

Michael Benjamin Stout, PhD

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Department of Nutritional Sciences, AHB 3057
College of Allied Health
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Oklahoma City, OK 73126

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EDUCATION/TRAINING

Mayo Clinic

Postdoctoral Training
Area of Study: Aging Biology and Metabolism

Rochester, MN

September 2016

Ohio State University

Degree: Doctor of Philosophy
Area of Study: Nutrition and Metabolism

Columbus, OH

June 2011

University of Central Florida

Degree: Master of Arts
Area of Study: Exercise Physiology

Orlando, FL

May 2005

Bowling Green State University

Degree: Bachelor of Science
Area of Study: Engineering Technology

Bowling Green, OH

May 2001

APPOINTMENTS

Assistant Professor

University of Oklahoma Health Sciences Center – Nutritional Sciences

Oklahoma City, OK

September 2018-current

Senior Research Scientist

University of Oklahoma Health Sciences Center – Nutritional Sciences

Oklahoma City, OK

September 2016-August 2018

Research Associate

Mayo Clinic – Kogod Center on Aging

Rochester, MN

November 2015-August 2016

Senior Research Fellow

Mayo Clinic – Kogod Center on Aging

Rochester, MN

November 2013- November 2015

Research Fellow

Mayo Clinic – Kogod Center on Aging

Rochester, MN

November 2011-November 2013

Graduate Research Associate

Ohio State University – Human Nutrition

Columbus, OH

September 2007-June 2011

Graduate Teaching Associate

Ohio State University – Exercise Physiology

Columbus, OH

September 2005-June 2007

Clinical Exercise Physiologist

Rippe Health Assessment

Celebration, FL

January 2005-August 2005

Research Exercise Physiologist

Rippe Lifestyle Institute

Celebration, FL

March 2005-August 2005

Graduate Research Associate

University of Central Florida – Exercise Physiology

Orlando, FL

August 2003-May 2005

CURRENT RESEARCH SUPPORT

Cellular senescence and epigenomic remodeling in ovarian aging

Agency: NIH/NIA

Type: R01 [AG069742]

Amount: \$1,250,000 (direct)

Period: September 2020-May 2025

Role: PI [30% effort]

Mechanisms of metabolic, inflammatory, and healthspan enhancement by 17 α -estradiol

Agency: NIH/NIA

Type: K99/R00 [AG051661]

Amount: \$1,024,528 (direct)

Period: September 2016-May 2021

Role: PI [30% effort]

Role of hypothalamic estrogen receptor- α in 17 α -estradiol-mediated metabolic benefits

Agency: Oklahoma Center for the Advancement of Science & Technology

Type: Health Research Program

Amount: \$135,000 (direct)

Period: October 2020-September 2023

Role: PI

Role of estrogen receptor- α in aging and sex-specific responses to 17 α -estradiol

Agency: Presbyterian Health Foundation

Type: Competitive Bridge Grant Program

Amount: \$75,000 (direct)

Period: October 2020-September 2021

Role: PI

Evaluating metabolic effects of 17 α -estradiol in obese canines; a translational model for metabolic research

Agency: Harold Hamm Diabetes Center

Type: Competitive Team Science Research Program

Amount: \$100,000 (direct)

Period: July 2019-March 2021

Role: M-PI (Miller, Stout, Davis)

Interrogating neuron-specific effects of 17 α -estradiol in the hypothalamus

Agency: Harold Hamm Diabetes Center

Type: Competitive Pilot Research Program

Amount: \$50,000 (direct)

Period: July 2019-March 2021

Role: PI

PENDING RESEARCH SUPPORT

Role of estrogen receptor- α in aging and sex-specific responses to 17 α -estradiol

Agency: NIH/NIA

Type: R01 [AG070035]

Amount: \$1,777,836 (direct)

Role: PI [50% effort]

Impact Score: 38 (22nd percentile)

Study Section: CMAD

Resubmission: November 2020

A proof-of-principle, placebo-controlled study targeting sarcopenic obesity with 17 α -estradiol

Agency: NIH/NIA

Type: R33 [AG072806]

Amount: \$1,500,000 (direct)
Role: M-PI (Stout, Miller) [20% effort]
Impact Score:
Study Section: ASG/SEP

A new translational rat model for evaluating anti-aging interventions

Agency: NIH/NIA
Type: R21 [AG072137]
Amount: \$275,000 (direct)
Role: Co-I (PI: Richardson) [10% effort]
Impact Score: 32
Study Section: NIA-B
Resubmission: February 2021

COMPLETED RESEARCH SUPPORT

Assessing peripheral mechanisms of hypothalamic anorexigenic pathway activation by 17 α -estradiol

Agency: NIH/GMS - Diabetes Research in Oklahoma CoBRE
Type: Competitive Pilot Research Program
Amount: \$100,000 (direct)
Period: October 2018-July 2020
Role: PI

Unraveling sexually divergent responsiveness to 17 α -estradiol treatment

Agency: Presbyterian Health Foundation
Type: Competitive Pilot Research Program
Amount: \$50,000 (direct)
Period: September 2018-August 2019
Role: PI

Evaluation of hypothalamic ER α activity in age-related declines in hepatic gluconeogenic plasticity

Agency: Einstein Nathan Shock Center
Type: Competitive Pilot Research Program
Amount: \$24,800 (direct in services)
Period: September 2018-August 2019
Role: PI

Evaluation of age- and sex-specific metabolic responses to short-term 17 α -estradiol infusions

Agency: Einstein Nathan Shock Center
Type: Competitive Pilot Research Program
Amount: \$25,200 (direct in services)
Period: September 2017-August 2018
Role: PI

Body composition assessment in rodents: The case for NMR technology at OUHSC

Agency: Harold Hamm Diabetes Center
Type: Competitive Equipment Grant Program
Amount: \$44,700 (direct)
Period: January 2017-June 2017
Role: PI

LC/MS Multiplex Protein Quantification for assessing Age-related Dynamics in Proteostasis

Agency: Oklahoma Nathan Shock Center
Type: Competitive Pilot Research Program
Amount: \$11,550 (direct)
Period: June 2016-May 2017
Role: PI

Mitigation of obesity and associated morbidities by 17 α -estradiol: A novel therapeutic?

Agency: Minnesota Obesity Center
Type: Competitive Pilot Research Program
Amount: \$25,000 (direct)
Period: April 2015-March 2016
Role: PI

Somatotropic drive and white adipose tissue cellular senescence

Agency: Mayo Clinic Robert and Arlene Kogod Center on Aging Research Endowment Fund
Type: Competitive Career Development Award, Multi-campus
Amount: \$115,384 (direct)
Period: July 2013-June 2015
Role: PI

Role of dietary fat in hepatic and peripheral insulin sensitivity: A direct assessment by hyperinsulinemic-euglycemic clamp

Agency: Ohio Dairy Association
Type: Competitive Student Grant Program
Amount: \$2000 (direct)
Period: July 2010-June 2011
Role: PI

Role of dairy fat in obesity: Effect of dietary conjugated linoleic acid on adipose tissue phenotype in mice

Agency: Ohio Dairy Association
Type: Competitive Student Grant Program
Amount: \$2000 (direct)
Period: July 2009-June 2010
Role: PI

A dose-response analysis of dietary conjugated linoleic acid and the pathophysiological effects on hepatic steatosis and markers of hepatic insulin resistance

Agency: Ohio Agricultural Research and Development Center
Type: Competitive Student Grant Program
Amount: \$6000 (direct)
Period: June 2008-June 2009
Role: PI

PUBLICATIONS

Ansere V, Ali-Mondal S, Sathiaseelan R, Garcia DN, Isola JVV, Hense JD, Ocañas SR, Buettner KB, **Stout MB**, Schneider A, Freeman WM. Cellular hallmarks of aging emerge in the ovary prior to primordial follicle exhaustion. *In Review*

Rozich NS, Lewis S, Chen S, Stewart KE, **Stout MB**, Dooley WC, Fischer LE, Morris KT. Women survive longer than men after undergoing cytoreductive surgery and HIPEC for appendiceal cancer. *In Review*

Kurup K, Mann SN, Jackson J, Matyi S, **Stout MB**, Richardson A, Unnikrishnan, A. Litter expansion alters metabolic homeostasis in a sexually divergent manner. *In Review*

Mann SN, Hadad N, Nelson-Holte MH, Rothman AR, Sathiaseelan R, Mondal SA, Agbaga M-P, Unnikrishnan A, Subramaniam M, Hawse JR, Huffman DM, Freeman WM, **Stout MB**. Health benefits attributed to 17 α -estradiol, a lifespan-extending compound, are mediated through estrogen receptor α . *Elife*. 2020. *In Revision*

Mann SN, Pitel KS, Nelson-Holte MH, Iwaniec UT, Turner RT, Sathiaseelan R, Kirkland JL, Schneider A, Morris KT, Malayannan S, Hawse JR, **Stout MB**. 17 α -estradiol prevents ovariectomy-mediated obesity and bone loss. *Exp. Gerontol*. 2020. *In Press*

Chucair-Elliott AJ, Ocanas SR, Stanford DR, Ansere VA, Buettner KB, Porter H, Eliason NL, Reid J, Sharpe AL, **Stout MB**, Beckstead MJ, Miller BF, Richardson A, Freeman WM. Inducible cell-specific mouse models for paired epigenetic and transcriptomic studies of microglia and astroglia. *Commun. Biol.* 2020. *In Press*

Schneider A, Saccon TD, Garcia DN, Zanini BM, Isola JVV, Hense JD, Alvarado-Rincón JA, Cavalcante M, **Stout MB**, Bartke A, Masternak MM. The interconnections between somatic and ovarian aging. *J. Gerontol. A. Biol. Sci. Med. Sci.* 2020. *In Press*

Sidhom S, Schneider A, Fang Y, McFadden S, Darcy J, Sathiseelan R, Palmer AK, Steyn FJ, Grillari J, Kopchick JJ, Bartke A, Siddiqi S, Masternak MM, **Stout MB**. 17 α -estradiol modulates IGF1 and hepatic gene expression in a sex-specific manner. *J. Gerontol. A. Biol. Sci. Med. Sci.* 2020. *In Press*

Ray AL, Nofchissey RA, Khan MA, Reidy MA, Lerner MR, Wu X, Guo S, Hill SL, Weygant N, Adams SF, Castillo EF, Berry WL, **Stout MB**, Morris KT. The role of sex in the innate and adaptive immune environment of metastatic colorectal cancer. *Br. J. Cancer.* 123(4):624–632, 2020.

Isola JVV, Zanini BM, Sidhom S, Kopchick JJ, Bartke A, Masternak MM, **Stout MB**, Shneider A. 17 α -estradiol promotes ovarian aging in growth hormone receptor knockout mice, but not wild-type littermates. *Exp. Gerontol.* 129:110769, 2020.

Miller BF, Pharaoh G, Hamilton KL, Peelor FF III, Kirkland JL, Freeman WM, Mann SN, Kinter M, Price JC, **Stout MB**. Short-term calorie restriction and 17 α -estradiol administration elicit divergent effects on proteostatic processes and protein content in metabolically active tissues. *J. Gerontol. A. Biol. Sci. Med. Sci.* 75(5):849-857, 2020.

Chucair-Elliott AJ, Ocanas SR, Stanford DR, Hadad N, Wronowski B, Otalora L, **Stout MB**, Freeman WM. Tamoxifen induction of Cre recombinase does not cause long lasting or sexually divergent responses in the CNS epigenome or transcriptome. *Geroscience.* 41(5):691-708, 2019.

Palmer AK, Xu M, Zhu Y, Pirtskhalava T, Weivoda MM, Hachfeld CM, Prata LG, van Dijk TH, Verkade E, Casclang-Verzosa G, Johnson KO, Cubro H, Doornebal EJ, Ogrodnik M, Jurk D, Jensen MD, Chini EN, Miller JD, Matveyenko A, **Stout MB**, Schafer MJ, White TA, Hickson LJ, Demaria M, Garovic V, Grande J, Arriaga E, Kuipers F, von Zglinicki T, LeBrasseur NK, Campisi J, Tchkonja T, Kirkland JL. Targeting senescent cells alleviates obesity-induced metabolic dysfunction. *Aging Cell.* 18(3):e12950, 2019

Reagan AM, Gu X, Paudel S, Ashpole NM, Zalles M, Sonntag WE, Ungvari Z, Csiszar A, Otalora L, Freeman WM, **Stout MB**, Elliott MH. Age-related focal loss of contractile vascular smooth muscle cells on retinal arterioles is accelerated by caveolin-1 deficiency. *Neurobiol. Aging.* 10(71):1-12, 2018.

Garratt M, **Stout MB**. Hormone actions controlling sex-specific life-extension. *Aging.* 10(3):293-294, 2018.

Steyn FJ, Ngo ST, Chen VP, , Bailey-Downs LC, Xie TY, Ghdami M, Brimijoin S, Freeman WM, Rubinstein M, Low MJ, **Stout MB**. 17 α -estradiol acts through hypothalamic pro-opiomelanocortin expressing neurons to reduce feeding behavior. *Aging Cell.* 17(1): e12703, 2018.

Masser DR, Hadad N, Porter H, **Stout MB**, Unnikrishnan A, Stanford DR, Freeman WM. Analysis of DNA modifications in aging research. *Geroscience.* 40(1):11-29, 2018.

Du M, Mangold CA, Bixler GV, Brucklacher RM, Masser DR, **Stout MB**, Elliott MH, Freeman WM. Retinal gene expression responses to aging are sexually divergent. *Mol. Vis.* 23:707-717, 2017.

Gesing A, Wiesenborn D, Do A, Menon V, Schneider A, Victoria B, **Stout MB**, Bartke A, Masternak MM. A long-lived mouse model lacking both growth hormone and growth hormone receptor: A new model for aging studies. *J. Gerontol. A. Biol. Sci. Med. Sci.* 72(8):1054-1061, 2017.

Stout MB, Justice JN, Nicklas BJ, Kirkland JL. Physiological aging: Links among adipose tissue dysfunction, diabetes, and frailty. *Physiology.* 32(1):9-19, 2017.

- Stout MB**, Steyn FJ, Jurczak MJ, Camporez JPG, Zhu Y, Hawse JR, Jurk D, Palmer AK, Xu M, Pirtskhalava T, Evans GL, Santos RDS, Frank AP, White TA, Monroe DG, Singh RJ, Verzosa GC, Miller JD, Clegg DJ, LeBrasseur NK, von Zglinicki T, Shulman GI, Tchkonina T, Kirkland JL. Late-life administration of 17 α -estradiol alleviates metabolic and inflammatory dysfunction without inducing feminization. *J. Gerontol. A. Biol. Sci. Med. Sci.* 72(1):3-15, 2017.
- Li R, Steyn FJ, **Stout MB**, Lee K, Cully TR, Calderon JC, Ngo ST. Development of a high-throughput method for real-time assessment of cellular metabolism in intact long skeletal muscle fibre bundles. *J. Physiology.* 594(24):7197-7213, 2016.
- Huffman DM, Justice JN, **Stout MB**, Kirkland JL, Barzilai N, Austad SN. Evaluating healthspan in pre-clinical models of aging and disease: Guidelines, challenges and opportunities for geroscience. *J. Gerontol. A. Biol. Sci. Med. Sci.* 71(11):1395-1406, 2016.
- Kirkland JL, **Stout MB**, Sierra F. Resilience in aging mice. *J. Gerontol. A. Biol. Sci. Med. Sci.* 71(11):1407-1414, 2016.
- Chen VP, Gao Y, Geng L, **Stout MB**, Jensen MJ, Brimijoin S. Butyrylcholinesterase deficiency promotes adipose tissue growth and hepatic lipid accumulation in male mice on high-fat diet. *Endocrinology.* 157(8):3086-3095, 2016.
- Schafer MJ, White TA, Evans G, Tonne JM, Verzosa GC, **Stout MB**, Mazula DL, Palmer AK, Baker DJ, Jensen MD, Torbenson MS, Miller JD, Ikeda Y, Tchkonina T, van Deursen JM, Kirkland JL, LeBrasseur NK. Exercise prevents diet-induced cellular senescence in adipose tissue. *Diabetes.* 65(6):1606-1615, 2016.
- Zhu Y, Tchkonina T, Fuhrmann-Stroissnigg H, Dai HM, Ling YY, **Stout MB**, Pirtskhalava T, Giorgadze N, Johnson KO, Giles CB, Wren JD, Niedernhofer LJ, Robbins PD, Kirkland JL. Identification of a novel senolytic agent, navitoclax, targeting the Bcl-2 family of anti-apoptotic factors. *Aging Cell.* 15(3):428-435, 2016.
- Xu M, Palmer AK, Ding H, Weivoda MW, Pirtskhalava T, White TA, Sepe A, Johnson KO, **Stout MB**, Giorgadze N, Jensen MD, LeBrasseur NK, Tchkonina T, Kirkland JL. Targeting senescent cells enhances adipogenesis and metabolic function in old age. *Elife.* 19(4):e12997, 2015.
- Xu M, Tchkonina T, Ding H, Ogradnik M, Lubbers ER, Pirtskhalava T, White TA, Johnson KO, **Stout MB**, Mezera V, Giorgadze N, Jensen MD, LeBrasseur NK, Kirkland JL. JAK inhibition alleviates the cellular senescent-associated secretory phenotype and frailty in old age. *Proc. Natl. Acad. Sci. USA.* 112(46):E6301-E6310, 2015.
- Stout MB**, Swindell WR, Zhi X, Rohde K, List EO, Berryman DE, Kopchick JJ, Gesing A, Fang Y, Masternak MM. Transcriptome profiling reveals divergent expression shifts in brown and white adipose tissue from long-lived GHRKO mice. *Oncotarget.* 6(29):26702-26715, 2015.
- List EO, Berryman DE, Ikeno Y, Hubbard GB, Funk K, Comisford R, Young JA, **Stout MB**, Tchkonina T, Masternak MM, Bartke A, Kirkland JL, Miller RA, Kopchick JJ. Removal of growth hormone receptor (GHR) in muscle of male mice replicates some of the health benefits seen in global GHR $^{-/-}$ mice. *Aging.* 7(7):500-512, 2015.
- Stout MB**, Tchkonina T, Kirkland JL. Growth hormone in adipose dysfunction and senescence. *Oncotarget.* 6(13):10667-10668, 2015.
- Kliwer KL, Ke JY, Lee HY, **Stout MB**, Cole RM, Samuel VT, Shulman GI, Belury MB. Short-term food restriction followed by controlled refeeding promotes gorging behavior, enhances fat deposition, and diminishes insulin sensitivity in mice. *J. Nutr. Biochem.* 26(7):721-728, 2015.

Zhu Y, Tchkonina T, **Stout MB**, Giorgadze N, Wang L, Li P, Holtz-Heppelmann CJ, Bouloumié A, Jensen MD, Bergen III HR, Kirkland JL. Inflammation and the depot-specific secretome of human fat cell progenitors. *Obesity*. 23(5):989-999, 2015.

Zawada I, Masternak MM, List EO, **Stout MB**, Berryman DE, Lewinski A, Kopchick JJ, Bartke A, Karbownik-Lewinska M, Gesing A. Gene expression of key regulators of mitochondrial biogenesis is sex dependent in mice with growth hormone receptor deletion in liver. *Aging*. 7(3):195-204, 2015.

Zhu Y, Tchkonina T, Pirtskhalava T, Gower A, Ding H, Giorgadze N, Palmer AK, Ikeno Y, Borden G, Lenburg M, O'Hara SP, LaRusso NF, Miller JD, Roos CM, Verzosa GC, LeBrasseur NK, Wren JD, Farr JN, Khosla S, **Stout MB**, McGowan SJ, Fuhrmann-Stroissnigg H, Gurkar AU, Zhao J, Colangelo D, Dorransoro A, Ling YY, Barghouthy AS, Navarro DC, Sano T, Robbins PD, Niedernhofer LJ, Kirkland JL. The achilles' heel of senescent cells: From transcriptome to senolytic drugs. *Aging Cell*. 14(4):644-658, 2015.

Idrissova L, Malhil H, Werneburg NW, LeBrasseur NK, Bronk SF, Fingas C, Tchkonina T, Pirtskhalava T, White TA, **Stout MB**, Hirsova P, Kakisaka K, Liedtke C, Trautwein C, Finnberg N, El-Deiry WS, Kirkland JL, Gores GJ. Trail receptor deletion suppresses the inflammation of nutrient excess. *J. Hepatol*. 62(5):1156-1163, 2014.

Stout MB, Tchkonina T, Pirtskhalava T, Palmer AK, List EO, Berryman DE, Lubbers ER, Escande C, Spong A, Masternak MM, Oberg AL, LeBrasseur NK, Miller RA, Kopchick JJ, Bartke A, Kirkland JL. Growth hormone action predicts age-related white adipose tissue dysfunction and senescent cell burden in mice. *Aging*. 6(7):575-586, 2014.

Stout MB, Tchkonina T, Kirkland JL. The Aging Adipose Organ: Lipid Redistribution, Inflammation, and Cellular Senescence. *Adipose tissue and Adipokines in Health and Disease – Second Edition*, 2014.

List EO, Berryman DE, Funk K, Jara A, Kelder B, Wang F, **Stout MB**, Zhi X, Sun L, White TA, Lebrasseur NK, Pirtskhalava T, Tchkonina T, Jensen EA, Zhang W, Masternak MM, Kirkland JL, Miller RA, Bartke A, Kopchick JJ. Liver-specific GH receptor gene disrupted (LiGHRKO) mice have decreased endocrine IGF-1, increased local IGF-1, and altered body size, body composition, and adipokine profiles. *Endocrinology*. 155(5):1793-1805, 2014.

Stout MB, Lui LF, Belury MA. Dietary conjugated linoleic acid induces hepatic diacylglycerol accumulation and protein kinase C epsilon activation in high-fat fed mice. *Mol. Nutr. Food Res*. 55(7): 1010-1017, 2011.

Asp ML, Collene AL, Norris LE, Cole RM, **Stout MB**, Tang SY, Hsu JC, Belury MA. Time-dependent effects of safflower oil to improve glycemia, inflammation and blood lipids in obese, post-menopausal women with type 2 diabetes: A randomized, double-masked, crossover study. *Clin. Nutr*. 30(4): 443-449, 2011.

Tian M, Kliewer KL, Asp ML, **Stout MB**, Belury MA. c9t11-CLA-rich oil fails to attenuate wasting in colon-26 tumor-induced late stage cancer cachexia in male CD2F1 mice. *Mol. Nutr. Food Res*. 55(2): 268-277, 2011.

Tian M, Nishijima Y, Asp ML, **Stout MB**, Reiser PJ, Belury MA. Cardiac alterations in cancer-induced cachexia in mice. *Int. J. Oncol*. 37(2): 347-353, 2010.

Campbell JA, Martin JE, Melendez K, **Stout MB**, Lyvers-Peffer PA. Postnatal hepatic fatty acid oxidative capacity of preterm pigs receiving TPN does not differ from that of term pigs and is not affected by supplemental arachidonic and docosahexaenoic acids. *J. Nutr*. 140(4): 752-759, 2010.

Winnick JJ, Sherman WM, Habash DL, **Stout MB**, Failla ML, Belury MA, Schuster DP. Short-term aerobic exercise training in obese humans with type 2 diabetes mellitus improves whole body insulin sensitivity through gains in peripheral, not hepatic insulin sensitivity. *J. Clin. Endocrinol. Metab*. 93(3): 771-778, 2007.

MENTORING

Pavan Parikh, MD, Assistant Professor, Maternal Fetal Medicine
Role: Primary Mentor for Research Program and Grant Writing

Duration: Fall 2019 - current

Shivani N. Mann, PhD Candidate, Neuroscience

Role: Primary Mentor and Chair of Dissertation Committee

Duration: Spring 2017 - current

Roshini Sathiaselan, PhD Student, Allied Health Sciences

Role: Primary Mentor and Chair of Dissertation Committee

Duration: Fall 2019 - current

Samim Ali Mondal, PhD, Postdoctoral Research Fellow, Nutritional Sciences

Role: Primary Mentor and Chair of Postdoctoral Progress Committee

Duration: Summer 2019 - current

Alicia Rothman, Master of Science Student, Nutritional Sciences

Role: Primary Mentor and Chair of Thesis Committee

Duration: Fall 2018 - current

Eileen Parks, PhD Candidate, Neuroscience

Role: Member of Dissertation Committee

Duration: Fall 2017 - current

Sarah Ocanas, PhD Candidate, Physiology

Role: Member of Dissertation Committee

Duration: Summer 2019 - current

Hunter Porter, PhD Candidate, Neuroscience

Role: Member of Dissertation Committee

Duration: Summer 2019 - current

Lorin Pope, Summer Undergraduate Research Student, Nutritional Sciences

Role: Primary Mentor

Duration: Summer & Fall 2019; Summer 2020

Nick Standifer, Summer Undergraduate Research Student, Nutritional Sciences

Role: Co-Primary Mentor

Duration: Summer 2018

LECTURES & ORAL PRESENTATIONS

17 α -estradiol acts synergistically through central and peripheral mechanisms to reverse obesity- and age-related metabolic dysfunction. 4th Annual UAB Shock Center Symposium, University of Alabama-Birmingham, Birmingham, AL April 2020

Central and peripheral actions of a nonfeminizing estrogen for reversal of obesity and age-related metabolic dysfunction. Department of Anatomy, University of Otago, Dunedin, New Zealand, February 2020

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Molecular Pharmacology, Albert Einstein College of Medicine, New York, NY, December 2019

17 α -estradiol acts synergistically through central and peripheral mechanisms to reverse obesity and metabolic dysfunction. Oklahoma Center for Neuroscience, University of Oklahoma Health Sciences Center, Oklahoma City, OK, May 2019

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI, April 2019

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Veterinary Biomedical Sciences, Oklahoma State University, Stillwater, OK, January 2019

Estrogen receptor α is required for 17α -estradiol-mediated effects on systemic metabolism. Harold Hamm Diabetes Center Research Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK, November 2018

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Nutritional Sciences Seminar Series, University of Texas at Austin, Austin TX, April 2018

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Division of Endocrinology, Diabetes, and Metabolism Seminar Series, University of Cincinnati, Cincinnati OH, March 2018

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Physiology Seminar Series, University of Oklahoma Health Sciences Center, Oklahoma City, OK, March 2018

Exploring the therapeutic utility of nonfeminizing estrogens for mitigating metabolic disease. Department of Biomedical Sciences Seminar Series, University of Central Florida, Orlando, FL, February 2018

Building a case for the use of ‘nonfeminizing’ estrogens for curtailing disease. Department of Endocrinology Seminar Series, University of Oklahoma Health Sciences Center, Oklahoma City, OK, January 2018

Reversing age-related systemic dysfunction with 17α -estradiol. Ramadan Symposium, East Central University, Ada, OK, January 2018

Reversal of metabolic perturbations with a ‘non-feminizing’ estrogen. Department of Pediatric Endocrinology Seminar Series, University of Oklahoma Health Sciences Center, Oklahoma City, OK, December 2017

17α -estradiol acts synergistically through central and peripheral mechanisms to reverse obesity and metabolic dysfunction. Harold Hamm Diabetes Center Research Symposium, University of Oklahoma Health Sciences Center, Oklahoma City, OK, November 2017

17α -estradiol acutely acts through hypothalamic pro-opiomelanocortin-expressing neurons. Gordon Research Seminar – Integrative Biology of Aging Invited Lecture, Les Diablerets, Switzerland, July 2017

Alpha males love their estrogens: The case for morbidity compression by 17α -estradiol. Department of Physiology Seminar Series, University of Oklahoma Health Sciences Center, Oklahoma City, OK, May 2017

Alpha males love their estrogens: The case for morbidity compression by 17α -estradiol. Flagship Seminar Series, Oklahoma Medical Research Foundation, Oklahoma City, OK, April 2017

17α -estradiol is a novel strategy for curtailing age-related metabolic dysfunction. Metabolism & Aging Seminar Series, Oklahoma Medical Research Foundation, Oklahoma City, OK, March 2017

Reversal of age-related metabolic declines through nonfeminizing estrogens. Division of Endocrinology Seminar Series, University of Rochester, Rochester, NY, June 2016

Translational approaches to curtailing age-related metabolic declines. NIA Translational Gerontology Branch Seminar Series, Baltimore, MD, February 2016

Metabolic perturbations in obesity & aging: A search for novel therapeutics. Nutritional Sciences Seminar Series, Oklahoma University Health Sciences Center, Oklahoma City, OK, January 2016

Connecting obesity and aging through molecular pathways: Potential treatment strategies. Biological Sciences Seminar Series, Michigan Technological University, Houghton, MI, December 2015

Novel therapeutics for treating metabolic changes in obesity and aging. Nutrition and Health Sciences Seminar Series, University of Nebraska, Lincoln, NE, December 2015

17α -estradiol curtails age-related disease burden. Gordon Research Conference – Biology of Aging, Newry, ME, July 2015

Alleviation of age-related metabolic dysfunction by 17 α -estradiol: A novel therapeutic strategy. 97th Annual Meeting of the Endocrine Society, San Diego, CA, March 2015

Effects of 17 α -estradiol on age-related phenotypes. Kogod Aging Center Seminar Series, Mayo Clinic, December 2014

The role of adipose tissue in age-related morbidity. QPIG Seminar Series, University of Queensland, Brisbane, Australia, April 2014.

Blunted growth hormone signal transduction mitigates lipid redistribution and WAT senescent cell burden. International Congress on Obesity, Kuala Lumpur, Malaysia, March 2014

FaGHRKO mice are protected from obesity-related inflammation and cellular senescence in late life. Gordon Research Conference – Biology of Aging, Lucca (Barga), Italy, August 2013

FaGHRKO mice are protected from obesity-related inflammation and cellular senescence. Gordon Research Seminar – Metabolism and Aging, Lucca (Barga), Italy, August 2013

Conjugated linoleic acid alters adipose phenotype and initiates hepatic insulin resistance. United States Army Research Seminar Series, United States Army Research Institute of Environmental Medicine, July 2011

Alterations in lipid metabolism by conjugated linoleic acid initiates metabolic dysfunction. Kogod Center on Aging Seminar Series, Mayo Clinic, July 2011

Alterations in lipid metabolism by conjugated linoleic acid initiates metabolic dysfunction. Endocrinology Seminar Series, University of Pittsburgh, July 2011

Inducible white adipose thermogenesis by conjugated linoleic acid does not prevent hepatic steatosis and hepatic insulin resistance in mice. Davis Heart and Lung Research Institute – Research in Progress, Ohio State University, January 2011

Adipose perturbations by conjugated linoleic acid initiates hepatic insulin resistance in mice. Human Nutrition Seminar Series, Ohio State University, December 2010

The effects of conjugated linoleic acid on mammalian metabolism. Visiting Scientist Lecture, Yale University. April 2010

Dietary conjugated linoleic acid alters adipose phenotype in a depot-specific manner in mice. Russell Klein Memorial Symposium, Ohio State University, June 2010

Evidence for adipose depot-specific differential effects of dietary conjugated linoleic acid. Russell Klein Memorial Symposium, Ohio State University, June 2009

Role of conjugated linoleic acid in hepatic lipid deposition and markers of hepatic insulin resistance. Endocrinology Research Conference, Ohio State University, April 2009

Evidence for hepatic insulin resistance without hepatic steatosis by dietary conjugated linoleic acid. Russell Klein Memorial Symposium, Ohio State University, May 2008

Skeletal muscle cross-bridge cycling. Kinesiology Special Lecture, Ohio State University, May 2007

Aerobic capacity and mortality. Wellness Research Center, University of Central Florida, March 2005

Exercise intensity and immune function. Wellness Research Center, University of Central Florida, November 2004

TEACHING

Fall 2020 – Allied Health Sciences Research Seminar (~15 students)

Spring 2007 – Applied Physiology of Exercise II-Laboratory (~75 students)

Spring 2007 – Assessment of Skeletal Muscle Strength and Endurance-Laboratory (~15 students)

Winter 2007 – Applied Physiology of Exercise I-Laboratory (~45 students)
Winter 2007 – Assessment of Skeletal Muscle Strength and Endurance-Laboratory (~15 students)
Autumn 2006 – Human Anatomy and Biomechanics-Laboratory (~60 students)
Autumn 2006 – Assessment of Skeletal Muscle Strength and Endurance-Laboratory (~15 students)
Summer 2006 – Human Anatomy and Biomechanics-Laboratory (~30 students)
Spring 2006 – Applied Physiology of Exercise II-Laboratory (~45 students)
Spring 2006 – Introduction to Racquetball (~20 students)
Winter 2006 – Methodological Testing in Exercise Physiology-Laboratory (~45 students)
Winter 2006 – Introduction to Racquetball (~20 students)
Autumn 2005 – Applied Physiology of Cardiorespiratory Testing-Laboratory (~15 students)
Autumn 2005 – Human Anatomy and Biomechanics-Laboratory (~15 students)

CERTIFICATIONS & MEMBERSHIPS

American Aging Association (AGE), Member 2014-current
American College of Sports Medicine (ACSM), *Certified Health & Fitness Specialist #20016*
National Strength & Conditioning Association (NSCA), *Certified Strength & Conditioning Specialist #200525769*
Endocrine Society, Member 2014-current
Gerontological Society of America (GSA), Member 2013-current
American Association for the Advancement of Science (AAAS), Member 2008-current
American Physiological Society (APS), Member 2006-current
American Diabetes Association (ADA), Member 2005-2010
American College of Sports Medicine (ACSM), Member 2003-2007
North American Association for the Study of Obesity (NAASO), Member 2004-2007, 2014
National Strength and Conditioning Association (NSCA), Member 2004-2007

AWARDS & HONORS

Faculty Excellence in Research Award – College of Allied Health, OUHSC, 2020
Editor's Choice Manuscript Award, Journal of Gerontology, Biological Sciences, 2017
NIA Summer Training Course Invitee – Aging Research Fellowship, 2015
Gordon Research Conference/Seminar – Postdoctoral Research Fellowship Travel Award, 2015
NIH Loan Repayment Program Awardee, NIA, 2013-2015
4th Alliance for Healthy Aging Symposia – Postdoctoral Research Fellowship Travel Award, 2013
Gordon Research Conference/Seminar – Postdoctoral Research Fellowship Travel Award, 2013
Hazel Williams Lapp Dissertation Fellowship, Ohio State University, 2010-2011
Taber-Thompson Dissertation Fellowship, Ohio State University, 2009-2010
Ohio State University Nutrition Predoctoral Fellowship, Ohio State University, 2007-2008
Bernstein Memorial Dissertation Scholarship, Ohio State University, 2008
Thiergartner Scholarship, Ohio State University, 2007
Zuck Scholarship, Ohio State University, 2006
Barr Scholarship, Ohio State University, 2005
Graduate School Research Fellowship, University of Central Florida, 2004

SERVICE & COMMITTEES

External Ad hoc Reviewer – Southern Illinois University College of Medicine, Team Science Panel, 2020
Ad hoc Reviewer – College of Allied Health, PHF New Investigator Grant Review Committee, 2020
Ad hoc Reviewer – College of Medicine, Seed Grant Review Committee, 2020
Ad hoc Reviewer – Office of Research Administration, PHF Team Science Grant Review Committee, 2020
Ad hoc Reviewer – Office of Research Administration, PHF Student Grant Review Committee, 2020
Ad hoc Reviewer – Proceedings of the National Academy of Sciences, 2019-present
Ad hoc Reviewer – Mechanisms of Ageing and Development, 2019-present
Ad hoc Reviewer – College of Medicine, Seed Grant Review Committee, 2019
Ad hoc Reviewer – Translational Psychiatry, 2019-present

Ad hoc Reviewer – Office of Research Administration, PHF Student Grant Review Committee, 2019
Ad hoc Reviewer – College of Allied Health, PHF New Investigator Grant Review Committee, 2019
Ad hoc Reviewer – Obesity Research & Clinical Practice, 2019-present
Ad hoc Reviewer – OUHSC Graduate College Student Leadership Judge, 2019
Ad hoc Reviewer – Steroids, 2018-present
Poster Presentation Judge – Harold Hamm Diabetes Center Research Symposium, 2018
Planning & Steering Committee Member - Harold Hamm Diabetes Center Research Symposium, 2018
Research Growth Committee Member – College of Allied Health, OUHSC, 2018-present
Poster Presentation Judge – Oklahoma Nathan Shock Center on Aging Geroscience Symposium, 2018
Ad hoc Reviewer – Biomedicine & Pharmacotherapy, 2018-present
Poster Presentation Judge – Harold Hamm Diabetes Center Research Symposium, 2017
Ad hoc Reviewer – US Endocrinology, 2017-present
Ad hoc Reviewer – Growth Hormone & IGF Research, 2017-present
Rodent Advisory Committee – OUHSC IACUC, 2017-present
Ad hoc Reviewer – Adipocyte, 2017-present
Ad hoc Reviewer – Geroscience, 2016-present
Ad hoc Reviewer – Molecular and Cellular Endocrinology, 2016-present
Ad hoc Reviewer – Journal of Applied Physiology, 2016-present
Ad hoc Reviewer – Experimental Gerontology, 2016-present
Ad hoc Reviewer – Journal of Gerontology, Biological Sciences, 2016-present
Ad hoc Reviewer – Experimental Gerontology, 2016-present
Review Editor – Frontiers in Endocrinology, 2014-present
Ad hoc Reviewer – Aging Cell, 2014-present
Ad hoc Reviewer – PLOS One, 2013-present
Annual Russell Klein Memorial Nutrition Research Symposium Committee Member - Student Nutrition Society (GSNS), Ohio State University, 2009-2010
Professional Development Chair - Student Nutrition Society (GSNS), Ohio State University, 2009-2010
Competitive Student Grant Review Panel - Ohio Agricultural Research and Development Center (OARDC), Ohio State University, 2010
Faculty Search Committee Panel – Doctoral Student Representative - School of Physical Activity and Educational Services (PAES), Ohio State University, 2006