The Ohio Miami Valley Chapter of the Society for Neuroscience Presents the 10th Annual:

Neuroscience Day

Friday, June 7, 2013
University of Cincinnati
Cincinnati, OH
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**Poster Judges:**
**Miami University:**
- Dawn Blitz, Jennifer Quinn, Clare Shi, Lori Isaacson

**University of Cincinnati/Cincinnati Children’s Hospital Medical Center:**
- Jianguo Gu, Steve Danzer, Renu Sah, Michael Jankowski, Steve Crone, Judy Strong

**University of Dayton:**
- Amit Singh, Madhuri Kango-Singh

**Wright State University:**
- Jim Olson, Lynn Hartzler, Patrick Sonner

**Special thanks to:** Mary Jo Petersman, Sharon Weber, Lisa Griffith, Beatriz Ibanez
Ohio Miami Valley Chapter of the Society for Neuroscience  
Neuroscience Day – June 7, 2013  
University of Cincinnati Medical Center

9:00 AM  Registration  
CARE/Crawley Atrium

9:30 – 10:15 AM  Professional Development Session  
MSB E351

“Tips for a successful faculty job search”
Yve Ulrich-Lai, PhD, Assistant Professor, Dept. of Psychiatry and Behavioral Neuroscience, University of Cincinnati

“PhDs at the interface between basic and clinical research”
Gail Pyne-Geithman, PhD, Research Associate Professor, Dept. of Neurosurgery, University of Cincinnati

10:30 – 11:30 AM  Keynote Address  
Kresge Auditorium

“From Receptors to Pain: The Molecular Dynamics of Pain”
Dr. Michael Salter, MD, PhD, FRSC, University of Toronto  
Professor of Physiology and the Anne and Max Tanenbaum Chair in Molecular Medicine  
Head of Program in Neurosciences and Mental Health and the Canada Research Chair in Neuroplasticity and Pain at the Hospital for Sick Children

11:45 AM – 1:00 PM  Luncheon  
Marriott Kingsgate Conference Center

1:15 PM – 3:00 PM  Symposium  
Kresge Auditorium

“Formation of epileptic networks in a novel mouse model of epilepsy”
Candi Lasarge, PhD, Cincinnati Children’s Hospital (Lab of Steve Danzer)

“Theta-based integration of learning and memory systems: Contrasting roles of hippocampal and cerebellar network oscillations during early and late acquisition of trace eyeblink classical conditioning”
Loren Hoffman, Miami University (Lab of Steve Berry)

“Mechanisms regulating the hippocampal taurine transporter protein in rat brain”
Amanda Freeman, Wright State University (Lab of Jim Olson)

“defective proventriculus (dve), a new member of DV patterning in the Drosophila eye”
Oorvashi Roy Puli, University of Dayton (Lab of Amit Singh)

“Neural correlates of mania and euthymia in adolescents with bipolar disorder”
Maggie Schneider, University of Cincinnati (Lab of Melissa DelBello)

3:30 PM – 4:30 PM  Poster Session A (Odd numbered posters)  
CARE/Crawley Atrium

4:30 PM – 5:30 PM  Poster Session B (Even numbered posters)  
CARE/Crawley Atrium

6:00 PM  Announcement of Poster Awards  
CARE/Crawley Atrium
Poster Presentations

**Poster 1**
Presenter: Sarah Cassella, Neuroscience Graduate Program, University of Cincinnati
Co-authors: Hemmerle, A.M., Lundgren, K.H., Kyser, T.L., Ahlbrand, R., Bronson, S.L., Richtand, N.M., Seroogy, K.B.
Title: Prenatal immune activation alters GAD expression in the brains of offspring
Key Words: Poly I:C, Schizophrenia, in situ, GABA

**Poster 2**
Presenter: Soumya Banerjee, Zoology, Miami University
Co-authors: Toral, M., Siefert, M., Fernandes, J.J.
Title: Manipulation of dHb9-expressing motor neurons results in eclosion defects

**Poster 3**
Presenter: Adam Deardoff, Neuroscience, Cell Biology, and Physiology, Wright State University
Co-authors: Romer, S.H., Ahmed, S., Schwieterman, R., Fyffe, R.E.W.
Title: Alterations in the Ion Channels SK3, HCN-1 and Kv2.1 in Rat Lumbar α-Motoneurons Following Peripheral Axotomy
Key Words: Motoneuron, Ion Channel, Peripheral Nerve Injury

**Poster 4**
Presenter: Joe Cicchese, Psychology and Center for Neuroscience, Miami University
Co-authors: Darling, R., Berry, S.
Title: Interneuron subtypes of dorsal hippocampus CA1 show different theta-contingent response profiles during eyeblink classical conditioning
Key Words: Theta; Interneurons; Classical Conditioning

**Poster 5**
Presenter: Uohna Foster, Biological Sciences, Wright State University
Co-authors: Refer to Poster
Title: Identification of Central CO2/pH Chemosensory Regions Involved in Respiratory Control in Poikilothermic Vertebrates
Key Words: chemosensitivity; control of ventilation; respiratory neurons

**Poster 6**
Presenter: Tim Cutler, Biology, University of Dayton
Co-authors: Tare, M., Singh, A.
Title: Study of the role of Cullin-4 function during organogenesis in the Drosophila melanogaster eye
Key Words: cell death, protein degradation, cell survival, Drosophila eye

**Poster 7**
Presenter: Amanda Freeman, Neuroscience, Cell Biology, and Physiology, Wright State University
Co-authors: Olson, J.E.
Title: Mechanisms Regulating the Hippocampal Taurine Transporter Protein in Rat Brain
Key Words: Brain Edema, Taurine, Taurine Transporter
Poster 8
Presenter: Marisela Dallman, Neuroscience, Cell Biology, and Physiology, Wright State University
Co-authors: Ladle, D.R.
Title: Quantitative analysis of locomotor defects in neonatal mice lacking proprioceptive feedback
Key Words: proprioception; locomotion; development; behavior

Poster 9
Presenter: Loren Hoffman, Psychology and Center for Neuroscience, Miami University
Co-authors: Berry, S.D.
Title: Theta-based integration of learning and memory systems: Contrasting roles of hippocampal and cerebellar network oscillations during early and late acquisition of trace eyeblink classical conditioning
Key Words: Hippocampus; Cerebellum; Brain-Computer Interface; Theta; Oscillatory Synchronization

Poster 10
Presenter: Fahimeh Fallahi, Environmental Science, Pharmacology & Tox., Wright State University
Co-authors: Hussain, S.M., Pavel, I.E., O'Callaghan, J., Sharma, M., Saadawi, R., Morris, M.
Title: Gold Nanoparticles in Central Nervous System of Mice: Localization and Inflammatory Markers
Key Words: GNPs (gold nanoparticles), CNS (central nervous system), BBB (blood brain barrier), neuroinflammation

Poster 11
Presenter: Madison Irwin, Biology, University of Dayton
Co-authors: Refer to Poster
Title: The Hippo signaling pathway and the JNK signaling pathway in Amyloid-Beta 42 (Aβ42) mediated cell death

Poster 12
Presenter: Sean Gannon, Zoology and Center for Neuroscience, Miami University
Co-authors: Hawk, K., Isaacson, L.G.
Title: Investigation of uninjured sympathetic preganglionic neurons following axotomy of the superior cervical ganglion
Key Words: cholinergic; postganglionic; spinal cord; sympathetic; transneuronal

Poster 13
Presenter: Manu Kalyani, Zoology, Miami University
Co-authors: Hasselfeld, K., Shi, H., Janik, J., Callahan, P.
Title: Differential effects of gender, diet and prolactin on HPA axis activation.
Key Words: Restraint, Corticosterone, Knockout, High fat diet

Poster 14
Presenter: Sriparna Ghosal, Psychiatry, University of Cincinnati
Co-authors: Bundzikova, J., Dolgas, M.C., Myers, B., Herman, J.P.
Title: Glucocorticoid receptors in the nucleus of the solitary tract inhibit endocrine and behavioral responses to stress
Key Words: Chronic stress, HPA axis
**Poster 15**
Presenter: Hailey Kwon, Biology, University of Dayton
Co-authors: Waghmare, I., Verghese, S., Kango-Singh, M.
Title: Investigating the genetic interactions between the Hippo signaling pathway and Drosophila C-terminal Src kinase (dCsk)
Key Words: dCsk, Hippo pathway, genetic interactions, Drosophila

**Poster 16**
Presenter: Tara Kyser, Neurology, University of Cincinnati
Title: Initial characterization of the behavioral phenotype of DJ-1 knockout rats
Key Words: Parkinson's disease; PARK 7

**Poster 17**
Presenter: Xian Liu, Zoology, Miami University
Co-authors: Shen, M., Zhu, Z., Shi, H.
Title: Expression of Estrogen Receptor α (ERα) in the Brain of Female Rats with Different Hormone Status
Key Words: Estrogen receptor; hormone; hypothalamus

**Poster 18**
Presenter: Alex McCorkle, Zoology, Miami University
Title: Epigenetic Regulation of RPE Reprogramming During Retina Regeneration
Key Words: Epigenetics, RPE, Cell Reprogramming

**Poster 19**
Presenter: Jessica McKlveen, Psychiatry and Behavioral Neuroscience, University of Cincinnati
Co-authors: Cassella, S.N., Baccei, M.L., Herman, J.P.
Title: Chronic Stress Increases Local Inhibition of Infralimbic Cortical Neurons
Key Words: prefrontal cortex, inhibitory post-synaptic current, chronic stress, rat

**Poster 20**
Presenter: Sayantan Mitra, Zoology, Miami University
Co-authors: Siefert, M., Banerjee S., Wilber, J., Fernandes, J.
Title: Manipulating the remodeling of glial ensheathment of peripheral nerves during metamorphosis
Key Words: Glia, Drosophila, Neural development

**Poster 21**
Presenter: Michael Moran, Biology, University of Dayton
Co-authors: Tare, M., Puli, O.R., Singh, A.
Title: Drosophila eye model to identify genetic modifiers of Aβ42 mediated neurodegeneration
Key Words: Alzheimer's, Drosophila, teashirt, tiptop

**Poster 22**
Presenter: Joseph Santin, Biological Sciences, Wright State University
Co-authors: Hartzler, L.
Title: Temperature influences CO2/pH-sensitivity in locus coeruleus neurons of the bullfrog, Lithobates catesbeianus
Key Words: chemosensing, temperature, respiratory control, temperature sensitivity
Poster 23
Presenter: Ahmed Obeidat, Neuroscience, Cell Biology, and Physiology, Wright State University
Co-authors: Nardelli, P., Powers, R.K., Cope, T.C.
Title: Recurrent inhibition and motoneuron firing behavior: rate, timing, adaptation
Key Words: Renshaw; firing modulation; spike frequency adaptation

Poster 24
Presenter: Sarah Schmeltzer, Psychiatry and Behavioral Neuroscience, University of Cincinnati
Co-authors: Vollmer, L.E., Rush, J., Dolgas, C.M., Bacei, M.L., Sah, R.
Title: Impaired recall of extinguished fear by Neuropeptide Y (NPY) in the infralimbic prefrontal cortex
Key Words: PTSD, fear, fear conditioning, prefrontal cortex, infralimbic cortex, NPY

Poster 25
Presenter: Austin Roebke, Biology/Pre-Medicine, University of Dayton
Co-authors: Waghmare, I., Verghese, S., Fenix, A., Kango-Singh, M.
Title: Genetic Interaction of Discs-large [Dlg] with Hippo Signaling Pathway
Key Words: Drosophila; Hippo Pathway

Poster 26
Presenter: Chloe Shea, Wright Patterson Air Force Base
Co-authors: Jankord, R.
Title: The genetic basis of spatial memory performance in a high-stress environment
Key Words: BXD recombinant inbred mice, QTL analysis, Morris water task, genetics, spatial memory, chronic variable stress

Poster 27
Presenter: Jessica Ross, Anesthesia, CCHMC
Co-authors: Cohen, E.R., Hudgins, R.C., Shank, A.T., Jankowski, M.P.
Title: Sensitization of group III and IV muscle afferents after ischemia and reperfusion injury
Key Words: Nociception, Ischemia, Electrophysiology

Poster 28
Presenter: Matt Siefert, Zoology, Miami University
Co-authors: Banerjee S., Wilber, J., Mitra, S., Fernandes, J.
Title: Manipulating the remodeling of glial ensheathment of peripheral nerves during metamorphosis
Key Words: glia, Drosophila

Poster 29
Presenter: Mollie Sorrell, Zoology, Miami University
Co-authors: Linz, D.M., Tomoyasu, Y., Killian, K.A.
Title: Using RNA interference to examine the role of junctional communication in adult neurogenesis
Key Words: Septate junction, Stem Cells, Insect, RNA Seq

Poster 30
Presenter: Martha Sonner, Neuroscience, Cell Biology, and Physiology, Wright State University
Co-authors: Ladle, D.R.
Title: Variable Distribution of Proprioceptive Sensory Terminals in the Mouse Soleus Muscle
Key Words: muscle spindles, Golgi tendon organs, proprioceptive
**Poster 31**  
Presenter: Robert Spencer, Zoology, Miami University  
Co-authors: Blitz, D.  
Title: Sensitivity of Distinct Central Pattern Generator Circuits to Projection Neuron Activity Pattern and Rate  
Key Words: central pattern generators, neuronal circuits, projection neurons, electrophysiology

**Poster 32**  
Presenter: Andrew Steffensmeier, Biology, University of Dayton  
Co-authors: Tare, M., Puli, O.R., Singh, A., Singh, M.  
Title: Search for the Modifiers of Amyloid-ß-42 mediated cell death in Drosophila eye  
Key Words: Drosophila melanogaster, Amyloid-beta 42, Neurodegeneration

**Poster 33**  
Presenter: Haley Titus-Mitchell, Neuroscience Graduate Program, University of Cincinnati/CCHMC  
Co-authors: Rizvi, T.A., Ciraolo, G., Mayes, D.A., Ratner, N.  
Title: Take It Down a Notch, Aberrant Behavior of the Canonical Notch Pathway in Gain of Function RASopathies  
Key Words: oligodendrocyte, neurodegeneration, Ras GTPase, NF1

**Poster 34**  
Presenter: Meghana Tare, Biology, University of Dayton  
Co-authors: Kango-Singh, M., Singh, A.  
Title: Domain specific function of Cullin-4 to promote cell survival in the ventral eye compartment in Drosophila  
Key Words: Drosophila eye, patterning, cell survival

**Poster 35**  
Presenter: Shilpi Verghese, Biology, University of Dayton  
Co-authors: Waghmare, I., Kwon, H., Hanes, K., Deckert, K., Kango-Singh, M.  
Title: Scribble acts in the Drosophila Fat-Hippo pathway to regulate Warts activity  
Key Words: proliferation, growth

**Poster 36**  
Presenter: Lauren Vollmer, Psychiatry and Behavioral Neuroscience, University of Cincinnati  
Co-authors: Rush, J., Li, K., Lewkowich, I., Putnam, R., Sah, R.  
Title: Microglial Acid-sensing T-Cell Death Associated Gene-8 (TDAG8) Receptor in CO2 Evoked Behavior and Physiology: Relevance to Panic  
Key Words: Panic, Microglia, CO2, pH

**Poster 37**  
Presenter: Kumar Vishal, Zoology, Miami University  
Co-authors: Grainger, L., Fernandes, J.  
Title: Motor neurons regulate IFM myogenesis through Spitz and Vein  
Key Words: EGF signaling, Muscle patterning

**Poster 38**  
Presenter: Jessica Wagner, Physiology and Neuroscience, Wright State University/WPAFB  
Co-authors: Jankord, R.  
Title: The Effects of a High-Stress Environment on Animal Behavior in the Morris Water Maze  
Key Words: Stress
**Poster 39**
Presenter: Kayla Watters, Biological Sciences, Wright State University  
Co-authors: Santin, J., Hartzler, L.  
**Title:** Hypercapnic Acidosis Influences Action Potential Properties in Chemosensitive Locus Coeruleus Neurons in Bullfrogs (Lithobates catesbeianus)  
**Key Words:** Action Potential Waveform, Chemosensitivity, Control of Ventilation

**Poster 40**
Presenter: Erika Wittkorn, Biology, University of Dayton  
Co-authors: Puli, O.R., Tare, M., Kango-Singh, M., Singh A.  
**Title:** A Drosophila eye model to study the role of the Dorso-ventral (DV) patterning genes in growth and cancer

**Poster 41**
Presenter: Karla Barbosa-Sabanero, Zoology, Miami University  
Co-authors: Madrigal, A.L., Judge, C., Del Rio-Tsonis, K.  
**Title:** Canonical Shh signaling: a key for retina regeneration  
**Key Words:** Shh, transdifferentiation, RPE, retina, regeneration.

**Poster 42**
Presenter: James Olson, Neuroscience, Cell Biology, and Physiology, Wright State University  
Co-authors: Bradshaw, M.  
**Title:** Purinergic receptors are critical for hypoosmotic volume regulation of 1321N1 human astrocytoma cells

**Poster 43**
Presenter: Patrick Sonner, Neuroscience, Cell Biology, and Physiology, Wright State University  
Co-authors: Ladle, D.R.  
**Title:** Modulation of reciprocal facilitation in mouse spinal cord during postnatal development  
**Key Words:** Facilitation, Spinal Cord, Development

**Poster 44**
Presenter: Erika Grajales Esquivel, Zoology, Miami University  
Co-authors: Luz-Madrigal, A., Gonzalez, D., McKinney, Z., Reis, E.S. Tsonis, P.A., Lambris, J.D., Del Rio-Tsonis, K.  
**Title:** The role of complement components, C3a/C3aR, during eye development  
**Key Words:** retina, complement C3aR

**Poster 45**
Presenter: Kimberly Carhuatanta, WPAFB – Applied Neuroscience Branch  
Co-authors: Refer to Poster  
**Title:** Gene-environment interaction affects emotional behavior in the presence of a high stress environment  
**Key Words:** Environmental stress, genetics, emotional behavior, BXD

**Poster 46**
Presenter: Wilson Tucker, Wright Patterson Air Force Base  
Co-authors: Carhuatanta, K.A., McKinley, R.A., Jankord, R.  
**Title:** Neurobiological effects of transcranial direct current stimulation (tDCS)  
**Key Words:** Brain stimulation, rodent model, electrode design
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