bar: 19:30-20:30
Cash wine bar: 20:30-21:30

POSTER SYMPOSIUM 1: THERMOMETRY 2006. METHODOLOGY

Important note: Posters of this Symposium will be presented on Sunday as well.

No. 01 Estimation of mean-body temperature from mean-skin and core temperature
Lenhardt R, Sessler DI

No. 02 Validity of tympanic temperature measured by infrared thermometry
during exercise in the heat
Mora-Rodriguez R, Del Coso J, Aguado-Jimenez R

No. 03 Comparison of five methods for the assessment of dehydration
Golja P, Blatnik J, Mekjavic IB

Saturday, March 4

- No. 04** Radiotelemetric thermometry
Gordon CJ
- No. 05** Non-invasive monitoring of body internal temperature using a passive microwave radiometer
Vesnin SG, Gorbach AM
- No. 06** Noninvasive temperature monitoring using microwave technology
Meaney PM, Paulsen KD
- No. 07** Noninvasive temperature estimation using pulse-echo ultrasound
Ebbini ES
- No. 08** MRI-based temperature monitoring
McDannold N
- No. 09** Infrared thermography – a reliable non-invasive method for monitoring blood circulation in free flap surgery
Mercer JB, de Weerd L, Setså LB
- No. 10** Optical thermometry
Merla A
- No. 11** Estimating gastric transit time for a core body temperature capsule
Heil DP, Ruby BC

POSTER SYMPOSIUM 2: EXERCISE AND PERFORMANCE

- No. 12** Evaluating heart rate, core temperature, and physiological strain index during the Hawaiian ironman triathlon
Heil DP, Montain SJ, Ruby BC, McKenzie JM, Reinert A, Juergens CA
- No. 13** Cutaneous temperature response and its correlation with oxygen consumption rate during graded load exercise
Merla A, Iodice P, Tangherlini A, De Michele G, Di Romualdo S, Di Donato L, Saggini R, Romani GL
- No. 14** Validation of core temperature prediction models during exercise in 10°C & 15°C water at different depths and walking speeds
Castellani JW, Xu X, Tikuisis P, Sils IV, O'Brien C
- No. 15** Perceptual and physiological responses to exercising at different ambient temperatures
Mündel T, Cox JP, Jones DA
- No. 16** Tyrosine supplementation offsets decrements in marksmanship performance due to body cooling
O'Brien C, Mahoney CR, Tharion WJ, Sils IV, Reese ML, Castellani JW

Saturday, March 4

- No. 17** Temperature regulation and estimated total energy expenditure during a 300 km cycling trial: a case study
Harger SG, McClaughry AE, Ruby BC
- No. 18** Post exercise core temperature rise is not affected by body posture during recovery
Geladas N, Megas G, Koskolou M
- No. 19** Low levels of hypohydration and endurance capacity during heavy exercise in untrained individuals
Otani H, Kaya M, Tsujita J, Hori K, Hori S
- No. 20** Importance of cerebral blood flow and oxygenation for motor performance in the heat
Rasmussen P, Secher NH, Nybo L
- No. 21** Enhanced cerebral CO₂ reactivity during strenuous exercise in man
Rasmussen P, Stie H-H, Nielsen B, Nybo L
AWARD-WINNING STUDY (YOUNG SCIENTISTS COMPETITION)
ORAL PRESENTATION ON MONDAY MORNING
- No. 22** Does accumulated muscle metabolites following moderate exercise enhance mechanoreflex modulation of sweating?
Shibasaki M, Yamaji M, Takatsuka S, Kawabata T, Takamata A, Kubo H
- No. 23** Possible role of the internal vertebral venous plexus during exercise in humans
Shido O, Maruyama M, Wada A, Oda K, Haque-Md A, Kitagaki H
- No. 24** Effect of partial body cooling on thermophysiological responses during cycling work in a hot environment
Hamada S, Torii M, Szygula Z, Adachi K
- No. 25** Circadian variation of thermal balance regulation during exercise: the effect of work intensity
Torii M, Hamada S, Sasaki T
- No. 26** Water ingestion attenuates the exercise-induced increase in a serum marker of blood-brain barrier permeability
Watson P, Black KE, Clark SC, Maughan RJ
- No. 27** Vascular responses in glabrous and nonglabrous skin with increasing body temperature during dynamic exercise
Yamazaki F, Sone R
- No. 28** Heat extraction through one hand enhances endurance when temperature is a performance limiting factor
Grahn DA, Heller HC
- No. 29** Predicted thermal responses for men with different fat compositions during immersion in cold water at two depths
Xu X, Castellani JW, Santee W, Kolka M

Saturday, March 4

POSTER SYMPOSIUM 3: NEURAL CONTROL: FROM SENSORS TO EFFECTORS

- No. 30** Daily rhythms of body core temperature and activity in TRPV1-KO and wild type mice: effects of feeding state
Szelényi Z, Kanizsai P, Garami A, Hummel Z, Szolcsányi J
- No. 31** Effect of hyperthermia on vagal bronchopulmonary sensory neurons: role of TRPV channels
Lee L-Y, Ni D, Ruan T
- No. 32** Gene chipping analysis of cultured warm sensitive PO/AH neurons
Bartfai T, Tabarean I, Conti B, Miyashiro K, Eberwine J
- No. 33** Effects of melatonin on thermoregulatory hypothalamic neurons in the white-footed mouse (*Peromyscus leucopus*)
Fetsch CR, Heideman PD, Griffin JD
- No. 34** P2X receptor-mediated calcium signaling in primary culture of rat median preoptic nucleus
Hitzel N, Hild D, Müller S, Rafalzik S, Gourine AV, Gerstberger R
- No. 35** Central integration of thermal and osmotic signals for thermoregulatory vasomotor response in rats
Kobayashi A, Kanosue K, Nagashima K
- No. 36** Functional MRI shows human medullary raphé responses to cooling the skin
McAllen R, Farrell M, Johnson J, Trevaks D, Cole L, McKinley M, Jackson G, Denton D, Egan G
- No. 37** Thermoregulatory activation of fusimotor neurons via the medullary raphé
McAllen R, Tanaka M, Owens N, Nagashima K, Kanosue K
- No. 38** Hypercapnia inhibits sympathetic outflow to brown adipose tissue via GABAergic input to the raphe pallidus
Madden CJ, Morrison SF
- No. 39** Central efferent pathways mediating skin cooling-evoked sympathetic thermogenesis in brown adipose tissue
Nakamura K, Morrison SF
- No. 40** Leptin-induced increases in brown adipose tissue (BAT) thermogenesis require activation of neurons in the dorsomedial hypothalamus (DMH)
Cao W-H, Morrison SF
- No. 41** Medullary serotonergic neurons and peripheral vasomotor tone during transitions from quiet to active sleep
Darnall RA, Sirlin E, Brown JW
- No. 42** Distinct cell populations in the rostral medullary raphe region mediate thermoregulation and pain modulation
Heinricher MM, Neubert MJ, Martenson ME

Saturday, March 4

- No. 43** Investigation of the role of hypocretin (orexin) neurons on the regulation of core body temperature using hypocretin-ataxin-3 mice
Brownell S, Sanchez-Alavez M, de Lecea L, Conti B
- No. 44** Transgenic mice with elevated hypothalamic temperature and reduced body core temperature
Conti B, Sanchez-Alavez M, deLecea L, Bartfai T
- No. 45** Primary effect of alpha-MSH on energy balance as influenced by thermal signals
Székely M, Garami A, Hartmann M, Pétervári E
- No. 46** Effect of cooling on alpha-adrenergic signaling in human-, nonhuman primate (NHP)-digital and NHP skin vessels
Smith TL, Callahan MF, Fuloria M, Watt SE, Jackson B, Wagner JD, Koman LA, Eckman DM
- No. 47** Cutaneous vasoconstrictor responses to norepinephrine are attenuated in older humans
Thompson CS, Holowatz LA, Kenney WL
- No. 48** Thermogenic action of catecholamines in human peripheral blood mononuclear cells
Janský L, Matoušková E, Stránská E
- No. 49** Metabolic characterization of the overexpression of FOXC2, a winged helix transcription factor, in adipocytes
Gowing A, Enerback S, Harper M-E

POSTER SYMPOSIUM 4: THERMOPHYSIOLOGY: BASIC CONCEPTS AND MODELS

- No. 50** The concept of “set point”; why is it so confuzing?
Kanosue K, Crawshaw LI, Nagashima K, Yoda T
- No. 51** Central state changes in brain activity with hand cooling in hot and cool environments
Simmons SE, McGlone FP, Jones DA
- No. 52** Different skin-surface cooling speeds do not affect thermoregulatory thresholds
Taniguchi Y, Marckstaller M, Lenhardt R, Kurz A
- No. 53** Influence of added body heat before or during cold exposure on finger temperature and manual function
Carrillo AE, Flouris AD, Cheung SS, Fowles JR, Westwood DA, Kruisselbrink LD, Murphy RJL

Saturday, March 4

- No. 54** Behavioral thermoregulation in cold environments is adjusted to changes in body heat content
Cheung SS, Flouris AD
- No. 55** Cold-induced vasodilatation may regulate body heat content rather than protect extremity integrity
Flouris AD, Cheung SS, Mekjavic IB
- No. 56** No trainability or spatial homogeneity of the cold-induced vasodilatation response in the foot
Reynolds LF, Cheung SS, Mekjavic IB
- No. 57** The distribution of thermal sweating on the foot
Taylor NAS, Caldwell JN, Mekjavic IB
- No. 58** Facial cold-induced vasodilation and skin temperature during exposure to cold wind
Ducharme MB, Brajkovic D
- No. 59** Personality traits and the response to thermal stress
Ducharme MB, LeBlanc J, Thompson M
- No. 60** Presence of facial CIVD and risk to develop frostbite during cold wind exposure
Ducharme MB, Brajkovic D
- No. 61** Partial- and whole-body thermal sensation and comfort
Part I: uniform environmental conditions
Arens E, Zhang H, Huizenga C
- No. 62** Partial- and whole-body thermal sensation and comfort
Part II: non-uniform environmental conditions
Arens E, Zhang H, Huizenga C
- No. 63** No evidence of heat-induced vasoconstriction in the locally heated finger of hyperthermic humans
Rein EB, Walløe L

POSTER SYMPOSIUM 5: PHARMACOLOGY OF THERMOREGULATION

- No. 64** Methylenedioxymethamphetamine (MDMA, ecstasy) and morphine interact to evoke synergistic hyperthermia
Benamar K, Tallarida RJ, Geller EB, Adler MW
- No. 65** MDMA (ecstasy) increases brown adipose tissue thermogenesis in conscious rats; reversal by clozapine
Blessing WW, Zilm A, Ootsuka Y

Saturday, March 4

- No. 66** Stimulation of dopamine D2-like receptors inhibits brown adipose tissue thermogenesis in conscious rats
Ootsuka Y, Blessing WW
- No. 67** Ethanol versus lipopolysaccharide-induced hypothermia: involvement of urocortin
Turek VF, Ryabinin AE
- No. 68** Effects of alcohol on thermoregulation during cold exposure in humans
Yoda T, Saito K, Nakamura M, Crawshaw LI, Nagashima K, Kanosue K
- No. 69** Augmented heat production underlies tolerance to nitrous oxide hypothermia in rats
Kaiyala KJ, Butt S, Ramsay DS
- No. 70** Urapidil enhances subcutaneous tissue oxygen tension during convective rewarming of mildly hypothermic rats
Ittner KP, Pawlik M, Zimmermann M, Taeger K, Faerber L
- No. 71** Effects of CGRP on tail skin temperature; a mouse model of hot flushes
Sanchez-Alavez M, Bartfai T
- No. 72** Impact of estrogen on thermoregulatory responses in rats
Nagashima K, Konishi M, Kobayashi A, Kano M
- No. 73** Antimalarial drug binding to heme maintained despite variations in temperature
Dascombe MJ, Dyas AM, Ismail FMD, Lloyd M, Morris H
- No. 74** Announcements

EXHIBITION

- Booth 1** Sable Systems International, Inc.
- Booth 2** Data Sciences International
- Booth 3** Prospective Concepts AG
- Booth 4** Mini Mitter, a Respironics company

22:00 Poster session and exhibition close.