



## 31<sup>ST</sup> INTERNATIONAL SYMPOSIUM ON THE AUTONOMIC NERVOUS SYSTEM

**AAS Virtual Meeting  
November 6-7, 2020**

### Meeting Program

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| <b>FRIDAY, NOVEMBER 6, 2020</b> |   |
| <b>Clinical Session 1</b>       |   |
| <b>Chair: Wolfgang Singer</b>   |   |
| 10:00-11:40 AM Eastern          |   |
| 10:00-10:05 AM                  | <b>Welcome</b><br>Satish R. Raj, M.D.<br>President, American Autonomic Society                                |
| 10:05-10:10 AM                  | <b>Introduction</b><br>Wolfgang Singer, M.D.<br>Rochester, Minnesota, USA                                     |
| 10:10-10:40 AM                  | <b>MSA Plenary Lecture</b><br>Sonja W. Scholz, M.D., Ph.D.<br>Bethesda, Maryland, USA                         |
| 10:40-10:50 AM                  | Q&A   |
| 10:50-11:10 AM                  | Alpha-Synucleinopathy: Making & Delivering the Diagnosis<br>Elizabeth Coon, M.D.<br>Rochester, Minnesota, USA |
| 11:10-11:15 AM                  | Q&A   |
| 11:15-11:35 AM                  | Urogenital Issues in Autonomic Disorders<br>Jalesh Panicker, M.D.<br>London, United Kingdom                   |
| 11:35-11:40 AM                  | Q&A   |
| 11:40-11:55 AM                  | <b>Break 1</b>  |
| <b>Oral Abstract Session A</b>  |   |
| <b>Chairs: Victoria Claydon</b> |   |
| 11:55 AM-1:25 PM Eastern        |   |
| 11:55 AM-12:05 PM               | <b>Session Overview</b><br>Victoria Claydon, Ph.D.<br>Burnaby, BC, Canada                                     |

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| 12:05-12:15 PM  | <b>Oral Abstract Presentation OA1 (Virtual Poster 27)</b><br>Control of heart function by nucleus ambiguus neurons<br><u>Tatiana C. Coverdell</u><br>Charlottesville, Virginia, USA  |
| 12:15-12:20 PM  | Q&A  |
| 12:20-12:30 PM  | <b>Oral Abstract Presentation OA2 (Virtual Poster 4)</b><br>Pathophysiological meaning of alpha-synuclein deposition in sympathetic noradrenergic nerves in skin, submandibular gland, and heart<br><u>Risa Isonaka, Ph.D.</u><br>Bethesda, Maryland, USA                    |
| 12:30-12:35 PM  | Q&A  |
| 12:35-12:45 PM  | <b>Oral Abstract Presentation OA3 (Virtual Poster 35)</b><br>Muscle metaboreflex control of sympathetic activity is preserved in healthy males following acute intermittent hypercapnic hypoxia<br><u>Brooke M. Shafer</u><br>Kelowna, BC, Canada                            |
| 12:45-12:50 PM  | Q&A  |
| 12:50-12:55 PM  | <b>Lightning Abstract Presentation LA1 (Virtual Poster 1)</b><br>Sympathetic noradrenergic deficiency in Lewy body diseases is cardioselective<br><u>Guillaume Lamotte, M.D.</u><br>Bethesda, Maryland, USA  |
| 12:55-1:00 PM   | <b>Lightning Abstract Presentation LA2 (Virtual Poster 2)</b><br>Cutaneous alpha-synuclein deposition across the synucleinopathies<br><u>Christopher H. Gibbons, M.D.</u><br>Boston, Massachusetts, USA  |
| 1:00-1:05 PM  | <b>Lightning Abstract Presentation LA3 (Virtual Poster 3)</b><br>Alpha-synuclein oligomers and neurofilament light chain in spinal fluid differentiate multiple system atrophy from Lewy body synucleinopathies<br><u>Wolfgang Singer, M.D.</u><br>Rochester, Minnesota, USA |
| 1:05-1:10 PM  | <b>Lightning Abstract Presentation LA4 (Virtual Poster 34)</b><br>The effect of analgesic fentanyl administration on sympathetic and cardiovascular responses in humans during simulated hemorrhage<br><u>Joseph C. Watso, Ph.D.</u><br>Dallas, Texas, USA                   |
| 1:10-1:15 PM  | <b>Lightning Abstract Presentation LA5 (Virtual Poster 19)</b><br>Activation of the rostral ventrolateral medulla results in differential increases in adrenal versus splanchnic sympathetic nerve activity<br><u>Soumya S. Kulkarni, M.Sc.</u><br>Detroit, Michigan, USA    |
| 1:15-1:25 PM  | Open Panel Q&A   |
| 1:25-1:40 PM  | <b>Break 2</b>   |
| <b>Interactive Clinical Case Presentations: The 3rd Ultimate Autonomic Challenge</b><br><b>Organizer: Juan Guzman</b><br>1:40-3:10 PM Eastern |  |
| 1:40-1:45 PM  | <b>Introduction</b><br><u>Juan Guzman, M.D.</u><br>Hamilton, ON, Canada  |
| 1:45-2:00 PM  | <b>Clinical Case 1</b><br><b>Moderator: Howard Snapper</b>   |

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| 2:00-2:10 PM   | Q&A   |
| 2:10-2:25 PM   | <b>Clinical Case 2</b><br><b>Moderator: Mohammed Numan</b>  |
| 2:25-2:35 PM   | Q&A   |
| 2:35-2:50 PM   | <b>Clinical Case 3</b><br><b>Moderator: Steven Vernino</b>  |
| 2:50-3:00 PM   | Q&A   |
| 3:00-3:10 PM   | Open Mic and Closing Remarks  |
| <b>SATURDAY, NOVEMBER 7, 2020</b>  |   |
| <b>Clinical Session 2: Debates</b><br><b>Chair: Steven Vernino</b><br>10:00-11:25 AM Eastern |   |
| 10:00-10:05 AM   | <b>Welcome</b><br>Steven Vernino, M.D., Ph.D.<br>Dallas, Texas, USA   |
| 10:05-10:45 AM   | <b>IVIG Debate: "IVIG should be used broadly in POTS patients with autoimmune disorders"</b><br><br>IVIG Debate Intro (2 min)<br>Steven Vernino, M.D. Ph.D.<br>Dallas, Texas, USA<br><br>PRO - IVIG should be used broadly (10 min)<br>Jill R. Schofield, M.D.<br>Denver, CO, USA<br><br>CON - IVIG should NOT be used broadly (10 min)<br>Christopher H. Gibbons, M.D.<br>Boston, Massachusetts, USA<br><br>PRO Rebuttal - Jill R. Schofield (5 min)<br><br>CON Rebuttal - Christopher H. Gibbons (5 min)<br><br>Q&A (8 min) |

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| 10:45-11:25 AM   | <p><b>Peds Debate: “We should not require a heart rate increase of 40 bpm to diagnose POTS in kids”</b></p> <p>Peds Debate Intro (2 min)<br/> <u>Mohammed Numan, M.D.</u><br/> Houston, Texas, USA</p> <p>PRO - We should NOT require the HR increase (10 min)<br/> <u>Blair P. Grubb, M.D.</u><br/> Toledo, Ohio, USA</p> <p>CON - We should require the HR increase (10 min )<br/> <u>Philip Fischer M.D.</u><br/> Rochester, Minnesota, USA</p> <p>PRO Rebuttal - Blair P. Grubb (5 min)</p> <p>CON Rebuttal - Philip Fischer (5 min)</p> <p>Q&amp;A (8 min)</p> |
| 11:25-11:40 AM   | <b>Break 3</b>  |
| <b>Oral Abstract Session B</b><br><b>Chair: Amy Arnold</b><br>11:40 AM-1:10 PM Eastern |   |
| 11:40-11:50 AM   | <p><b>Session Overview</b><br/> <u>Amy Arnold, Ph.D.</u><br/> Hershey, Pennsylvania, USA</p>  |
| 11:50-12:00 PM   | <p><b>Oral Abstract Presentation OB1 (Virtual Poster 70)</b><br/> Chronic transcutaneous vagal nerve stimulation in hyperadrenergic POTS patients<br/> <u>Dana Shiffer, M.D.</u><br/> Milan, Italy</p>  |
| 12:00-12:05 PM   | Q&A   |
| 12:05-12:15 PM   | <p><b>Oral Abstract Presentation OB2 (Virtual Poster 56)</b><br/> Midodrine improves quality of life in patients with vasovagal syncope: results from the Prevention of Syncope Trial IV<br/> <u>Lucy Y. Lei, B.Sc.</u><br/> Calgary, AB, Canada</p>  |
| 12:15-12:20 PM   | Q&A   |
| 12:20-12:30 PM   | <p><b>Oral Abstract Presentation OB3 (Virtual Poster 57)</b><br/> Transient early orthostatic hypotension – a subtype of orthostatic hypotension<br/> <u>Priyanka Shekhawat, M.D.</u><br/> Boston, Massachusetts, USA</p>   |
| 12:30-12:35 PM   | Q&A   |
| 12:35-12:40 PM   | <p><b>Lightning Abstract Presentation LB1 (Virtual Poster 36)</b><br/> In-vivo recordings from the human vagus nerve using ultrasound-guided microneurography<br/> <u>Vaughan G. Macefield, Ph.D.</u><br/> Melbourne, Australia</p>   |

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| 12:40-12:45 PM  | <b>Lightning Abstract Presentation LB2 (Virtual Poster 37)</b><br>Evidence of sympathetic regulation of the choroid circulation by baroreceptors in humans<br><u>Seth W. Holwerda, Ph.D.</u><br>Iowa City, Iowa, USA   |
| 12:45-12:50 PM  | <b>Lightning Abstract Presentation LB3 (Virtual Poster 53)</b><br>Orthostatic blood pressure and arterial stiffness in persons with spinal cord injury: the effect of the renin-angiotensin-aldosterone system<br><u>Caitlyn G. Katzelnick</u><br>Bronx, New York, USA   |
| 12:50-12:55 PM  | <b>Lightning Abstract Presentation LB4 (Virtual Poster 54)</b><br>Frequency of injuries associated with syncope in the prevention of syncope trials<br><u>Juliana G. Jorge</u><br>Calgary, AB, Canada  |
| 12:55-1:00 PM   | <b>Lightning Abstract Presentation LB5 (Virtual Poster 55)</b><br>Characterizing the physiology of an active stand in initial orthostatic hypotension<br><u>Nasia Sheikh, B.Sc.</u><br>Calgary, AB, Canada   |
| 1:00-1:10 PM  | Open Panel Q&A   |
| 1:10-1:25 PM  | <b>Break 4</b>   |
| <b>Clinical Session 3</b><br><b>Chair: Satish Raj</b><br>1:25-3:00 PM Eastern |  |
| 1:25-1:30 PM  | <b>Welcome</b><br><u>Satish R. Raj, M.D.</u><br>Calgary, AB, Canada  |
| 1:30-2:10 PM  | <b>Syncope Debate: "Head-Up Tilt Tests have no role in the investigation of syncope"</b><br><br>Syncope Debate Intro (2 min)<br><u>Satish R. Raj, M.D.</u><br>Calgary, AB, Canada<br><br>PRO - HUT have NO role in Syncope W/U (10 min)<br><u>Benjamin D. Levine, M.D.</u><br>Dallas, Texas, USA<br><br>CON - HUT does have a role in Syncope W/U (10 min)<br><u>Robert Sheldon, M.D., Ph.D.</u><br>Calgary, AB, Canada<br><br>PRO Rebuttal - Benjamin D. Levine (5 min)<br><br>CON Rebuttal - Robert Sheldon (5 min)<br><br>Q&A (8 min) |

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| 2:10-2:30 PM | Headache & POTS; When to think about Spontaneous CSF Leaks<br>Melissa Cortez, D.O.<br>Salt Lake City, Utah, USA |
| 2:30-2:35 PM | Q&A   |
| 2:35-3:00 PM | <b>AAS Business Meeting and Closing Remarks</b><br>Satish R. Raj, M.D.<br>President, American Autonomic Society |

**AAS VIRTUAL POSTER SESSION**  
**FRIDAY, NOVEMBER 6 – SATURDAY, NOVEMBER 7, 2020**

**AUTONOMIC FAILURE: PAF, MSA, PARKINSON'S DISEASE**

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| Virtual Poster #1  | Sympathetic noradrenergic deficiency in Lewy body diseases is cardioselective<br>G. Lamotte, C. Holmes, P. Sullivan, D.S. Goldstein<br>Bethesda, MD, USA   |
| Virtual Poster #2  | Cutaneous alpha-synuclein deposition across the synucleinopathies<br>C.H. Gibbons, N. Wang, S. Rajan, D.S. Kern, J.A. Palma, H. Kaufman, R. Freeman<br>Boston, MA, USA   |
| Virtual Poster #3  | Alpha-synuclein oligomers and neurofilament light chain in spinal fluid differentiate multiple system atrophy from Lewy body synucleinopathies<br>W. Singer, A.M. Schmeichel, M. Shahnawaz, J.D. Schmelzer, B.F. Boeve, D.M. Sletten, T.L. Gehrking, J.A. Gehrking, A.D. Olson, R. Savica, M.D. Suarez, C. Soto, P.A. Low<br>Rochester, Minnesota, USA |
| Virtual Poster #4  | Pathophysiological meaning of alpha-synuclein deposition in sympathetic noradrenergic nerves in skin, submandibular gland, and heart<br>R. Isonaka, P. Sullivan, D.S. Goldstein<br>Bethesda, Maryland, USA   |
| Virtual Poster #5  | Intervening effects of orthostatic blood pressure change on subcortical atrophy and cognition in de novo and drug-naïve Parkinson's disease<br>S.-W. Yoo, J.-S. Kim<br>Seoul, Republic of Korea  |
| Virtual Poster #6  | Delayed orthostatic hypotension in Parkinson's disease<br>S.-W. Yoo, J.-S. Kim<br>Seoul, Republic of Korea   |
| Virtual Poster #7  | Hemodynamic effects and cardiovascular safety of once-daily oral ampreloxtine (TD-9855), a norepinephrine reuptake inhibitor, in healthy adults and subjects with neurogenic orthostatic hypotension<br>S.R. Raj, L. Norcliffe-Kaufmann, W. Wang, B. Haumann, R. Vickery<br>Calgary, AB, Canada  |
| Virtual Poster #8  | Integration of palliative medicine into a multidisciplinary clinic for multiple system atrophy<br>E.A. Coon, P. Stevens, C. Chou, M. Suarez, P. Sandroni, J.H. Bower, F. Ali, P.A. Low, W. Singer, L. Rhee<br>Rochester, Minnesota, USA  |
| Virtual Poster #9  | Association between cardiovascular autonomic control and work ability index in patients with pure autonomic failure<br>A.R. Zamunér, B. Cairo, A. Porta, D. Shiffer, R. Fornerone, M. Minonzio, A. Herrera-Santelices, R. Furlan, F. Barbic<br>Maule, Chile  |
| Virtual Poster #10 | Objective longitudinal evaluation of autonomic function in isolated REM sleep behavior disorder<br>L. Baldelli, A. Querzani, L. Sambati, G. Calandra-Buonaura, P. Guaraldi, F. Baschieri, F. Provini, P. Cortelli<br>Bologna, Italy  |

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| Virtual Poster #11  | Symptoms of sympathetic dysfunction in patients with synucleinopathy referred for evaluation in a Chilean autonomic laboratory<br>J. Idiaquez, J.C. Casar, J.F. Idiaquez, R. Iturriaga<br>Santiago, Chile   |
| Virtual Poster #12  | Decreased sympathetic activity is associated with cognitive decline in Parkinson's disease<br>G.R. Popov, M.A. Lebedeva, D.V. Zhuravlev, A.A. Yakovlev, A.B. Guekht<br>Moscow, Russia   |
| Virtual Poster #13  | M-STAR, an ongoing Phase 3 study in participants with multiple system atrophy–baseline characteristics<br>J.-A. Palma, A. Ellenbogen, R. Freeman, G. Höglinger, G. L'Italien, H. Kaufmann, A. Lang, P. Low, W. Meissner, H. Morris, S. Perlman, W. Poewe, J. Schmähmann, W. Singer, S. Vernino, G. Wenning, V. Wirtz, I.A. Qureshi; for the M-STAR Study Investigators<br>New York, New York, USA |
| <b>AUTONOMIC NEUROPATHIES: DIABETIC, AUTOIMMUNE AND OTHER</b>   |   |
| Virtual Poster #14  | Inflammatory small fiber sensory and autonomic neuropathy with prominent dysgeusia<br>J. Fernandez, G. Cook<br>Bethesda, Maryland, USA  |
| Virtual Poster #15  | Sudomotor dysfunction in taxanes-induced peripheral neurotoxicity (CIPN) graded using the Total Neuropathy Score-Reduced in breast cancer patients<br>S.-Y. Kim<br>Ulsan, Korea   |
| Virtual Poster #16  | Response to cold stress stimulus in diabetic vasculopathy: a pulse volume study<br>S. Tripathi, E. Khandelwal<br>Raipur, India  |
| Virtual Poster #17  | Does subclinical vitamin B12 deficiency alter the normal autonomic modulation during pregnancy?<br>S. Sharma, S. Sucharita<br>Bangalore, India  |
| Virtual Poster #18  | Small fiber neuropathy among Gulf War Veterans evaluated at the WRIISC<br>E.C. Shadiack, O. Osinubi, C. Bhate, A. Gruber-Fox, L. Patrick-DeLuca, P. Cohen, D. Helmer<br>East Orange, New Jersey, USA  |
| <b>AUTONOMIC REGULATION: BASIC SCIENCE &amp; ANIMAL STUDIES</b> |   |
| Virtual Poster #19  | Activation of the rostral ventrolateral medulla results in differential increases in adrenal versus splanchnic sympathetic nerve activity<br>S.S. Kulkarni, N.A. Mischel, P.J. Mueller<br>Detroit, Michigan, USA  |
| Virtual Poster #20  | Cerebral autoregulation associated with falls in older persons with orthostatic hypotension?<br>N.I. Saedon, C.H. Goh, J. Frith, W.A.W. Ahmad, K.S. Tan, S.B. Kamaruzzaman, M.P. Tan<br>Kuala Lumpur, Malaysia  |
| Virtual Poster #21  | Norepinephrine transporter saturation at physiological sympathetic firing rates in the murine heart<br>L.L. Cao, J.M. Marshall, L. Fabritz, K.L. Brain<br>Birmingham, United Kingdom  |



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| Virtual Poster #22                           | Direct recording of rat vagal tone<br><u>J.T. Marmorstein</u> , G.A. McCallum, D.M. Durand<br>Cleveland, Ohio, USA   |
| Virtual Poster #23                           | Vagal reactivation after stress testing is associated with vagal deactivation during orthostatic testing in women in the luteal phase of the menstrual cycle<br><u>G.M.R. Cunha</u> , E.M.K.K. Soares, C.J.G. da Cruz, L.G.G. Porto, D.S. Martin, M. Morlim, G.E. Molina<br>Brasília, Brazil |
| Virtual Poster #24                           | High fat diet-induced adaptations in cardiac vagal motor neuron electrophysiology in the pathogenesis of cardiovascular disease<br><u>L. Espinoza</u> , C.R. Boychuk<br>San Antonio, Texas, USA  |
| Virtual Poster #25                           | Evidence for signaling plasticity in preganglionic parasympathetic motor neurons in the dorsal motor nucleus of the vagus as a contributor to the regulation of pancreatic alpha cell regulation<br><u>S. Fedorchak</u> , M. Lopez, T. Fujikawa, C.R. Boychuk<br>San Antonio, Texas, USA     |
| Virtual Poster #26                           | Cardiovascular deconditioning induces synaptic and neuronal plasticity in the nucleus tractus solitarii of rats<br><u>L. Lima-Silveira</u> , D. Martinez, E.M. Hasser, D.D. Kline<br>Columbia, Missouri, USA   |
| <b>CARDIAC AUTONOMIC INNERVATION: HUMANS</b> |  |
| Virtual Poster #27                           | Control of heart function by nucleus ambiguus neurons<br><u>T.C. Coverdell</u> , R.-J. Abraham-Fan, N.M. Schiavone, M. Crook, S.B. Abbott, J.N. Campbell<br>Charlottesville, Virginia, USA   |
| Virtual Poster #28                           | Deep breathing impacts blood pressure to a greater degree in individuals with cervical spinal cord injury than able-bodied controls<br><u>M.T Maher</u> , J.P. Weir, W.A. Bauman, J.M. Wecht<br>Bronx, New York, USA   |
| Virtual Poster #29                           | Impact of angiotensin receptor neprilysin inhibitors on blood pressure variability in heart failure<br><u>S. Nathaniel</u> , S. McGinty, D.G. Edwards, W.B. Farquhar, M.A.H. Witman, V. Hosmane, M.M. Wenner<br>Newark, Delaware, USA  |
| Virtual Poster #30                           | Assessment of endothelial dysfunction in sickle cell disease - an insight into vaso crisis<br><u>E. Khandelwal</u> , M. Kumar, S. Tripathi<br>Raipur, India  |
| Virtual Poster #31                           | Respiratory neuroplasticity to acute intermittent hypercapnic hypoxia in humans<br><u>C.V. Brown</u> , T.D. Vermeulen, B.M. Shafer, T.J.R. Stuckless, G.E. Foster<br>Kelowna, BC, Canada   |
| Virtual Poster #32                           | Orthostatic tachycardia and functional cardiac response following strict head-down-tilt bedrest<br><u>F. Hoffmann</u> , J. Rabineau, D. Mehrkens, B.W. Johannes, E. Caiani, P.-F. Migeotte, J. Jordan, J. Tank<br>Cologne, Germany   |
| Virtual Poster #33                           | Heart rate variability in healthcare workers with and without preschool children<br><u>B. De Maria</u> , V. De Grazia, G. Casseti, L. Clementi, F. Perego, A. Porta, L.A.  |

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|  | Dalla Vecchia<br>Milan, Italy  |
| <b>CARDIOVASCULAR AUTONOMIC REFLEXES IN HUMANS, INCLUDING MICRONEUROGRAPHY</b> |  |
| Virtual Poster #34   | The effect of analgesic fentanyl administration on sympathetic and cardiovascular responses in humans during simulated hemorrhage<br>J.C. Watso, M. Huang, L.N. Belval, F.A. Cimino III, J.M. Hendrix, C. Hinojosa-Laborde, C.G. Crandall<br>Dallas, Texas, USA            |
| Virtual Poster #35   | Muscle metaboreflex control of sympathetic activity is preserved in healthy males following acute intermittent hypercapnic hypoxia<br>B.M. Shafer, T.D. Vermeulen, A.V. Incognito, M. Nardone, A.L. Teixeira, J. Benbaruj, P.J. Millar, G.E. Foster<br>Kelowna, BC, Canada |
| Virtual Poster #36   | In-vivo recordings from the human vagus nerve using ultrasound-guided microneurography<br>M.M. Ottaviani, L. Wright, T. Dawood, V.G. Macefield<br>Pisa, Italy  |
| Virtual Poster #37   | Evidence of sympathetic regulation of the choroid circulation by baroreceptors in humans<br>S.W. Holwerda, R.H. Kardon, R. Hashimoto, J.K. Nellis, J.M. Full, G.L. Pierce<br>Iowa City, Iowa, USA  |
| Virtual Poster #38   | Muscle sympathetic single-unit response patterns during graded muscle metaboreflex activation in young healthy adults<br>A.V. Incognito, M. Nardone, A.L. Teixeira, J.B. Lee, M.M. Kathia, P.J. Millar<br>Guelph, ON, Canada   |
| Virtual Poster #39   | Six months of exercise-based cardiac rehabilitation enhances sympathetic neural recruitment strategies during maximal end-inspiratory apnea<br>A.W. D'Souza, M.B. Badrov, S. Lalande, N. Suskin, J.K. Shoemaker<br>London, ON, Canada                                      |
| Virtual Poster #40   | Effect of sensory blockade and rate of sensory stimulation on local heating induced axon reflex response in facial skin<br>K. Metzler-Wilson, T.E. Wilson, S.M. Ausmus, A. Sventeckis<br>Indianapolis, Indiana, USA  |
| Virtual Poster #41   | Cardiorespiratory responses to upper and lower body isometric exercise or passive movement<br>T.J. Pereira, H. Edgell<br>Toronto, ON, Canada   |
| Virtual Poster #42   | Influence of sex on neural coding strategies during isometric handgrip in young adults<br>L.N. Shoemaker, A.T. Robinson, J.C. Watso, J.L. Greaney, M.M. Wenner<br>Newark, Delaware, USA  |
| Virtual Poster #43   | Baroreflex sensitivity in premenopausal and postmenopausal women<br>S.J. McGinty, E.L. Matthews, J.L. Greaney, M.M. Wenner<br>Newark, Delaware, USA  |
| Virtual Poster #44   | Sympathetic neural response to acute thermal sensations<br>H.A. Cunningham, J.R. Carter<br>Houghton, Michigan, USA   |
| Virtual Poster #45   | Divergent autonomic responses to tonic pain: what happens to baroreflex control of blood pressure?   |

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|   | C.E. Taylor, S. Kobuch, J. Wu, A. Burton, V.G. Macefield<br>Sydney, Australia  |
| Virtual Poster #46  | Exploring interactions between apneic and baroreflex-mechanisms governing sympathetic neural recruitment strategies in human muscle sympathetic nerve activity<br>B.S. Kulas, S.A. Klassen, M.E. Moir, J.K. Shoemaker<br>London, ON, Canada                      |
| Virtual Poster #47  | Impact of maternal obesity and sleep apnea on resting muscle sympathetic nerve activity during pregnancy: a pilot study<br>S.L. Hissen, J. Yoo, A.M. Clark, R. Takeda, Q. Fu<br>Dallas, Texas, USA   |
| <b>CEREBRAL BLOOD FLOW REGULATION</b>                           |  |
| Virtual Poster #48  | Elevated cerebral blood flow in individuals with pure autonomic failure<br>K.R. Hay, P. Trujillo, O.C. Roman, S.Y. Paranjape, E.M. Garland, C.A. Shiao, I. Biaggioni, M.J. Donahue, D.O. Claassen<br>Nashville, Tennessee, USA                                   |
| Virtual Poster #49  | Cerebrovascular compliance is regulated by sympathetic and cholinergic inputs<br>M.E. Moir, J.W. Hamner, C.O. Tan, J.K. Shoemaker<br>London, ON, Canada  |
| <b>GASTROINTESTINAL &amp; UROGENITAL SYSTEMS, IBS, CYSTITIS</b> |  |
| Virtual Poster #50  | Impact of patisiran, an RNAi therapeutic, on diarrhea symptoms in patients with hereditary transthyretin-mediated amyloidosis<br>L. Obici, A. González-Duarte, M. Waddington-Cruz, Q. Dinh, H. Lin, M. Merkel, Y. Wang, M. Ueda<br>Cambridge, Massachusetts, USA |
| Virtual Poster #51  | Quantifiable gastrointestinal dysmotility in idiopathic autonomic neuropathy<br>J. Langford, L. Millsap, L.A. Pace, J. Hemp, M.M. Cortez<br>Salt Lake City, Utah, USA  |
| Virtual Poster #52  | Gastrointestinal dysmotility is common in autonomic nervous system disorders and has important implications for clinical management<br>L.A. Pace, J. Hemp, J. Langford, L. Millsap, D. Ball, M.M. Cortez<br>Salt Lake City, Utah, USA                            |
| <b>ORTHOSTATIC HYPOTENSION &amp; SYNCOPE</b>                    |  |
| Virtual Poster #53  | Orthostatic blood pressure and arterial stiffness in persons with spinal cord injury: the effect of the renin-angiotensin-aldosterone system<br>C.G. Katzelnick, J.P. Weir, G.P. Zipp, M.F. LaFontaine, J.M. Wecht<br>Bronx, New York, USA                       |
| Virtual Poster #54  | Frequency of injuries associated with syncope in the prevention of syncope trials<br>J.G. Jorge, P. Pournazari, S.R. Raj, C. Maxey, R.S. Sheldon<br>Calgary, AB, Canada  |
| Virtual Poster #55  | Characterizing the physiology of an active stand in initial orthostatic hypotension<br>N. Sheikh, S. Ranada, M. Lloyd, D. McCarthy, R.S. Sheldon, A. Phillips, D.V. Exner, M. Runte, S.R. Raj<br>Calgary, AB, Canada   |
| Virtual Poster #56  | Midodrine improves quality of life in patients with vasovagal syncope: results from the Prevention of Syncope Trial IV<br>L.Y. Lei, R.S. Sheldon, S. Safdar, D. Ritchie, C. Maxey, S.R. Raj<br>Calgary, AB, Canada   |

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| <b>POSTURAL ORTHOSTATIC TACHYCARDIA SYNDROME (POTS)</b> |   |
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| Virtual Poster #74                                      | Relationship between work ability and cardiac autonomic profile in postural orthostatic tachycardia syndrome<br>F. Barbic, M. Minonzio, <u>D. Shiffer</u> , F. Dipaola, B. Cairo, R.A. Zamuner, S. Cavaliere, I. Capitanelli, N. Magnavita, R. Furlan<br>Milan, Italy                     |
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|                                  | S.R. Raj<br>Calgary, AB, Canada  |
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