Mid Brains 2013

The Undergraduate Neuroscience Conference of the Upper Midwest

Hosted by
Carleton College, Northfield, MN
Saturday, October 5, 2013
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124. Kathryn Hoffman and Elizabeth Daniels, University of Wisconsin - River Falls: Calcium signaling in human cortical astrocytes after treatment with the synucleins


128. Taylor Mighell, Megan Bosch, Erik Arneson, Garrett Soukup, Annemarie Shibata, Creighton University: Granule cell specific Dicer knockout mice reveal essential role of miRNA in cerebellar development and function


134. Lacey Shiue, Andrea Franz, Sadie Skarloken, Amber Ferris, Dr. Krystle Strand, and Dr. Susan Larson, Concordia College: Differential Gene Expression in Hippocampus of MRL Lupus-Prone and C57BL/6 Wild-type Mice

136. Maria F. Noterman, Christina L. Ruby, and Doo-Sup Choi, Winona State University: Caffeine Increases Ethanol Self-Administration and Delays Circadian Entrainment
102. Sam Stewart, Augustana College: Dose-Dependent Effects of SDPN on Anxiety in CYP7B1 Mice
104. Caitlin Kelly, Katrina Miller, and Katie Boyd, University of St. Thomas: The Action Potentials of Venus Fly Traps
106. Lydia Garlick and Cara Luebke, Winona State University: Use of JWH018 and Marijuana by College Students
112. Trevor T. Raupp, Jatin G. Vaidya, Vincent A. Magnotta, and Daniel S. O'Leary, Augustana College: Integrity of white matter tracts in adolescent children of alcoholic parents
114. Ben Liska and Yao Li, St.Olaf College: Modeling and measuring current in melanopsin retinal ganglion cells
116. Julia S. Szinte, Jaekyoon Kim, Karyn M. Frick, University of Wisconsin-Milwaukee: Role of G-Protein-Coupled Estrogen Receptor (GPER/GPR30) in Hippocampal Memory and Cell Signaling in Female Mice
118. David Fowler, Enrico Barrozo, Justin Ingebretson, Matthew L. Beckman, Augsburg College: Development of tools to study the motor program in Daphnia magna, a model crustacean

Poster Session II
3:15 - 4:00 PM, 2nd Floor Weitz Balcony
Sponsored by Howard Hughes Medical Institute (HHMI)
Gary Muir and Henry Yoon, moderators.
Posters assigned even numbers will present from 3:15 - 4:00PM

General Information

PARKING lots are available as shown on the Campus Map. Street parking is also available unless prohibited by signs.

REGISTRATION will be available from 8:00 - 10:00 am in the Weitz Center for Creativity Commons (WCC Floor Plans).

LUNCH is scheduled from 12:30 - 1:30 pm following the Faculty and Graduate Research Talks. The faculty lunch will be held in Alumni Guest House (see Campus Map). For the first 100 students, free box lunches are available on the lunch table in the Weitz Commons (WCC Floor Plans). Students can also walk downtown (2 blocks) or walk back to campus to purchase lunch at a cafeteria or Sayles-Hill Commons (Campus Map).

POSTERS can be placed on easels any time before the poster session starts. Student authors should stand next to their poster for specific allocated times to answer questions. See program Poster Session pages to find your allocated time to defend.

STUDENT RESEARCH TALKS are scheduled to occur in WCC from 1:30 - 2:30pm. A faculty moderator will be present to introduce speakers and limit times. Students will have 12 minutes to present, with 3 minutes for questions/answers. Students should arrive at their room at 1:15 to have their PowerPoint presentations loaded from their flash drives to the laptop or teaching computer available.
Schedule of Events

8:00 - 10:00 AM
Check-In/Registration
Weitz Center for Creativity (WCC) 1st floor common area.

9:00 - 10:00 AM
Keynote Address by
George Richerson, Professor and Chairman, Neurology, Professor, Molecular Physiology & Biophysics, The Roy J. Carver Chair in Neuroscience, University of Iowa

Warm milk and sudden death:
Role of serotonin in SUDEP and SIDS

10:15 - 11:30 AM
Graduate School Opportunities
Faculty from University of South Dakota, University of Iowa, University of Minnesota, University of Wisconsin-Madison, and Michigan State University will describe their graduate programs in the neurosciences.
WCC 236 - Larson Family Meeting Room

11:30 AM - 12:00 PM and 12:00 PM - 12:30 PM
Faculty and Graduate Student Research Talks
WCC 230, 231, 233, & 236 - Larson Family Meeting Room

12:30 - 1:30 PM
Lunch: 1st floor common area for students

1:30 - 2:30 PM
Undergraduate Research Talks
WCC 230, 231, 233, & 236 - Larson Family Meeting Room

2:30 - 4:00 PM
Undergraduate Poster Sessions
WCC 2nd Floor Balcony

2:30 - 4:00 PM
Graduate Program Information Tables & Social
WCC 2nd Floor Balcony
Sponsored by Howard Hughes Medical Institute (HHMI)

Poster Session I

2:30 - 3:15 PM, 2nd Floor Weitz Balcony
Sponsored by Howard Hughes Medical Institute (HHMI)
Gary Muir and Henry Yoon, moderators.
Posters assigned odd numbers will present from 2:30 - 3:15 PM.

119. Kendyl Greimann, Gustavus Adolphus College:
Alzheimer’s Disease and Amyloid Beta Postsynaptic Signaling through Anchored Calcineurin

121. Lacey Shiue, Charissa Quinlan, and Dr. Krystle Strand, Concordia College:
Investigating the Relationship between Serum C3 Levels and Neuropsychiatric Lupus in the MRL Mouse Model

123. Chiamaka Isiguzo, Zoe Christenson, Dr. Jay Demas, St. Olaf College:
The Impact of Contrast on Non-Visual Photoreceptors

125. Andrea K. Blom and Janine M. Wotton, Gustavus Adolphus College:
The Effect of Semantic Context on the Perception of Vowels

127. Jacob Westerberg, Rachel Blackman, Sophia Sakellaridi, David Crowe, and Matthew Chafee, St. Olaf College:
Analysis of LFP data in a nonhuman primate model of the cognitive deficits present in schizophrenia

129. Westerberg, J. A., Songpitak, M., Jones, L.S., Cobb, D., Collett, K., Cook, M., Curtin, C., Davison, K., Redfearn, C., Rossi, A., Shapiro, L., St. Olaf College:
IMPULSE: The Premier Undergraduate Neuroscience Journal

131. Maria Martinez, Macalester College:
Time to Decide: A Look at Moral Judgment in High Utilitarians

133. Drake Myers, Macalester College:
Threatening Stimuli and the SNARC Effect

135. C. Holmes, J. Trione, and A. Vlack, Winona State University:
Maternal Triadimefon Exposure Impairs Adult Behavior and Brain Connectivity

137. Maria F. Noterman and Francis M. Mann, Winona State University:
Behavioral and Neurological Alterations in a Transgenic Mouse Model of Down Syndrome
Poster Session I
2:30 - 3:15 PM, 2nd Floor Weitz Balcony
Sponsored by Howard Hughes Medical Institute (HHMI)
Gary Muir and Henry Yoon, moderators.
Posters assigned odd numbers will present from 2:30 - 3:15 PM.

101. Brianna Titus, Lauren Fields, and Michael Krue, Gustavus Adolphus College:
The Role of Autoantibodies in Inherited Neurological Storage Disorders

103. Rachel Laufmann, Helen Magee, and Jill Weimer, University of South Dakota:
Effect of LKE Treatment on the Cln6nclf Mouse Model of vLINCL

105. Caitlin Kelly, University of St. Thomas:
Energy Drinks on College Campuses: Motivations, Risky Behaviors, and Health Concerns

107. Nathan Vinzant, Chia-Ming Wu, Trevor Kindle, Vyshnavi Kumaraswamy, Ranjit Koodali, and Gina Forster, University of South Dakota:
Distribution of Iron Oxide Nanoparticles with Neuropeptide Cargo in the Rat Brain

109. Keelia Silvis, Macalester College:
Too Hot to Keep a Cool Head: The Effects of Heat on Emotional Regulation

111. Mark Vanden Avond, Carlee Toddes, Brianna Berti, Katie Olson, and Molly Barlow, University Wisconsin-Eau Claire:
Effects of bupropion and naltrexone on the discriminative stimulus effects produced by 22 hours food deprivation

113. Elizabeth Smith, University of St. Thomas:
Female Dopamine D1 Receptor Expression in the Orbitofrontal Cortex Across Development

115. Jocelyn M. Lutes and David J. Bauer, Viterbo University:
Effects of 670 nm photoirradiation and KCN on mitochondrial GFP expression in Drosophila melanogaster brain

117. Shane Allen, Guttu Maskalo, Erick Marigi, Chris Stewart, St. Olaf College:
Towards the development of wireless, passive electrophysiological instruments

Keynote Address
9 - 10 AM, WCC Cinema, 161

Warm milk and sudden death:
Role of serotonin in SUDEP and SIDS
George B. Richerson, Professor and Chairman, Neurology, University of Iowa
Introduction by Julie Neiworth, Carleton College

My laboratory uses patch clamp electrophysiology, immunohistochemistry and molecular biology to understand how the brainstem regulates blood pH and CO2. We discovered that neurons that produce the chemical serotonin are sensors of pH and CO2.

Although we began by studying a basic physiological process, our basic science work has become very clinically relevant. It has recently been found that infants that died of sudden infant death syndrome (SIDS) have a specific defect in serotonin neurons.
10:15 - 11:30 AM, WCC 236 - Larson Family Meeting Room

Moderators: Shelly Dickinson, St. Olaf College, and Jennifer Wolff, Carleton College

1. Timothy Gomez, Professor, Department of Neuroscience, University of Wisconsin School of Public Health, University of Wisconsin-Madison
2. Gloria Lee, Professor, Department of Internal Medicine, College of Medicine, University of Iowa
3. Brian Burrell, Associate Professor of Neuroscience, Division of Basic Biomedical Sciences, Sanford School of Medicine, University of South Dakota
4. Matt Chafee, Assistant Professor, Department of Neuroscience, University of Minnesota
5. Thomas Carr, Professor Department of Psychology, Program in Cognition and Cognitive Neuroscience, Michigan State University

Faculty and Grad Student Talks
11:30 AM - 12:00 PM, WCC 230, 231, 233, & 236 - Larson Family Meeting Room

1. Patrick Kerstein, PhD candidate, University of Wisconsin - Madison: TRP channel and Calpain regulation of axon growth and guidance
2. Abbey Holt, PhD candidate, Department of Biomedical Engineering, University of Minnesota: Optimizing Deep Brain Stimulation Parameters for Parkinson's Disease
4. Matthew Chafee, Department of Neuroscience, University of Minnesota: An animal model of cortical dynamics and cognitive deficits in schizophrenia
5. Rajeshwari R. Solanki, PhD Candidate, Center for Brain and Behavioral Research, University of South Dakota: Influence of chronic amphetamine treatment and acute withdrawal on serotonin synthesis and clearance mechanisms in the rat ventral hippocampus
6. Timothy Gomez, Professor, Department of Neuroscience, University of Wisconsin School of Public Health, University of Wisconsin-Madison: Regulation of neural network assembly in health and disease

12:00 PM - 12:30 PM, WCC 230, 231, 233, & 236 - Larson Family Meeting Room

1. Travis Sigafoos, Gustavus Adolphus College: The relationship between salicylate-induced tinnitus and circadian rhythmicity by means of the acoustic startle reflex
2. Mary Horton and Jeffrey Trimarchi, Iowa State University: Function of UCHL1 gene in neurons using TALEN mediated mutagenesis
3. Terry Lund, Greg Martin, and Jeffrey Trimarchi, Iowa State University: Characterizing adult retinal ganglion cells
4. Maxwell Shinn and Clarence Lehman, University of Minnesota: Evolution through the eyes of a flatworm

Lunch
12:30 - 1:30 PM Faculty lunch in Alumni Guest House. Student lunch in the Weitz Commons

Undergraduate Student Research Talks
Jay Demas and Sarah Meerts: Moderators 1:30 - 2:30 PM, WCC 236

1. Travis Sigafoos, Gustavus Adolphus College: The relationship between salicylate-induced tinnitus and circadian rhythmicity by means of the acoustic startle reflex
2. Mary Horton and Jeffrey Trimarchi, Iowa State University: Function of UCHL1 gene in neurons using TALEN mediated mutagenesis
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