



**MidBrains 2010**  
**The 4<sup>th</sup> Annual Undergraduate  
Neuroscience Conference of the  
Upper Midwest**

Saturday, May 1, 2010

St. Olaf College  
Northfield, MN



Regents Hall of Natural Sciences

# Welcome to **MidBrains** 2010!

## **MidBrains 2010 Program Committee**

Shelly Dickinson, St. Olaf College (Convenor)  
Kevin Crisp, St. Olaf College  
Jeremy Loebach, St. Olaf College  
Gary Muir, St. Olaf College  
Clark Ohnesorge, St. Olaf College  
Bonnie Sherman, St. Olaf College  
Barbara Curchack, Inver Hills Community College  
Eric Wiertelak, Macalester College  
Julie Nieworth, Carleton College  
Larry Wichlinski, Carleton College  
Roxanne Prichard, University of St. Thomas  
Michael Ferragamo, Gustavus Adolphus College  
Janine Wotton, Gustavus Adolphus College

## **Support for MidBrains generously provided by**

University of Minnesota  
University of Iowa  
University of Wisconsin-Madison  
Mayo Graduate School  
St. Olaf College  
Carleton College  
Macalester College

## **Special thanks to**

At St. Olaf College:  
Darla Frandrup  
Julia Hartert  
Neuroscience Program  
Neuro Club  
Informational and Instructional Technologies  
Faculty for Undergraduate Neuroscience

## SCHEDULE OF EVENTS

### **8:00 AM – CHECK-IN/REGISTRATION**

3<sup>rd</sup> floor Regents Hall of Natural Science

### **9:00-10:00 AM – KEYNOTE ADDRESS**

*“Thinking About Other Places and Other Times: Cognition on the Cognitive Map”*

**A. David Redish, Ph.D., University of Minnesota**

Viking Theater, Buntrock Commons

### **10:20-11:30 AM – GRADUATE SCHOOLS PRESENTATION**

**Faculty from the University of Minnesota, University of Iowa, University of Wisconsin-Madison, and the Mayo Graduate School will describe their graduate programs in the neurosciences. Information will be provided regarding program goals, research opportunities, admissions procedures and financial aid.**

Regents Hall 310

### **10:20-11:30 AM – FACULTY WORKSHOP**

**Undergraduate and graduate faculty are invited to a workshop to discuss curricular issues, best practices for undergraduate research, timing of future MidBrains meetings and how to prepare students for graduate school.**

Regents Hall 210

### **11:40 AM-12:25 PM – FACULTY RESEARCH TALKS, SESSION I (concurrent talks)**

*“Where Did These Babies Come From: A Female Hamster's Neural Perspective”*

**Bob Meisel, Ph.D., University of Minnesota**

Regents Hall 210

*“The Control of Visual Attention”*

**Shaun Vecera, Ph.D., University of Iowa**

Regents Hall 310

### **12:25-1:30 PM – LUNCH (Pick up box lunches by registration table)**

\* Undergraduate and graduate students will take their lunches to the Valhalla Dining Room (in Buntrock Commons) to learn about the grad school experience from those currently living it.

\* Faculty are invited to take their lunches to the 4<sup>th</sup> floor west gathering space (outside of room 410).

### **1:30-2:15 PM – FACULTY RESEARCH TALKS, SESSION II (concurrent talks)**

*“A Culture of Noise: Ear-in-a-dish Approach to Acoustic Trauma”*

**Steven Green, Ph.D., University of Iowa**

Regents Hall 210

*“Multiple Sclerosis and the Genetics of CNS Repair”*

**Allan Bieber, Ph.D., Mayo Graduate School**

Regents Hall 310

**2:25-3:10 PM – FACULTY RESEARCH TALKS, SESSION III (concurrent talks)**

***"Tau Mis-localization: A Novel Therapeutic Target for Alzheimer's Disease"***

**Dehzi Liao, Ph.D., University of Minnesota**

Regents Hall 210

***"Cytoskeleton and Memory: A Marriage Made in the Spine"***

**Erik Dent, Ph.D., University of Wisconsin-Madison**

Regents Hall 310

**3:20-4:05 PM – STUDENT RESEARCH TALKS**

Regents Hall 310

Presentations will be 12 minutes, followed by 3 minutes for questions.

**3:20-3:35 The effect of the manipulation of frontal activation on the perceptual representation of space.**

Kameko Halfmann, *St. Olaf College*.

**3:35-3:50 Dietary soy phytoestrogens alter sexual behaviors in male rats.**

Matthew Pieh, *Carleton College*.

**3:50-4:05 Sex differences and the estrous cycle in relation to clock resetting in mice.**

Kaitlin Hartshorn, *University of Wisconsin - Eau Claire*.

**4:15-5:45 PM – POSTER SESSION & SOCIAL**

Regents Hall 4th Floor Atrium

**All poster presenters should be at their posters from 5:15-5:45 PM and for an additional 15 minutes according to the following schedule:**

Schedule A 4:15-4:30

Schedule B 4:30-4:45

Schedule C 4:45-5:00

Schedule D 5:00-5:15

**Position-Schedule & Title**

1-A **Picture inflation: Are pictures enough to create memories about childhood events?** Hollis McAfee, *Winona State University-Rochester*

2-B **Emotion and memory.** Rachel Doty, Dave Westmark, Erik Feia, & Desiree Budd, *University of Wisconsin-Stout*

3-C **The effect of the believed fat content on perception of food.** Miki Nomura, *University of Wisconsin-Stout*

4-D **Video game addiction and time perception.** Aaron Rehlinger, Brianna Rice, Derek Wiederholt, & David Westmark, *University of Wisconsin-Stout*

5-A **Targeting saccade adaptation in humans: Another look.** Caitlin Dresler & J. Johanna Hopp, *University of Wisconsin-Stout*

- 6-B **Beauty and the brain: Quantifying subjective experience with concrete measures.** Tempestt Gilmore, *Macalester College*
- 7-C **The effects of auditory frequency on duration reproduction.** Nicolas Coletto, *Macalester College*
- 8-D **Oh Stroop! Swearing as a response to error-making.** Joe Ptacek & Eric Wiertelak, *Macalester College*
- 9-A **Effect of visual input on vowel production in English speakers.** Amanda Richardson, *Macalester College*
- 10-B **Endogenous opioid involvement in stressed-induced sour-taste analgesia.** David Harris & Eric Wiertelak, *Macalester College*
- 11-C **Effect of cross-modal interactions of musical performance on pain sensitivity.** William N. Butler & Eric P. Wiertelak, *Macalester College*
- 12-D **The nociceptive effect of electroacupuncture at Zu-San-Li (ST 36) and Shang-Ju-Xu (ST36).** Sophia Benick, *University of St. Thomas*
- 13-A **The effects of negative and positive feedback on pain perception.** Stephanie Tack, Rachel Sampson & Jillian Kobow, *University of St. Thomas*
- 14-B **Nociception in the BTBR mouse.** Stephanie Zito, *Winona State University*
- 15-C **Observational learning in the BTBR mouse.** Breanne A. Davis, *Winona State University*
- 16-D **Elevated anxiety levels in BTBR mice.** Richard A. Slivicki, *Winona State University*
- 17-A **Testing the validity of the BTBR mouse as a model for autism: Are they truly autistic?** Elizabeth Kiebel, *Winona State University*
- 18-B **Effects of social stress on anxiety in the BTBR mouse model of autism.** Katlin M. Hauge, *Winona State University*
- 19-C **Triadimefon's effects on mouse behavior.** Vanessa Ehlers, *Winona State University*
- 20-D **Neural control of pulsation in *Lumbriculus variegatus*.** Kameko Halfmann & Kevin Crisp, *St. Olaf College*
- 21-A **Potential of *Lumbriculus variegatus* as an invertebrate model system for neuropharmacology.** Becca Grupe, Tsetan Lobsang, Xong Yang & Kevin Crisp, *St. Olaf College*
- 22-B **Neurotropic function of microglia and underlying epigenetic mechanisms.** Alex Eischeid, *Creighton University*
- 23-C **Circadian clock and estrous cycle resetting in female syrian hamsters.** Mathew Mergenthaler & Dan Janik, *University of Wisconsin-Eau Claire*

- 24-D **Methamphetamine induced circadian clock resetting in mice.** Sophia Ruff-Berganza, *University of Wisconsin-Eau Claire*
- 25-A **Transcription-independent effects of PPAR $\alpha$  ligands on dorsal root ganglion neurons.** Yee Xiong, *University of Minnesota-Twin Cities*
- 26-B **Stromal derived factor-1 secreted by human mesenchymal stem cells protects the brain after stroke.** Brittni Peterson, Issei Shimada, Ben Bakondi & Jeff Spees, *University of St. Thomas*
- 27-C **Effects of exendin in rats trained to discriminate between 22 and 2 hr food deprivation.** Ryan Green, Dana Bauer, Chelsea Harstad, Eden Anderson, Katherine Hughes, Andrew Dunbar, Jacob Caflish, Chris Blume & Annie Borton, *University of Wisconsin-Eau Claire*
- 28-D **Effects of methylphenidate and environmental enrichment on spatial memory in rats: A comparison of cognitive enhancement methods.** Laura Schlosser, *Carleton College*
- 29-A **A probabilistic approach to hippocampal learning and memory consolidation.** Zach Varberg, Paul Schrater & Adam Johnson, *Bethel University*
- 30-B **The role of head direction cells in navigational behavior.** Blake Hedstrom & Tim Buff, *St. Olaf College*
- 31-C **The effect of ethanol pre-exposures on conditioned place aversion to ethanol in adolescent and adult DBA/2J mice.** Brandon Fritz & Shelly Dickinson, *St. Olaf College*
- 32-D **Finding new regulators of sex-specific neuronal development.** Zach Palchick, Esther Liu, Jack Timmons, Avantika Jalan, Sonya Krishnan, Mahesh Rao, Kellan McLemore & Jennifer Wolff, *Carleton College*
- 33-A **Analysis of neurogenesis and neurodegeneration in ATOH1-CRE dicer null mutant mice.** Carrie Cusack, A. Hake, C. Campbell, S. Hake, M. Pierce, G. Soukup & A. Shibata, *Creighton University*
- 34-B **Proton magnetic resonance spectroscopy (1H-mrs) assessment of the neurochemical profile in the rat brain after traumatic brain injury (TBI).** Katrina Fenton, Farhad Ghoddoussi, Steven Schafer, Patrick Schafer, Christian W. Kreipke & Matthew P. Galloway, *Wayne State University*