

*Keynote Speaker  
Michigan Physiology Society*

*April 30, 2015 4:45 PM  
Irving H. Zucker, PhD*

*Department of Cellular and Integrative Physiology, University of  
Nebraska Medical Center*

*Title: "Cardiac Sympathetic Afferents in Heart Failure: It's Not  
Just About the Pain"*



**Abstract:** Cardiac sympathetic afferents are nociceptors that respond to a variety of ischemic end products. They mediate sympatho-excitatory effects in response to bradykinin and capsaicin, among other substances. Recent data from our laboratory suggest that these sensory endings also participate in the cardiac remodeling process following a myocardial infarction (MI). Collagen deposition and matrix metalloproteinase activation are inhibited by selective denervation of cardiac sympathetic afferents at the time of MI creation. This process also markedly impacts cardiac inflammation and edema. Cardiac sympathetic afferent denervation increases post MI survival by two fold. The potential therapeutic use of cardiac sympathetic afferent ablation in heart failure will be discussed.

**Biography:** Irving H. Zucker, Ph.D. is the Theodore F. Hubbard Professor of Cardiovascular Research and Chairman of the Department of Cellular and Integrative Physiology at the University of Nebraska Medical Center in Omaha, Nebraska. He has been Chairman since 1989. Dr. Zucker received his Ph.D. from New York Medical College in 1972. He continued his post doctoral training at the University of Nebraska Medical Center where he became a faculty member in 1973. Dr. Zucker has been involved in studies related to the neural regulation of cardiovascular function. His studies have revolved around cardiovascular reflex control of sympathetic nerve activity in animal models of chronic heart failure. He has been the recipient of a MERIT Award from the NHLBI, an Established Investigatorship from the American Heart Association, the Wiggers Award from the Cardiovascular Section of the American Physiological Society and the Carl Ludwig Award from the Neural Control and Autonomic Regulation Section of the American Physiological Society. He is currently an Editor-in-Chief of the American Journal of Physiology: Heart and Circulatory Physiology. He is a Past-President of the Association of Chairs of Departments of Physiology and a Past-President of the American Physiological Society.

*Sponsored by the American Physiological Society.*

**Michigan Physiological Society 2<sup>nd</sup> Annual Meeting**  
**Thursday and Friday, April 30 - May 1, 2015**  
**Boyne Mountain Resort, Vienna A and B**  
**Boyne, MI**

**Thursday, April 30**

- 2:00 – 3:30 PM**            **REGISTRATION AND POSTER SETUP (Hotel Lobby & Vienna B)**
- 3:30 – 4:00 PM**            **WELCOME (Vienna A)**  
Jason Carter, Ph.D., President of the Michigan Physiological Society  
David Rodenbaugh, Ph.D., MPS 2015 Programming Chair
- 4:00 – 4:30 PM**            **One-Minute, Mic-Only (no slides) Introductions -- Trainees with Poster**  
Introduction by Greg Fink, Ph.D.
- 4:45 – 5:45 PM**            **KEYNOTE ADDRESS (Vienna A)**  
***Sponsored by the American Physiological Society***  
Introduction by Sue Barman, Ph.D.  
Irving H Zucker, Ph.D.; Department of Cellular and Integrative Physiology, University of Nebraska  
Medical Center.  
*"CARDIAC SYMPATHETIC AFFERENTS IN HEART FAILURE: IT'S NOT JUST ABOUT THE PAIN"*
- 5:45 – 6:00 PM**            **Introduce Sponsors and Group Picture**
- 6:00 – 9:00 PM**            **Poster Session/Social (Vienna A and B)**  
***Sponsored by Michigan State University College of Natural Science,***  
***Michigan State University College of Human Medicine***
- POSTER PRESENTATIONS (Vienna B)**  
***Sponsored by Michigan State University College of Human Medicine***

**Friday, May 1**

- 7:00 – 8:30 AM**            **REGISTRATION/Continental Breakfast (Vienna A and B)**
- 8:30 – 9:45 AM**            **ORAL SESSION #1 (Renal/Neuroscience)**  
***Sponsored by Michigan Technological University Graduate School,***  
**Department of Kinesiology and Integrative Physiology, and Department of Biological Sciences**
- 8:30 – 8:45:**    **Michael Huber** (Graduate Student Trainee)  
Michigan Technological University  
*"SYMPATHOEXCITATION BY PVN (PRO) RENIN RECEPTOR ACTIVATION MAY INVOLVE  
REACTIVE OXYGEN SPECIES AND INOS"*

- 8:45-9:00**      **Nusrat Matin** (Graduate Student Trainee)  
Michigan State University  
*"BILATERAL COMMON CAROTID ARTERY STENOSIS IN NORMOTENSIVE RATS IMPAIRS SHORT-TERM MEMORY AND ENDOTHELIAL DEPENDENT DILATION OF PENETRATING ARTERIOLES"*
- 9:00-9:15**      **Kevin L. Gordish** (Graduate Student Trainee)  
Wayne State University  
*"RESVERATROL TREATMENT REVERSES MILD ANGIOTENSIN II-INDUCED HYPERTENSION, BUT NOT BY INCREASED NATRIURESIS"*
- 9:15-9:30**      **Ankita Bachhawat Jaykumar** (Graduate Student Trainee)  
Wayne State University  
*"ALMS1 A NOVEL INTERACTING PROTEIN FOR NKCC2 IS INVOLVED IN BLOOD PRESSURE REGULATION AND RENAL FUNCTION"*
- 9:30-9:45**      **Emily Henson** (Graduate Student Trainee)  
Wayne State University  
*"HIGH FRUCTOSE BUT NOT HIGH GLUCOSE INTAKE INDUCES SALT-SENSITIVE HYPERTENSION AND ENHANCES NKCC2 PHOSPHORYLATION IN NORMAL RATS"*
- 9:45 – 10:00 AM**      **TRANSITION BREAK**
- 10:00 – 10:30 AM**      **BREAKOUT SESSION #1** (Each will last ~40 min and be repeated in Breakout #2)  
*Sponsored by Michigan State University College of Osteopathic Medicine,  
Michigan State University Office of the Vice President*
- a. Publications and Role of Reviewer (Vienna A)**  
Chair: Irving H. Zucker, Ph.D.
- b. Individual Development Plan (Vienna B)**  
Co-Chair: Jason R. Carter, Ph.D. and Erica A. Wehrwein, Ph.D.
- 10:30 – 11:00 AM**      **Coffee/Social Break**
- 11:00 AM – 12:15 PM**      **ORAL SESSION #2 (Neuroscience)**  
*Sponsored by Michigan State University College of Human Medicine*
- 11:00-11:15**      **Daniel Heureka**  
Wayne State University  
*"ASSESSMENT OF NEURONAL ACTIVITY IN THE ROSTRAL VENTROLATERAL MEDULLA (RVLM) OF CONSCIOUS RATS"*
- 11:15-11:30**      **Andrew Chapp** (Graduate Student Trainee)  
Michigan Technological University  
*"ACETATE IS AN ACTIVE METABOLITE OF ETHANOL: INCREASES FIRING AND EVOKES INWARD CURRENTS THROUGH ACTIVATION OF NMDA RECEPTORS IN RVLM PROJECTING CEA NEURONS"*

- 11:30-11:45**    **Ida T. Fonkoue** (Graduate Student Trainee)  
Michigan Technological University  
*"ACUTE ALCOHOL CONSUMPTION MODULATES SYMPATHETIC VASCULAR TRANSDUCTION DIFFERENTLY IN CAUCASIANS AND AFRICAN AMERICANS"*
- 11:45-12:00**    **Robert A Larson** (Graduate Student Trainee)  
Michigan Technological University  
*"INHIBITION OF ENDOPLASMIC RETICULUM FUNCTION IN PVN BY THAPSIGARGIN INCREASES NEURONAL EXCITABILITY AND SYMPATHETIC NERVE ACTIVITY (SNA)"*
- 12:00-12:15**    **Connor Greer** (Undergraduate Student Trainee)  
Northern Michigan University  
*"ALDEHYDE DEHYDROGENASE 1 AND GBM"*
- 12:15 – 1:00 PM**            **BUFFET LUNCH**
- 1:00 – 2:15 PM**            **ORAL SESSION #3 (Cardiovascular/Respiratory)**  
*Sponsored by Michigan State University Office of the Vice President*
- 1:00-1:15**            **Jasdeep Kaur** (Graduate Student Trainee)  
Wayne State University  
*"MUSCLE METABOREFLEX-INDUCED VASOCONSTRICTION OF ISCHEMIC ACTIVE SKELETAL MUSCLE"*
- 1:15-1:30**            **Guodong Pan** (Post-Doctoral Trainee)  
Henry Ford Health System  
*"LOW ALDEHYDE DEHYDROGENASE (ALDH) 2 ACTIVITY INDUCES CARDIAC DAMAGE IN ALDH2\*2 (E487K) KNOCK-IN MUTANT DIABETIC MICE"*
- 1:30-1:45**            **Sebastien Hayoz** (Undergraduate Student Trainee)  
Michigan State University  
*"MINERALOCORTICOID RECEPTOR BLOCKADE WITH CANRENOIC ACID HAS NO EFFECT ON PRO-INFLAMMATORY MARKER MRNA EXPRESSION FOLLOWING ISCHEMIC STROKE INDUCED BY MIDDLE CEREBRAL ARTERY OCCLUSION"*
- 1:45-2:00**            **Taehyung Lee** (Post-Doctoral Trainee)  
Michigan State University  
*"GPCR KINASE 6 IS REQUIRED FOR TRANSEPITHELIAL MIGRATION OF NEUTROPHILS INTO THE LUNG"*
- 2:00 – 2:15 AM TRANSITION BREAK**

**2:15 – 3:15 PM**            **ORAL SESSION #4 (Physiology Education)**  
*Sponsored by Michigan State University Graduate School*

2:15-2:45            **Keynote Speaker – Lori Seischab , Ph.D.**  
Michigan State University  
*“ARE WE TEACHING OUR PHYSIOLOGY STUDENTS TO BE SUCCESSFUL?”*

2:45-3:00            **Steven Elmer, Ph.D.**  
Michigan Technological University  
*“EVALUATION OF BLENDED-LEARNING WITHIN EXERCISE PHYSIOLOGY LABORATORIES”*

3:00-3:15            **Erica A Wehrwein, Ph.D.**  
Michigan State University  
*“PROPOSAL TO POSTER: A MODEL FOR INDIVIDUALIZED INQUIRY BASED RESEARCH PROJECTS IN THE CONTEXT OF AN UNDERGRADUATE PHYSIOLOGY LABORATORY COURSE”*

**3:15 – 3:45 PM**            **BUSINESS MEETING & AWARDS PRESENTATION (Vienna A/B)**