International Society for
Autonomic Neuroscience
established 1995
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ISAN Programme

Thursday 25th July 2024

Time	Session/ Activity	Venue
13:00 – 14:00	**Welcome, Refreshments and Registration**	Great Hall
14:00 – 15:10	**Keynote: Andrew Allen, University of Melbourne, Australia** Vital interactions: Exploring the relationships between respiratory and autonomic neural networks. Sponsor: Elsevier (with an introduction to Autonomic Neuroscience: Basic and Clinical)	Bramall
15:10 – 16:00	**Poster Session 1**	Great Hall
15:30 – 16:00	**Afternoon Refreshments**	Great Hall
16:00 – 18:00	**Symposium Presentations Session 1:** **Theme: Bioelectronic Medicine** **Symposium Title: Bioelectronic Medicine** *Chairs: Ellis Meng, University of Southern California and Victor Pikov, Medipace Inc* **Daniel Chew, Galvani Bioelectronics** - Recent studies on splenic nerve stimulation in pigs and humans 120 minutes) **Victor Pikov, Medipace** - Inc preliminary data on sacral nerve stimulation in humans to treat colitis (20 minutes) **Jeff Ardell, University of California** – Axonal modulation therapy for bioelectronic treatment of cardiovascular diseases (20 minutes) **Chris Wilson, Loma Linda University** – Saving premature infants from sudden death using vagus nerve stimulation (20 minutes) **Jon Waataja, ReShape Lifesciences** – Bioelectronics for treating diabetes (20 minutes) Selected Abstracts to follow	Bramall

16:00 – 18:00	**Symposium Presentations Session 1:** **Theme: Cardiovascular** **Symposium Title: Central nervous control of blood pressure, brain blood flow, and cognitive health** Chairs: Emma Hart, University of Bristol and Sam Lucas, University of Birmingham **Alex Gourine, University College London** – Brain energy metabolism and the regulation of cerebral blood flow (20 minutes) **Fiona McBryde, University of Auckland** – Defending blood flow to the brain in hypertension, diabetes and ischemic stroke (20 minutes) **Emma Hart, University of Bristol** – Cerebrovascular variants and the role of the selfish brain in hypertension (20 minutes) **Sam Lucas, University of Birmingham** – Cerebral blood flow, aging and physiological stress (20 minutes)	G33
16:00 – 18:00	**Symposium Presentations Session 1:** **Theme: Integrative control** **Symposium Title: Brainstem integrator for viscerosensation and autonomic regulation** *Chairs: Andrew M Allen, University of Melbourne and Julian FR Paton, University of Auckland* **Ambre Linossier, Aix-Marseille University** – GABAergic neurons of the pre-Bötzinger complex regulate respiratory sinus arrhythmia and blood pressure via the autonomic nervous system (20 minutes) **Davi Moraes, University of São Paulo** – Medullary parafacial neurons control sympathetic activity and vascular function in physiological and pathophysiological conditions (20 minutes) **Zoe Adams, University of Bristol** – New insights into deep stimulation for correcting autonomic imbalance (20 minutes) **James P Fisher, University of Auckland** – Sympathetic neurocirculatory responses to central chemoreflex activation in human hypertension (20 minutes)	WG5
18:00 – 20:00	**Welcome Reception**	Great Hall

Friday 26th July 2024

Time	Session/ Activity	Venue
08:00 – 09:00	**Registration and Refreshments**	Great Hall
09:00 – 11:00	**Symposium Presentations Session 2** **Theme: Bioelectronics** **Symposium Title: Utilising NIH SPARC resources for ANS research** *Chairs: Peter Hunter and Felicia Qashu, Auckland Bioengineering Institute* **Jack Cheng, Ariege Bizanti & Mabelle Lin** – Spatial mapping of neural data with 3D scaffolds (20 minutes) **Nicole Pelot & Joost Wagenaar** – Vagus anatomy dashboard (20 minutes) **Igor Efimov & Alan Garny, University of Oxford** – Data visualisation and modelling to support cardiovascular control studies (20 minutes) **John Osborn & Maryann Martone** – SPARC Infrastructure supporting Functional studies of vagal stimulation (20 minutes)	Bramall
09:00 – 11:00	**Symposium Presentations Session 2** **Theme: Cardiovascular** **Symposium Title: You're so vein" – new insights into the function and autonomic regulation of the 'forgotten' venous circulation** *Chairs: Fiona McBryde and James Fisher, University of Auckland* **Tonja Emans, University of Auckland** – Sympathetic regulation of the 'forgotten' venous circulation – a new therapeutic target for blood pressure control? (20 minutes) **Davi Moraes, University of Sao Paulo** – Respiratory coupling of mesenteric venous sympathetic nerve activity – the influence of the carotid body (20 minutes) **Mickey Fan, University of Auckland** – Venous capacity and compliance in hypertensive adults: influence of hypoxia and hyperoxia (20 minutes) **Melanie Dani, Imperial College London** – New horizons in the ageing autonomic nervous system: orthostatic hypotension and supine hypertension (20 minutes)	G33

09:00 – 11:00	**Symposium Presentations Session 2** **Theme: Integrative control** **Symposium Title: Anatomical, functional, and molecular mapping of autonomic innervation of organs** *Chairs: Jack Cheng, University of Central Florida and John Furness, University of Melbourne* **Madeleine Di Natale, Australia/USA** - Spinal afferent innervation: the stomach-brain atlas **Nick Spencer, Australia** – Functional role of spinal afferent endings in the colon using novel wireless optogenetic device (20 minutes) **Jerry Yu, USA** – Integration of Molecular, Morphological, and Physiological Aspects of Mechanosensors in the Lung (20 minutes) **John Tompkins, USA** – Morphology, synaptics, and membrane excitability of intracardiac neurons from mice, pigs and humans: targets of clinical neuromodulation for cardiac disease (20 minutes) **Hanjun Wang, USA** – Cardiac Spinal Afferents: A New Therapeutic Target in Treating Chronic Heart Failure (20 minutes)	WG5
11:00 – 11:30	**Mid-morning Refreshments**	Great Hall
11:30 – 13:00	**Poster Session**	Great Hall
13:00 – 14:00	**Lunch**	Great Hall
14:00 – 15:00	**Keynote 2: Melanie Gareau, University of California, USA** “It takes guts: The developing microbiota-gut-brain axis” Sponsor: BBSRC **BBSRC Presentation**	Bramall Bramall
15:00 – 15:30	**Afternoon Refreshments**	Great Hall

15:30 – 17:30	**Symposium Presentations Session 3** **Theme: Integrative control** **Symposium Title: Neuroimaging of cardiovascular and respiratory control in humans** *Chair: Vaughan Macefield, Monash University* **Luke Henderson, University of Sydney** – Identification of the sympathetic connectome in humans (20 minutes) **Rebecca Glarin, University of Melbourne** – Ultra-high-field fMRI of human brainstem nuclei involved in the generation of sympathetic outflow (20 minutes) **Kevin Shoemaker, University of Western Ontario** – The roles of the forebrain in cardiovascular control in exercising humans (20 minutes) **Olivia Harrison, University of Otago** – Ultra-high-field imaging of networks related to breathing and breathlessness (20 minutes)	Great Hall
15:30 – 17:30	**Symposium Presentations Session 3** **Theme: Bioelectronics** **Symposium Title: Working towards selective vagus nerve stimulation to modulate autonomic function** *Chairs: Lindsea Booth, Florey Institute and Alexander Gourine, University College London* **Nicole Thompson, University College London** – Organotopic organization of the porcine mid-cervical vagus nerve (20 minutes) **James Fallon, University of Melbourne** – Stimulation parameters for directional vagus nerve stimulation (20 minutes) **Stuart McDougall, The Florey** - Selectively targeting the afferent vagus (20 minutes)	Bramall
15:30 – 17:30	**Symposium Presentations Session 3** **Theme: Cardiovascular** **Symposium Title: Breaking news in cardiac autonomic regulation** *Chair: Keith Brain, University of Birmingham* Selected Abstracts to follow	G33

15:30 – 17:30	**Symposium Presentations Session 3** **Theme: Gut and Metabolism** **Symposium Title: Recent insights into the role of the vagus nerve in brain-gut communication and therapeutic implications of vagus nerve stimulation in the treatment of gastrointestinal disorders** *Chairs: Valentin Pavlov, Feinstein Institutes for Medical Research and Bruno Bonaz, CHU Grenoble* **Nicole Pelot, Duke University** – Quantified anatomy of human vagus nerves from brainstem to abdomen: defining multi-scale computational models (20 minutes) **Sophie Payne, Bionics Institute** – Abdominal vagus nerve stimulation as a treatment of IBD: current and new approaches (20 minutes) **Qasim Aziz, Queen Mary University of London** – Role of the vagus nerve in modulating visceral pain hypersensitivity, intestinal permeability and inflammation in health and GI disease (20 minutes) **Bruno Bonaz, CHU Grenoble** – Invasive vagus nerve stimulation in Crohn's disease: A 10-year prospective study follow-up (20 minutes)	WG5
17:30 – 19:00	**Free Time**	
19:00 – 00:00	**Dinner**	Council House

Saturday 27th July 2024

Time	Session/ Activity	Venue
08:00 – 09:00	**Registration and Refreshments**	Great Hall
09:00 – 11:00	**Symposium Presentations Session 4** **Theme: ECR focus: Breaking abstracts**	Bramall
09:00 – 11:00	**Symposium Presentations Session 4** **Theme: Gut and Metabolism** **Symposium Title: Targeting GI vasodilatory hormones for the treatment of postprandial syndromes in autonomic disorders** *Chairs: Cyndya A. Shibao, Vanderbilt Autonomic Dysfunction Center* **Christopher Mathias, Queen Square Institute of Neurology** – Postprandial syndromes in autonomic disorders: pathophysiology and treatment (20 minutes) **Cyndya A. Shibao, Vanderbilt Autonomic Dysfunction Center** – Increased Glucose-dependent insulinotropic polypeptide (GIP) in postprandial syndromes (20 minutes) **Simon Veedfald, University of Copenhagen** – Neural modulation of entero-pancreatic hormone secretion (20 minutes) **Lærke Smidt, University of Copenhagen** – Glucose-dependent insulinotropic polypeptide receptor antagonism in humans (20 minutes)	G33
09:00 – 11:00	**Symposium Presentations Session 4** **Theme: Integrative control** **Symposium Title: Neural control & autonomic regulation during exercise: recent innovations** *Chairs: Satoshi Koba, Tottori University and Marc Kaufman, Penn State College of Medicine* **Markus Amann, University of Utah** – The exercise pressor reflex: a flow-raising or a pressure-raising mechanism? (20 minutes) **Satoshi Koba, Tottori University** – Subcortical circuit mechanisms for central command regulation of sympatho-motor coordination (20 minutes) **Vaughan Macefield, Monash University** – The relative contributions of central command and the metaboreflex to the increases in sympathetic vasoconstrictor drive to contracting muscle (20 minutes) **Masaki Mizuno, University of Texas Southwestern Medical Center** – An integrative approach to better understand the mechanisms of the exercise pressor reflex in health and disease (20 minutes)	WG5
11:00 – 11:30	**Mid-morning Refreshments**	Great Hall

11:30 – 13:00 **Symposium Presentations Session 5** Bramall

Theme: Gut and Metabolism

Symposium Title: Glucose sensing affecting autonomic activity

Chairs: Fiona McBryde and Pratik Thakkar, University of Auckland

Stefan Trapp, University College London – Are GLP-1 producing pre-proglucagon neurons of the lower brainstem a useful target for obesity and diabetes treatment? (20 minutes)

Silvia V Conde, NOVA Medical School – Carotid body, autonomic function and dysmetabolism: is there something new under the sun? (20 minutes)

Pratik Thakkar, University of Auckland – GLP1 receptor agonist ameliorates high blood pressure and high blood sugar in a rat model of “glucotension” (20 minutes)

Audrys Pauza, University of Auckland – Glucose sensing by peripheral chemoreceptors: mechanisms and role of incretin hormones (20 minutes)

11:30 – 13:00 **Symposium Presentations Session 5** G33

Theme: Integrative control

Symposium Title: In an animal model of depression, the impact of endocannabinoids on vagal heart rate variability

Chairs: Nicola Montano, University of Milan and Caroline Sévoz-Couche, Sorbonne Université

Andrea Sgoifo, University of Parma – Antidepressant activity and cardioprotective effects of endocannabinoid neuromodulation enhancement in socially stressed rats (20 minutes)

Hugo Bottemanne, Sorbonne Université – Evaluation of Ketamine effects on autonomic nervous system in patients with depressive disorders (20 minutes)

Xiaoran Zhang, Sun Yat-sen University – Mesenchymal Stromal Cells Alleviate Murine Depressive and Anxiety-like Behaviors via a Lung Vagal-to-Brain Axis (20 minutes)

Angelica Carandina, University of Milan – The transcutaneous auricular vagus nerve stimulation as a neuromodulatory technique in unipolar and bipolar depression: evidence from DEPONEST study (20 minutes)

11:30 – 13:00	**Symposium Presentations Session 5** **Theme: Bioelectronics** **Symposium Title: Interrogating the physiology of the human vagus nerve** *Chair: Vaughan Macefield Monash University* **Nikki Pelot, Duke University** – Microscopic anatomy and biophysical properties of the human vagus nerve (20 minutes) **Matteo Maria Ottaviani, University of Ancona** – Ultrasound-guided microneurography of the human vagus nerve (20 minutes) **David Farmer, Monash University** – Single-unit recordings of vagal afferents with cardiac rhythmicity (20 minutes) **Mikaela Patros, Monash University** – Activation of vagal axons by vagal nerve stimulation (20 minutes)	WG5
13:00 – 14:00	**Lunch**	Great Hall
13:15 - 14:00	**ISAN AGM** *Chair: Valentine Pavlov* International Secretary - Vaughan Macefield	Great Hall
14:00 – 15:00	**Keynote 3: Jessica Filosa, Augusta University, USA** Blood pressure variability impaired neurovascular outputs in middle-aged mice	Bramall
15:00 – 16:00	**Poster Session 3**	Great Hall
15:30 – 16:00	**Afternoon Refreshments**	Great Hall
16:00 – 16:30	**Closing ceremony**	Bramall