

CURRICULUM VITAE

Craig A. Emter, Ph.D.

I. PERSONAL DATA

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Citizenship: United States

II. EDUCATION:

2001-2006: Ph.D. Integrative Physiology (GPA 3.8), Department of Integrative Physiology, University of Colorado, Boulder, CO.
Mentor: Russell L. Moore, Ph.D.

1997-2000: M.S. Exercise Physiology (GPA 3.9, graduated with honors), Department of Kinesiology, Boise State University, Boise, ID.
Mentor: Ronald P. Pfeiffer, Ph.D.

1993-1997: B.S. Exercise Physiology (GPA 3.6, graduated with honors), Department of Kinesiology, University of Wyoming, Laramie, WY.

III. RESEARCH AND PROFESSIONAL EXPERIENCE

2016-to date: Associate Professor with tenure, Department of Biomedical Sciences, University of Missouri-Columbia, Columbia, MO.

2009-2016: Assistant Professor, Department of Biomedical Sciences, University of Missouri-Columbia, Columbia, MO.

2006-2009: Postdoctoral Fellow, Department of Biomedical Sciences.
University of Missouri-Columbia, Columbia, MO.
Mentor: Douglas K. Bowles, Ph.D.

IV. RESEARCH INTEREST:

The primary focus of my research is to understand the impact of exercise training on the myocardium and coronary arteries of the failing heart. The main goals of my lab are to determine the intensity and frequency of exercise that may provide benefits in heart failure patients and the cellular mechanisms underlying these changes. Cardiac function is compromised in heart failure; thus, the level of exercise that these patients are able to perform and still gain health benefits is likely to be very different from other patient populations. It is our hope that the elucidation of these changes will allow physicians to better utilize exercise as a therapeutic modality in a clinical setting of heart failure. My laboratory employs a multidisciplinary approach that integrates systemic physiologic measures with *in vitro* techniques to study the mechanisms and impact of exercise in heart failure including catheter techniques and ultrasound to measure cardiac and coronary vascular function *in vivo* and patch clamping, cannulated vessel preparations, histology, and biochemical assays.

V. CURRENT PROJECTS:

1. Utilization of a translational model (swine) of heart failure with preserved ejection fraction (developed in my lab) for the identification of novel molecular mechanisms involved in the development of heart failure/cardiovascular disease and testing of novel therapeutic strategies in a clinically relevant large animal model. My laboratory is currently also beginning pilot translational studies to develop an obese and diabetic Ossabaw swine model of heart failure with preserved ejection fraction.
2. Determination of the molecular mechanisms by which exercise training prevents myocardial fibrosis in a setting of heart failure, including examination of existing and novel imaging techniques in the diagnosis of heart failure and quantification of myocardial fibrosis.
3. Examination of coronary smooth muscle cell BK_{Ca} channels as a primary mechanism mediating impaired vascular/ventricular interactions in heart failure.
4. Determining the efficacy of DPP-IV and PDE5 inhibition on cardiac remodeling and hypertrophy in heart failure.
5. Determining the role of increased advanced glycation end product accumulation on increased coronary vascular stiffness and related myocardial

oxygen supply/demand imbalance in the development of heart failure with preserved ejection fraction.

6. Examining the efficacy of a novel gene therapy (myocardial AAV transfection of non-endogenous p90 ribosomal S6 kinases [RSK3] binding domain protein) and mechanism (RSK3-muscle A-kinase anchoring protein [mAKAP] signalosome) for treating the development of heart failure with preserved ejection fraction.

VI. TEACHING ACTIVITIES:

Graduate and Professional

- 2015 (Fall): V_BSCI-4333/5506/7333 Veterinary Cellular Biology (lecturer; 9 lectures; 125 students)
V_BSCI-8200 Multidisciplinary Approaches to Biomedical Research (lecturer; 1 lecture; 4 students)
MPP 9430 Cardiovascular Physiology (lecturer; 1 lecture; 9 students)
- 2015 (Spring): V_BSCI-8410 Seminar in Veterinary Biomedical Sciences (facilitator; 5 classes; 15 students)
BIO_SC 4952H Honors Research in Biological Sciences (mentor; 1 student)
- 2014 (Fall): V_BSCI-4333/5506/7333 Veterinary Cellular Biology (lecturer; 8 lectures; 125 students)
V_BSCI-8200 Multidisciplinary Approaches to Biomedical Research (lecturer; 1 lecture; 3 students)
V_BSCI-8410 Seminar in Veterinary Biomedical Sciences (facilitator; 6 classes; 16 students)
BIO_SC 4952H Honors Research in Biological Sciences (mentor; 1 student)
- 2014 (Spring): MPP 9431 Control of Energy Metabolism (lecturer; 1 lecture; 8 students)
V_BSCI-8410 Seminar in Veterinary Biomedical Sciences (facilitator; 5 classes; 14 students)
- 2013 (Fall): V_BSCI-4333/5506/7333 Veterinary Cellular Biology (lecturer; 8 lectures; 125 students)
V_BSCI-8085 Problems in Vet Biomedical Sciences (lecturer; 1 lecture; 5 students)
V_BSCI-8410 Seminar in Veterinary Biomedical Sciences (facilitator; 4 classes; 14 students)

MPP 9430 Cardiovascular Physiology (lecturer; 1 lecture; 5 students)

2013 (Spring): V_PBIO 5995 Foundations of Veterinary Research and Discovery (lecturer; 1 lecture; 35 students)
V_BSCI-8410 Seminar in Veterinary Biomedical Sciences (facilitator; 13 students)

2012 (Fall): V_BSCI-4333/5506/7333 Veterinary Cellular Biology (lecturer; 8 lectures; 121 students)
V_BSCI-8085 Problems in Vet Biomedical Sciences (lecturer; 1 lecture; 3 students)

2012 (Spring): MPP 9431 Control of Energy Metabolism (lecturer; 1 lecture; 10 students)
BIO_SC 4950H/4952H Honors Research in Biological Sciences (mentor; 1 student)

2011 (Fall): MPP 9430 Cardiovascular Physiology (lecturer; 1 lecture; 4 students)
V_BSCI-8085 Problems in Vet Biomedical Sciences (lecturer; 1 lecture; 5 students)
BIO_SC 4950H/4952H Honors Research in Biological Sciences (mentor; 1 student)

Trainees

Supervisor- Undergraduate

2011-2012: Brittany N. Muller, B.S. Biology (Honors; 2012)

2014-2015: Daniel Dozier, B.S. Biology (Honors; 2015)

2013-to date: Emily Dehn

Supervisor- Veterinary Research Scholars Program

2013-14: Pamela Zgoda, VM1 student

2014-15: Noelany Cruz Rivera, VM1 student

2015-2016: Whitney Davis, VM2 student

2015: Evan Hayes, VM2 student

2016-to date: Tracy Swanson, VM1 student

2016-to date: Madeleine Dionne, VM1 student

Co-Mentor- Veterinary Research Scholars Program

2013-2014: Damian Peyton, VM2 student

Supervisor- Rotating Ph.D. Students

2012: Kurt D. Marshall, Ph.D. candidate, Biomedical Sciences

Ph.D. Dissertation Advisor

2012-2016: Jessica A. Hiemstra, Ph.D. candidate, Biomedical Sciences
2015-to date: Jenna Edwards, Ph.D. graduate student, Biomedical Sciences

Postdoctoral Advisor

2014-15: Brian Ferguson, Ph.D.
2014-to date: T. Dylan Olver, Ph.D.

Masters Thesis Committees

2012-2013: Timothy D. Cornell, M.S. 2013, Medical Pharmacology & Physiology
Advisor: Kerry S. McDonald, Ph.D.
2015-2016: John Jones, M.S. 2016, Medical Pharmacology & Physiology
Advisor: Tim Domeier, Ph.D.
2015: Adam Veteto, M.S. 2015, Medical Pharmacology & Physiology
Advisor: Kerry S. McDonald, Ph.D.
2015-2016: Kelly Lum-Naihe, M.S. 2016, Medical Pharmacology & Physiology
Advisor: Lakshmi Pulakat, Ph.D.

VII. SERVICE:

Department/Center

2012-to date: Director, Biomedical Sciences Histopathology Laboratory
2012-2015: Director, Biomedical Sciences Seminar Series
2013-to date: Biomedical Sciences Research Advisory Committee
2016-to date: Biomedical Sciences Graduate Program Advisory Committee
2014-to date: Chair, Biomedical Sciences Space Advisory Committee
2012-to date: Graduate Faculty Member
2012-to date: Doctoral Faculty Member
2012-2015: American Physiological Society Undergraduate Poster Session
Recruitment, National Experimental Biology Meetings '12, '13, '14, '15.
2013-to date: Director, Biomedical Sciences Website
2016: Senior Faculty Hire Search Committee

Division/College

2015-to date: Academic Research Advisory Board
2015-to date: Animal Resources Committee
2016: Poster Judge, College of Veterinary Medicine Research Day
2014-2015: Oral Presentation Judge, Phi Zeta Research Day
2013: Poster Judge, Phi Zeta Research Day
2012: Grant Reviewer, University of Missouri Clinician Scientist
Research Award

MU Campus

2016: Grant Reviewer, University of Missouri Research Board
2012: Grant Reviewer, University of Missouri Research Board

UM System

2013-2014: Chair, 21st Annual Cardiovascular Day Planning Committee
2012-2016: Poster Judge, 19th, 20th, 22nd, & 23rd Annual Cardiovascular Day

State/Regional/International

Professional Memberships

American Physiological Society
American Heart Association
Biophysical Society

Editorial Boards

2010-to date: Journal of Applied Physiology
2015-to date: Journal of the American College of Cardiology: Basic to Translational Science
2011-to date: Frontiers in Integrative Physiology
2014-2015: Guest Editor: Journal of Applied Physiology - Highlighted Research Topic - "*Exploring New Concepts in the Management of Heart Failure with Preserved Ejection Fraction: Is Exercise the Key for Improving Treatment?*"

Journal Reviews

American Journal of Physiology: Heart & Circulatory Physiology
Circulation: Heart Failure
Cardiovascular Research
Journal of Molecular and Cellular Cardiology
Medicine and Science in Sports and Exercise
Journal of the American Heart Association
Physiological Reports
Journal of Cardiac Failure
Journal of Vascular Research
European Journal of Applied Physiology
Experimental Physiology
Applied Physiology, Nutrition, and Metabolism
American Journal of Cardiology
Experimental Biology and Medicine
British Journal of Sports Medicine
Journal of Cardiovascular Pharmacology
Journal of the Renin-Angiotensin-Aldosterone System
Cardiology
Beneficial Microbes

Grant Review Study Sections

2012-to date: American Heart Association, permanent Study Section member, Cardiac Biology/Regulation- Basic Science 2 (BSci 2)

National Meetings

2015-to date: Programming Committee for the 2016 American Physiological Society Integrative Biology of Exercise (IBE VII) meeting.

VIII. AWARDS AND HONORS:

- 2008: NIH Individual Postdoctoral National Research Service Award
- 2008: Selected for Oral Presentation- University of Missouri Cardiovascular Day
- 2006: Post-doctoral appointment: T-32 NIH Training Grant: *Exercise and Health; Integration from Molecule to Patient*
- 2004: University of Colorado UGGS Student Travel Grant
- 2001: Teaching/Research Assistantship, University of Colorado, Boulder
- 2000: Dean's List (4.0)- 3 semesters, Boise State Univ.
- 1999: Elected Graduate Student Representative, Boise State University
- 1997: Graduate Assistantship, Boise State University
- 1997: NSF/EPSCoR Research Fellowship, University of Wyoming
- 1997: Alpha Epsilon Delta, Health Sciences Honorary
- 1997: Golden Key Honor Society
- 1997: President's Honor Roll, 2 semesters (4.0 G.P.A.), University of Wyoming
- 1993: Presidential Honor's Scholarship, University of Wyoming
- 1993: Valedictorian, Riverton H.S., Riverton, WY.

IX. INVITED TALKS/SEMINARS

International/National/Regional Symposia

- 2015 APS National Experimental Biology Meeting - Cardiovascular Society Symposium: *Treating Cardiovascular Disease with Exercise: Mechanistic Insight Translated from Animal Models*. Program Chairs: Craig Emter (Columbia, MO) and Joseph Libonati (Philadelphia, PA).

- 3/15: "Insights from a Large Animal Model of Heart Failure with Preserved Ejection Fraction: Is Exercise Our Best Treatment?" Cardiovascular Society: Treating Cardiovascular Disease with Exercise - Mechanistic Insight Translated from Animal Models. National Experimental Biology Meeting, Boston, MA.
- 8/14: "Saxagliptin Prevents Increased Coronary Arterial Stiffness and Advanced Glycation End Product Expression in a Miniature Swine Model of Heart Failure with Preserved Ejection Fraction." North American Artery

Meeting, Chicago, IL.

- 11/13: "Chronic cyclosporine treatment preserves mitochondrial energetics but does not improve cardiomyocyte contractile function or calcium handling in a translational mini-swine model of heart failure with preserved ejection fraction." National American Heart Association Scientific Sessions, Dallas, TX. *Presented by my trainee, Jessica Hiemstra.*
- 4/13: "Chronic Interval Exercise Modifies the Myocardial Lipid Profile in a Miniature Swine Model of Heart Failure with Preserved Ejection Fraction." Featured Topic: Nutrients and Cardiovascular Health and Disease: Glucose, Fatty Acids and Beyond- Cardiovascular Section. National Experimental Biology Meeting, Boston, MA.
- 10/12: "Exercise Training for Heart Failure Patients: What do we REALLY know?" Central States American College of Sports Medicine Meeting, Columbia, MO.
- 4/12: "Utilizing Pressure-Volume Loops and Coronary Blood Flow to Assess Cardiac Efficiency in Miniature Swine with Compensated Heart Failure Following Low-Intensity Interval Exercise." National Experimental Biology Meeting, San Diego, CA.
- 2/12: "Utilizing Pressure and Heart Rate to Dissect Myocardial Oxygen Consumption and Contractile Reserve in a Mini-Swine Model of Disease and Exercise." Worldwide Webinar for Transonic/Scisense, Inc.

Invited Seminars (other institutions)

- 11/15: "How in the heck are we supposed to treat heart failure with preserved ejection fraction? How about our old friend, exercise!" University of Minnesota Lillehei Heart Institute & Department of Integrative Biology and Physiology, Minneapolis, MN.
- 5/15: "Examining the cGMP-PKG Signaling Axis as a Therapeutic Target for Heart Failure with Preserved Ejection Fraction". University of Miami Miller School of Medicine & Interdisciplinary Stem Cell Institute, Miami, FL.
- 10/14: "Can you manipulate it and will it work? Examining cGMP as a therapeutic target for heart failure with preserved ejection fraction." Saint Louis University - Center for Cardiovascular Research, St. Louis, MO.
- 4/06: "Low-intensity Exercise Training Delays Onset of Decompensated Heart Failure in Spontaneously Hypertensive Heart Failure (SHHF) Rats." University of Colorado Health Sciences Center Division of Cardiology Research Conference, Denver, CO.

- 3/06: "Low-intensity Exercise Training Delays Onset of Decompensated Heart Failure in Spontaneously Hypertensive Heart Failure (SHHF) Rats." Department of Physiology and Biophysics. University of Illinois, Chicago, Chicago, IL.
- 3/06: "Low-intensity Exercise Training Delays Onset of Decompensated Heart Failure in Spontaneously Hypertensive Heart Failure (SHHF) Rats." Department of Cell and Molecular Physiology. Loyola University, Chicago, Chicago, IL.

Seminars (local)

- 11/12: "What to expect during years 1-6 of a tenure track job." University of Missouri Postdoctoral Association Career Development Series discussion panel, Columbia, MO.
- 9/11: "Exercise & Heart Failure: Uncovering the mechanisms underlying improved cardiovascular health." Department of Nutrition and Exercise Physiology Research Seminar Series. University of Missouri- Columbia, Columbia, MO.
- 2/10: "Exercise Training: An "Intense" Modulator of Cardiovascular Function and Remodeling in a Miniature Swine Model of Heart Failure." University of Missouri Cardiovascular Day, Columbia, MO.
- 2/10: "Intensity Matters: Mechanistic Insight into Exercise as a Therapeutic Intervention in Heart Failure." University of Missouri Clinical Correlation Conference- Exercise and Health: Integration from Molecule to Patient. University of Missouri- Columbia, Columbia, MO.
- 7/09: "Exercise Training: An "Intense" Modulator of Cardiovascular Function and Remodeling in a Miniature Swine Model of Heart Failure." Department of Biomedical Sciences. University of Missouri- Columbia, Columbia, MO.
- 2/08: "TRPC6 and Orai1 expression increase with mitogen augmented store-operated Ca^{2+} entry in rat aortic smooth muscle." University of Missouri Cardiovascular Day, Columbia, MO.
- 2/06: "Low-intensity Exercise Training Delays Onset of Decompensated Heart Failure in Spontaneously Hypertensive Heart Failure (SHHF) Rats." Department of Biomedical Sciences. University of Missouri- Columbia, Columbia, MO.

X. GRANTS AND CONTRACTS

Current

R01 HL112998 (Emter, PI)

5/1/14-4/30/2019

NIH/NHLBI

"Coronary Dysfunction, BK Channels, & Exercise in Heart Failure"

Major Goals: The goal of this project is to determine the role of the coronary vascular BK_{Ca} channel in the development of heart failure with preserved ejection fraction.

Role: PI

University of Missouri Research Board (Emter/Rector, PI's) 1/1/15-12/31/2016

"Translational swine model for the study of HFpEF"

Major goals: Pilot Clinical and Translational Studies for Developing an Obese and Diabetic Ossabaw Swine Model of HFpEF

Role: Co-PI

R01 HL57852-14 (McDonald, PI)

3/1/12-3/1/2017

NIH/NHLBI

"Regulation of Work Capacity in Cardiac Myocytes"

Major Goals: The goal of this project is to investigate the determinants of power output in myocardium.

Role: Co-Investigator (5%)

W81XWH-14-1-0302 (Duan, PI)

9/10/14-8/29/2017

Department of Defense (DOD)

"A translational pathway towards a clinical trial using the second-generation AAV micro-dystrophin vector."

Major Goals: The goal of this project is to investigate novel gene therapies for treating muscular dystrophy.

Role: Co-Investigator (10%)

University of Missouri; Internal (Emter/Olver, Co-PI's) 1/1/16-12/31/16

College of Veterinary Medicine COR Faculty Research Program

"Pathological mechanisms of sympathetic-mediated cerebrovascular vasoconstriction in heart failure with preserved ejection fraction"

Major goals: Pilot clinical and translational studies for examining sympathetic nervous system contributions to developing heart failure in a mini-swine model of HFpEF

Role: PI

F31 NRSA HL11882464 (Hiemstra, PI)

1/1/2016-12/31/2017

NIH/NHLBI

“Role of Cardiomyocyte Function & Sex in Developing Heart Failure with Preserved Ejection Fraction”

Major goals: Salary support for research career development.

Role: Supervising PI

AHA Postdoctoral Fellowship (Olver, PI)

1/1/2016-12/31/2017

American Heart Association

"Mechanisms of sympathetic-mediated cerebrovascular vasoconstriction in heart failure with preserved ejection fraction"

Major goals: Salary support for research career development.

Role: Supervising PI

Submitted/Pending/Under Review

2R42 HL129524-02 (Emter/Kapiloff, Multi-PI) Reviewed 7/2016

NIH/NHLBI

(Impact Score - 30)

"RSK3 Anchoring Disruptor Therapy for Heart Failure"

Major Goals: The goal of this project is to determine the efficacy of RSK3 as a treatment for pressure-overload hypertrophy.

Role: PI

U01 AG055126-01 (Bowles/Laughlin, PI)

Reviewed 7/2016 (Impact Score - 24)

NIH Common Fund - Molecular Transducers of Physical Activity in Humans

"MU Swine Preclinical Exercise Core"

Major Goals: The goal of this project is to utilize the pig as the most similar animal model for humans to define the molecular transducers and downstream mechanisms induced by exercise which produce adaptation and ultimately ameliorate chronic disease.

Role: Co-Investigator (5%)

R01 HL12179494 (Manring, PI)

Pending Review 10/2016

NIH/NHLBI

"Mathematical Modeling and In-Vitro Experiments for Treating Resistant Hypertension Using a Compliant Graft"

Major Goals: The goal of this project is to investigate a novel treatment for resistant hypertension by demonstrating mathematically that hypertension and the pressure-rise-rate (dP/dt) within the aorta may be controlled by using a compliant graft to absorb pressure spikes.

Role: Co-Investigator (15%)

R01 HL123706-01 (Emter, PI)

Reviewed 2/2014

NIH/NHLBI (under revision for A1 resubmission)

"Diet, Exercise, and Lipid Mediated Mitochondrial Dysfunction in Heart Failure"

Major Goals: The goal of this project is to examine the effects of diet and exercise on Ca²⁺-independent phospholipase A₂ (iPLA₂), myocardial lipid remodeling, and subsequent mitochondrial function in heart failure with preserved ejection fraction.

Role: PI

Completed

0035484 (Emter, PI) 1/1/2013-9/30/2015
Bristol Myers-Squibb/AstraZeneca \$1,355,199 direct costs
"Saxagliptin Attenuates Cardiac Hypertrophy and Remodeling Induced by Hypertrophic Stimuli"
Major Goals: The goal of this project is to determine the efficacy of saxagliptin and tadalafil for limiting cardiac remodeling heart failure with preserved ejection fraction.

Role: PI

MU-iCATS Pilot Grant (PI: Emter) 1/1/2012-12/31/2013
University of Missouri- Columbia \$50,000 direct costs
"The Effects of Cyclophilin Inhibition on Cardiomyocyte Cell Death and Ventricular Remodeling in Heart Failure"

Role: PI

P30 HL101332: Laughlin (PI) 9/1/09-8/31/12
NIH/NHLBI/ARRA \$1,222,750 direct costs
Cardiovascular Molecular/Cellular Biology.

Role: Co-Investigator (Tenure-Track Position and Start-up Award)

F32 NRSA HL093982-01 (Emter, PI) 6/1/08-11/15/09
NIH/NHLBI \$64,536 direct costs
The Effects of Exercise Training on Coronary Vascular Function in Heart Failure.

Role: PI

Unfunded

R01 HL132955 (Emter/Kapiloff, Multi-PI) Reviewed 2/2016
NIH/NHLBI
"Mechanisms of Concentric Remodeling in Swine Models of Health and Disease"
Major Goals: The goal of this project is to determine the role of RSK3 in both pathological and physiological hypertrophy.

Role: Co-PI (25%)

Harrington Scholar-Innovator Grant (Kapiloff & Emter, Co-PI's)
Reviewed 2015
The Harrington Project for Discovery and Development - Harrington Discovery Institute
"RSK3-Targeted Gene Therapy for Heart Failure"
Major Goals: The goal of this project is to validate the efficacy of RSK3 as a novel gene therapy for heart failure with preserved ejection fraction.

Role: Co-PI

Supplement to R01 HL112998 (Emter, PI) Reviewed 5/2015

NIH/NHLBI

PA-15-034: Administrative Supplements for Research on Sex/Gender

"Role of Coronary Function & Sex in Developing Heart Failure "

Major Goals: The goal of this project is to determine the role of the coronary vascular BK_{Ca} channel in the development of Heart Failure with Preserved Ejection Fraction

Role: PI

AHA Predoctoral Fellowship (Hiemstra, PI) Reviewed 5/2015

American Heart Association

"Role of Cardiomyocyte Function & Sex in Developing Heart Failure with Preserved Ejection Fraction"

Major goals: Salary support for research career development.

Role: Supervising PI

14-14NSBRI2-0022 (Laughlin, PI) Reviewed 5/2015 (unfunded)

National Aeronautics and Space Administration (NASA)

"Exploring Alternative VIIP Etiologies (EAVE); NSBRI Research and Technology Development to Support Crew Health and Performance in Space Exploration Missions."

Major Goals: The goal of this project is to develop a swine model of elevated intracranial pressure.

Role: Co-Investigator

BRP-PPG (Lardo & Lima, PI's) Reviewed 7/2013

NIH/NHLBI

Computed Tomography of Myocardial and Coronary Artery Disease

Major Goals: Develop and validate CT methods for quantifying myocardial extracellular volume fraction and improve image reconstruction and post-image processing of delayed enhanced CT infarct imaging.

Role: Co-Investigator- Aim 1 (10%)

U01 (Chatterjee & Bluemke, PI's) Reviewed 2/2013

NIH/NHLBI Clinical Center

PAR-13-029, "Opportunities for Collaborative Research at the NIH Clinical Center" "Glycosphingolipids and Glycosyltransferase in Cardiac Hypertrophy"

Major Goals: Determine the efficacy of D-PDMP in preventing left ventricular hypertrophy (LVH) in Yucatan pigs.

Role: Co-Investigator- Aim 1 (10%)

XI. BIBLIOGRAPHY

Peer-Reviewed Articles

1. T. Dylan Olver, Diana Klakotskaia, Brian S. Ferguson, Jessica A. Hiemstra, Todd R. Schachtman, M. Harold Laughlin, and **Craig A. Emter**. Carotid artery vascular mechanics serve as biomarkers of cognitive dysfunction in aortic-banded mini-swine that can be treated with an exercise intervention. *Journal of the American Heart Association*, 2016; 5: e003248 doi:10.1161/JAHA.116.003248
2. Jessica A. Hiemstra, Dong I. Lee, Khalid Chakir, Manuel Gutiérrez-Aguilar, Kurt D. Marshall, Pamela J. Zgoda, Noelany Cruz Rivera, Daniel G. Dozier, Brian S. Ferguson, Denise M. Heublein, John C. Burnett, Carolin Scherf, Jan R. Ivey, Gianmaria Minervini, Kerry S. McDonald, Christopher P. Baines, Maik Krenz, Timothy L. Domeier, and **Craig A. Emter**. Saxagliptin and Tadalafil Differentially Alter cGMP Signaling and Left Ventricular Function in Aortic-Banded Mini-Swine. *Journal of the American Heart Association*, 2016; 5: e003277 doi:10.1161/JAHA.116.003277
3. Hanft LM, Cornell TD, McDonald CA, Rovetto MJ, **Emter CA**, McDonald KS. Molecule Specific Effects of PKA-Mediated Phosphorylation on Rat Isolated Heart and Cardiac Myofibrillar Function. *Archives of Biochemistry and Biophysics*. 2016 Feb 5. pii: S0003-9861(16)30019-4. doi: 10.1016/j.abb.2016.01.019.
4. Michael S. Kapiloff and **Craig A. Emter**. The cardiac enigma: current conundrums in heart failure research. *F1000Research* 2016, **5**:72 (doi: 10.12688/f1000research.7278.1)
5. Kerry S. McDonald and **Craig A. Emter**. Exploring New Concepts in the Management of Heart Failure with Preserved Ejection Fraction: Is Exercise the Key for Improving Treatment? *Journal of Applied Physiology*, 119: 724–725, 2015.
6. Michael W. Tee, Samuel Won, Fabio S. Raman, Colin Yi, Davis Vigneault, Cynthia Davies-Venn, Songtao Liu, Albert Lardo, João A.C. Lima, J. Alison Noble, **Craig A. Emter**, & David A Bluemke. Regional Strain Analysis with Multidetector CT in a Swine Cardiomyopathy Model: Relationship to Cardiac MR Tagging and Myocardial Fibrosis. *Radiology*, Oct 2015, Vol. 277: 88–94, 10.1148/radiol.2015142339.
7. Jessica A. Hiemstra, Manuel Gutiérrez-Aguilar, Kurt D. Marshall, Kyle S. McCommis, Pamela J. Zgoda, Noelany Cruz-Rivera, Nathan T. Jenkins,

Maïke Krenz, Timothy L. Domeier, Christopher P. Baines, & **Craig A. Emter**. A New Twist on an Old Idea Part 2: Cyclosporine Preserves Normal Mitochondrial but not Cardiomyocyte Function in Mini-Swine with Compensated Heart Failure. *Physiological Reports*, 2 (6), 2014, e12050, doi: 10.14814/phy2.12050

8. Jessica A. Hiemstra, Songtao Liu, Mark A. Ahlman, Karl H. Schuleri, Albert C. Lardo, PhD, Christopher P. Baines, Kevin C. Dellsperger, David A. Bluemke, and **Craig A. Emter**. A New Twist on an Old Idea: A 2-Dimensional Speckle Tracking Assessment of Cyclosporine as a Therapeutic Alternative for Heart Failure with Preserved Ejection Fraction. *Physiological Reports*, 1 (7), 2013, e00174, doi: 10.1002/phy2.174
9. Kurt D. Marshall, Brittany N. Muller, Maïke Krenz, Laurin M Hanft, Kerry S. McDonald, Kevin C. Dellsperger, and **Craig A. Emter**. Heart Failure with Preserved Ejection Fraction: Chronic Low-Intensity Interval Exercise Training Preserves Myocardial O₂ Balance and Diastolic Function. *Journal of Applied Physiology*, 114: 131-147, 2013.
10. Kerry S. McDonald, Laurin Hanft, Timothy Domeier and **Craig Emter**. Length and PKA dependence of force generation and loaded shortening in porcine cardiac myocytes. *Biochemistry Research International*, Jan 2012: 371415.
11. **Emter CA**, Tharp DL, Ivey JR, Ganjam VK, and Bowles DK. Low-Intensity Interval Exercise Training Attenuates Coronary Vascular Dysfunction and Preserves Ca²⁺-sensitive K⁺ Current in Miniature Swine with LV Hypertrophy. *American Journal of Physiology – Heart and Circulatory Physiology*, 301: H1687-H1694, 2011.
12. **Emter CA** and Baines, CP. Low-Intensity Aerobic Interval Training Attenuates Pathological Left Ventricular Remodeling and Mitochondrial Dysfunction in Aortic-Banded Miniature Swine. *American Journal of Physiology – Heart and Circulatory Physiology*, 299: H1348-H1356, 2010.
13. **Emter, C.A.** and D.K. Bowles. Store-operated Ca²⁺ Entry is Not Essential for PDGF-BB Induced Phenotype Modulation in Rat Aortic Smooth Muscle. *Cell Calcium*, 48(1): 10-18, 2010.
14. Adam J. Chicco, Sylvia A. McCune, **Craig A. Emter**, Genevieve C. Sparagna, Meredith L. Rees, David A. Bolden, Kurt D. Marshall, Robert C. Murphy, and Russell L. Moore. Low-Intensity Exercise Training Delays Heart Failure and Improves Survival in Female Hypertensive Heart Failure Rats. *Hypertension*, 51: 1096-1102, 2008.

15. **Emter CA**, McCune SA, Sparagna GC, Radin MJ, and Moore RL. Low-Intensity Exercise Training Delays Onset of Decompensated Heart Failure in Spontaneously Hypertensive Heart Failure Rats. *American Journal of Physiology – Heart and Circulatory Physiology*, 289: H2030-H2038, 2005.

Invited Review

1. **Craig A. Emter** and Douglas K. Bowles. Curing the Cure: Utilizing exercise to limit cardiotoxicity. *Medicine and Science in Sports and Exercise*. 40(5): 806-807, 2008.

Book Chapters

1. **Craig A. Emter** and M. Harold Laughlin (2013). Chapter 32- “Adaptations to Cardiorespiratory Exercise Training”. *American College of Sports Medicine’s Resource Manual for Guidelines for Exercise Testing and Prescription*, 7th Edition.

Abstracts

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