**Revised 3/1/2023**

Michael Wiggs, Ph.D.

Assistant Professor

Department of Health, Human Performance, and Recreation

**Degrees in Higher Education**

Bachelor of Science Applied Exercise Physiology Texas A&M University 2005

Doctor of Philosophy Exercise Physiology Texas A&M University 2011

**Professional Experience**

2006-2011 Graduate Research Assistant, Texas A&M University, College Station, TX
Department of Health and Kinesiology; College of Education and Human Development

2011-2015 Postdoctoral Associate, University of Florida, Gainesville, FL
Department of Applied Physiology and Kinesiology; College of Health and Human Performance

2015-2020 Assistant Professor, University of Texas at Tyler, Tyler, TX
Department of Health and Kinesiology; College of Nursing and Health Sciences

2020-Present Assistant Professor, Baylor University, Waco, TX
Department of Health, Human Performance, and Recreation; Robbins College of Health and Human Sciences

**Graduate and Undergraduate Teaching**

*Courses Taught - Graduate*

Training Methods - University of Texas at Tyler. KINE5317. Fall 2015, 2016, 2017, 2018.

Biochemistry in Exercise Science – Baylor University, HP 5340. Fall 2020, Fall 2021, Fall 2022

*Courses Taught - Undergraduate*

Physiology of Exercise – University of Texas at Tyler. KINE3311. Fall 2016, Spring 2017, Summer 2017,2018, Spring 2018, 2019, 2020

Exercise Physiology Laboratory - University of Texas at Tyler. KINE3112 Fall 2015, Fall, Spring Summer 2016, 2017, 2018, 2019, 2020

Principles of Training – Endurance - University of Texas at Tyler. KINE4304. Spring 2019, 2020

Research Methods and Design in Exercise Science – Baylor University. HP 3330. Spring 2021, Fall 2021, Spring 2022, Fall 2022, Spring 2023

Fundamentals of Exercise Biochemistry – Baylor University. HP 3320. Spring 2021. Spring 2022, Spring 2023

**Mentoring**

*Graduate Theses and Dissertations*

Megan Rosa-Caldwell – PhD Committee Member
Project Title: Mitochondrial Contributions to Disuse Atrophy: Let’s Talk about Sex

Completed Spring 2020

Emma Fletcher – PhD Committee Member

Project Title: Obesity-induced alterations to the immunoproteasome: a potential link to impaired proteostasis in skeletal muscle
Completed Summer 2020

Seong Lim – PhD Committee Member
Project Title: Sex Differences in Cancer Cachexia and a Novel Mitochondrial Target for Cancer-Induced Muscle Wasting
Completed May 2022

Anna Beaudry – PhD Committee Member

Project Title: The mechanistic underpinnings of cancer-induce cachexia

Completion – ETA Spring 2022

Jarrett Walbolt - PhD Committee Member

Project Title: Cardiovascular Disease Risk and Covid-19 Related PTSD in Healthcare Workers: The Effects of Moderate-Intensity Exercise and Curcumin Supplementation

Completion – ETA Spring 2022

Marc Magana – PhD Committee Chair

TBD

Rebecca Rodriguez – Master’s Committee Chair

TBD

*Baylor Comprehensive Exam Committees*

 Anna Beaudry

Dylan Wilburn

Carl Bender

*Undergraduate*

Emmalea Shaw – Honors Research Project

Project Title: Mitochondrial dysfunction is correlated to muscle size in cancer cachexia

Completed Fall 2018

Jaishnav Reddy – TBD

*Undergraduate Internships/Research Projects in research*

Connor Benson – Spring 2016

Belinda Reyes – Spring 2018

Drake Davis – Spring 2018

Brennan Thompson – Summer 2019

Jaishnav Reddy – Fall 2021

Ricky Solis – Fall 2021

Aaliyah Iwamota – Fall 2021

**Research and Scholarship**

*Publications* (reverse chronological)

*Book Chapters*

1. Antioxidant supplementation athletes and active individuals – Powers SK, Wiggs MP, Morton AB. Nutritional supplementation in sports. Lustosa, Oliveira, Bento. 1st edition 2017

*Refereed Journal Publications*

1. Wiggs MP, Lee T, O’Reilly CI, Shimkus KL, Lima F, Macias BR, Shirazi-Fard Y, Greene ES, Hord JW, Braby LA, Carroll CC, Lawler JM, Bloomfield SA, Fluckey JD. Combined effects of Lunar gravity and heavy ion exposure on skeletal muscle structure. Accepted 2/19/2023 in Life Sciences in Space Research.
2. Delfinis LJ, Bellissimo CA, Gandhi S, DiBenedetto SN, Garibotti MC, Thuhan AK, Tsitkanou S, Rosa-Caldwell ME, Rahman FA, Cheng AJ, Wiggs MP, Schlattner U, Quadrilatero J, Greene NP, Perry CGR. Muscle weakness precedes atrophy during cancer cachexia and is linked to muscle-specific mitochondrial stress. JCI insight. 2022 Dec 22;7(24).
3. Wiggs MP, Beaudry AG, Law ML. Cardiac Remodeling in Cancer-Induced Cachexia: Functional, Structural, and Metabolic Contributors. Cells. 2022 Jan;11(12):1931.
4. Lim S, Deaver JW, Rosa-Caldwell ME, Haynie WS, Morena da Silva F, Cabrera AR, Schrems ER, Saling LW, Jansen LT, Dunlap KR, Wiggs MP, Washington TA, Greene NP. Development of metabolic and contractile alterations in development of cancer cachexia in female tumor-bearing mice. Journal of Applied Physiology. 2022 Jan 1;132(1):58-72.
5. Fletcher E, Wiggs MP, Greathouse KL, Morgan G, Gordon PM. Impaired proteostasis in obese skeletal muscle relates to altered immunoproteasome activity. Applied Physiology, Nutrition, and Metabolism. 2022:555-64.
6. Rosa‐Caldwell ME, Lim S, Haynie WS, Brown JL, Lee DE, Dunlap KR, Jansen LT, Washington TA, Wiggs MP, Greene NP. Mitochondrial aberrations during the progression of disuse atrophy differentially affect male and female mice. Journal of Cachexia, Sarcopenia and Muscle. 2021 Sep 29.
7. Lee DE, Brown JL, Rosa‐Caldwell ME, Perry RA, Brown LA, Haynie WS, Washington TA, Wiggs MP, Rajaram N, Greene NP. Cancer‐induced cardiac atrophy adversely affects myocardial redox state and mitochondrial oxidative characteristics. JCSM Rapid Communications. 2021 Jan;4(1):3-15.
8. Rosa‐Caldwell ME, Lim S, Haynie WA, Brown JL, Deaver JW, Morena Da Silva F, Jansen LT, Lee DE, Wiggs MP, Washington TA, Greene NP. Female mice may have exacerbated catabolic signalling response compared to male mice during development and progression of disuse atrophy. Journal of Cachexia, Sarcopenia and Muscle. 2021 Mar 5.
9. Hall SE, Ahn B, Smuder AJ, Morton AB, Hinkley JM, Wiggs MP, Sollanek KJ, Hyatt H, Powers SK. Comparative Efficacy of Angiotensin II Type 1 Receptor Blockers Against Ventilator‐Induced Diaphragm Dysfunction in Rats. Clinical and Translational Science. 2020 Nov 22.
10. ME Rosa-Caldwell, CA Benson, DE Lee, JL Brown, TA Washington, NP Greene, MP Wiggs. Mitochondrial Function and Protein Turnover in the Diaphragm are Altered in LLC Tumor Model of Cancer Cachexia. International journal of molecular sciences, 2020, 21(21), 7841. \* Corresponding Author
11. Smuder AJ, Roberts BM, Wiggs MP, Kwon OS, Yoo JK, Christou DD, Fuller DD, Szeto HH, Judge AR. Pharmacological targeting of mitochondrial function and reactive oxygen species production prevents colon 26 cancer-induced cardiorespiratory muscle weakness. Oncotarget. 2020 Sep 22;11(38):3502.
12. Rosa-Caldwell ME, Brown JL, Lee DE, Wiggs MP, Perry Jr RA, Haynie WS, Caldwell AR, Washington TA, Lo WJ, Greene NP. Hepatic alterations during the development and progression of cancer cachexia. Applied Physiology, Nutrition, and Metabolism. 2020;45(5):500-12.
13. Rosa-Caldwell ME, Brown JL, Perry Jr RA, Shimkus KL, Shirazi-Fard Y, Brown LA, Hogan HA, Fluckey JD, Washington TA, Wiggs MP, Greene NP. Regulation of Mitochondrial Quality Following Repeated Bouts of Hindlimb Unloading. Applied Physiology, Nutrition, and Metabolism. 2019 Jul 24. Epub Ahead of Print.
14. Smuder AJ, Morton AB, Hall SE, Wiggs MP, Ahn B, Wawrzyniak NR, Sollanek KJ, Min K, Kwon OS, Nelson WB, Powers SK. Effects of exercise preconditioning and HSP72 on diaphragm muscle function during mechanical ventilation. Journal of cachexia, sarcopenia and muscle. 2019 Apr 10.
15. Morton, AB, Smuder, AJ, Wiggs, MP, Hall, SE, Ahn, B, Hinkley, JM, Ichinoseki-Sekine, N, Huertas, AM, Ozdemir, M, Yoshihara, T and Wawrzyniak, NR, Powers SK. Increased SOD2 in the diaphragm contributes to exercise-induced protection against ventilator-induced diaphragm dysfunction. Redox biology, 20, pp.402-413. Jan 2019
16. Brown JL, Lee, DE, Rosa‐Caldwell ME, Brown LA, Perry RA, Haynie WS, Huseman K, Sataranatarajan K, Van Remmen H, Washington TA, Wiggs MP, Greene NP. Protein imbalance in the development of skeletal muscle wasting in tumour‐bearing mice. Journal of cachexia, sarcopenia and muscle, 9(5), pp.987-1002. Oct 2018 \* Corresponding Author
17. Blackwell TA, Cervenka I, Khatri B, Brown JL, Rosa-Caldwell ME, Lee DE, Perry RA, Brown LA, Haynie WS., Wiggs MP and Bottje, W.G., Washington TA, Kong Byungwhi, Ruas JL, Greene NP. A Transcriptomic Analysis of the Development of Skeletal Muscle Atrophy in Cancer-Cachexia in Tumor-Bearing Mice. Physiological genomics. Oct 2018.
18. Shimkus KL, Shirazi-Fard Y, Wiggs MP, Ullah ST, Pohlenz C, Gatlin DM, Carroll CC, Hogan HA, Fluckey JD. Responses of skeletal muscle size and anabolism are reproducible with multiple periods of unloading/reloading. J Appl Physiol (1985). Aug 2018
19. Brown JL, Rosa‐Caldwell ME, Lee DE, Blackwell TA, Brown LA, Perry RA, Haynie WS, Hardee JP, Carson JA, Wiggs MP, Washington TA, Greene NP. Mitochondrial degeneration precedes the development of muscle atrophy in progression of cancer cachexia in tumour‐bearing mice. Journal of cachexia, sarcopenia and muscle. 2017 Dec 1;8(6):926-38.
20. Lee DE, Brown JL, Rosa-Caldwell ME, Blackwell TA, Perry Jr RA, Brown LA, Khatri B, Seo D, Bottje WG, Washington TA, Wiggs MP, Kong BW, Greene NP. Cancer cachexia-induced muscle atrophy: evidence for alterations in microRNAs important for muscle size. Physiological genomics. 2017 Mar 24;49(5):253-60.
21. Sollanek KJ, Burniston JG, Kavazis AN, Morton AB, Wiggs MP, Ahn B, Smuder AJ, Powers SK. Global Proteome Changes in the Rat Diaphragm Induced by Endurance Exercise Training. PloS one. 2017 Jan 30;12(1):e0171007.
22. Talbert EE, Smuder AJ, Kwon OS, Sollanek K J, Wiggs M P., Powers SK. Blockage of the Ryanodine Receptor via Azumolene Does Not Prevent Mechanical Ventilation-Induced Diaphragm Atrophy. PloS one, 11(2), e0148161.
23. Hudson MB, Smuder AJ, Nelson WB, Wiggs MP, Shimkus KL, Fluckey JD, Szeto HH, Powers SK.Partial Support Ventilation and Mitochondrial-Targeted Antioxidants Protect against Ventilator-Induced Decreases in Diaphragm Muscle Protein Synthesis. PLoS One. 2015 Sep 11;10(9):e0137693.
24. Kwon OS, Smuder AJ, Wiggs MP, Hall SE, Sollanek KJ, Morton AB, Talbert EE, Toklu HZ, Tumer N, Powers SK. AT1 receptor blocker losartan protects against mechanical ventilation-induced diaphragmatic dysfunction. Toklu HZ, Tumer N, Powers SK.J Appl Physiol (1985). 2015 Nov 15;119(10):1033-41.
25. Wiggs MP. Can endurance exercise preconditioning prevent disuse muscle atrophy? Front Physiol. 2015 Mar 11;6:63.
26. Hudson MB, Smuder AJ, Nelson WB, Wiggs MP, Shimkus KL, Fluckey JD, Szeto HH, Powers SK. Partial support ventilation and mitochondrial-targeted antioxidants protect against ventilator-induced decreases in diaphragm muscle protein synthesis. PLoS One. 2015 Sep 11;10(9):e0137693.
27. Talbert EE, Smuder AJ, Kwon OS, Sollanek KJ, Wiggs MP, Powers SK. Blockage of the ryanodine receptor via azumolene does not prevent mechanical ventilation-induced diaphragm atrophy. PloS one. 2016 Feb 5;11(2):e0148161.
28. Min K, Kwon OS, Smuder AJ, Wiggs MP, Sollanek KJ, Christou DD, Yoo JK, Hwang MH, Szeto HH, Kavazis AN, Powers SK. Increased mitochondrial emission of reactive oxygen species and calpain activation are required for doxorubicin‐induced cardiac and skeletal muscle myopathy. The Journal of physiology. 2015 Apr 15;593(8):2017-36.
29. Sollanek KJ, Smuder AJ, Wiggs MP, Morton AB, Koch LG, Britton SL, and Powers SK. Role of Intrinsic Aerobic Capacity and Ventilator-Induced Diaphragm Dysfunction. J Appl Physiol (1985). 2015 Jan 8.
30. Wiggs MP, Duarte AF, Powers SK. Exercise Can Protect against a Broken Heart. Curr Sports Med Rep. 2015 Jan;14(1):6-8
31. Boudreaux RD, Swift JM, Gasier HG, Wiggs MP, Hogan HA, Fluckey JD, Bloomfield SA. Increased resistance during rodent jump exercise does not enhance the cortical bone formation response. Med Sci Sports Exerc. 2014 May;46(5):982-9.
32. Smith IJ, Godinez GL, Singh BK, McCaughey KM, Alcantara RR, Gururaja T, Ho MS, Nguyen HN, Friera AM, White KA, McLaughlin JR, Hansen D, Romero JM, Baltgalvis KA, Claypool MD, Li W, Lang W, Yam GC, Gelman MS, Ding R, Yung SL, Creger DP, Chen Y, Singh R, Smuder AJ, Wiggs MP, Kwon OS, Sollanek KJ, Powers SK, Masuda ES, Taylor VC, Payan DG, Kinoshita T, Kinsella TM. Inhibition of Janus kinase signaling during controlled mechanical ventilation prevents ventilation-induced diaphragm dysfunction. FASEB J. 2014 Jul;28(7):2790-803.
33. Toklu HZ, Kwon OS, Sakarya Y, Powers SK, Llinas K, Kirichenko N, Sollanek KJ, Wiggs MP, Smuder AJ, Talbert EE, Scarpace PJ, Tümer N. The effects of enalapril and losartan on mechanical ventilation-induced sympathoadrenal activation and oxidative stress in rats. J Surg Res. 2014 May 15;188(2):510-6.
34. Bruells CS, Bergs I, Rossaint R, Du J, Cleilevens C, Goetzenich A, Weis J, Wiggs MP, Powers SK, Hein M. Recovery of diaphragm function following mechanical ventilation in a rodent model. PLoS One. 2014 Jan 27;9(1):e87460.
35. Powers SK, Solanek KJ, Wiggs MP, Demirel H, Smuder AJ. Exercise-induced improvements in myocardial antioxidant capacity: the antioxidant players and cardioprotection. Free Radic Res. 2014 Jan;48(1):43-51.
36. Powers SK, Wiggs MP, Sollanek KJ, Smuder AJ. Invited Review: Ventilator-induced diaphragm dysfunction: cause and effect. Am J Physiol Regul Integr Comp Physiol. 2013 Sep;305(5):R464-77.
37. Nilsson MI, Dobson JP, Greene NP, Wiggs MP, Shimkus KL, Wudeck EV, Davis AR, Laureano ML, Fluckey JD. Abnormal protein turnover and anabolic resistance to exercise in sarcopenic obesity. FASEB J. Oct;27(10):3905-16, 2013.
38. Bruells CS, Smuder AJ, Reiss LK, Hudson MB, Nelson WB, Wiggs MP, Sollanek KJ, Uhligs, Powers SK. Negative Pressure Ventilation and Positive Pressure Ventilation Promote Comparable Levels of Ventilator-induced Diaphragmatic Dysfunction in Rats. Anesthesiology. Sep;119(3):652-62, 2013
39. Powers SK, Wiggs MP, Duarte J, Zergeroglu AM, Demirel HA. Mitochondrial signaling contributes to disuse muscle atrophy. Am J Physiol Endocrinol Metab. Jul 1;303(1):E31-9, 2012
40. Gasier HG, Fluckey JD, Previs SF, Wiggs MP, and Riechman SE. Acute resistance exercise augments integrative myofibrillar protein synthesis. Metabolism. 61(2):153-6, 2012.
41. GasierHG, Riechman SE, Wiggs MP, Buentello A, Previs SF, and Fluckey JD. Cumulative responses of muscle protein synthesis are augmented with chronic resistance exercise training. Acta Physiologica (Oxf). 109(6):1600-7, 2011.
42. JM Swift, HG Gasier, SN Swift, MP Wiggs, HA Hogan, JD Fluckey and SA Bloomfield. Increased training loads do not magnify cancellous bone gains with rodent jump resistance exercise. J Appl Physiol. 109(6):1600-7, 2010.
43. Nilsson MI, Greene NP, Dobson, JP, Wiggs MP, Gasier HG, Macias BR, Shimkus KS, and Fluckey JD. Mitochondrial anabolic response is attenuated in insulin-resistance muscle following resistance exercise. Am J Physiol Endocrinol Metab 299: E466–E474, 2010.
44. Gasier HG, Riechman SE, Wiggs MP, Previs SF, and Fluckey JD. A comparison of 2H2O and phenylalanine flooding dose to investigate muscle protein synthesis with acute exercise in rats. Am J Physiol Endocrinol Metab. 297: E252, 2009.

*Peer-reviewed articles in submission*

1. Cabrera AR, Deaver JW, Lim S, Morena da Silva F, Schrems ER, Saling LW, Tsitkanou S, Rosa-Caldwell ME, Wiggs MP, Washington TA, Greene NP. Sex Differences in Development of Systemic Cancer Cachexia in a C26 Carcinoma Mouse Model. Submitted to Biology of Sex Differences

*Conference Abstracts (since first faculty appointment in 2015)*

1. Rodriguez RF, Beaudry AG, Law ML, Wiggs MP. Cardiac Tissue From Male and Female Mice with Cancer Cachexia Have Divergent Responses in Reactive Oxygen Species Production. Presented at Texas ACSM, February 2023.
2. Wiggs MP, Solis RD.; Deaver JW; Schrems ER; Cabrera AR, Lim S; Morena Da Silva F, Washington TA, Greene NP. (2022) "Males, but Not Females, Demonstrate Mitochondrial Dysfunction in the C26 Model of Cancer Cachexia. Presented at ACSM, June 2022
3. O’Reilly, MP Wiggs, HA Hogan, SA Bloomfield1, JD Fluckey. Combined effects of lunar gravity and heavy ion exposure on skeletal muscle protein synthesis rates in soleus and plantaris muscles. C. Presented at Integrative Physiology of Exercise Conference – 2020.
4. S Lim, ME Rosa-Caldwell, WS Haynie, LT Jansen, KR Dunlap, F Morena da Silva, JW Deaver, MP Wiggs, TA Washington, NP Greene. Alterations in mitochondrial turnover during the development of cancer cachexia in tumor-bearing female mice. Presented at Society on Sarcopenia, Cachexia, and Wasting Disorders, Dec 2020
5. Alterations in Extracellular Matrix Remodeling During Early Stages of Cancer Cachexia in Tumor-bearing Female Mice. Da Silva FM, S Lim, ME Rosa-Caldwell, WS Haynie, LT Jansen, KR Dunlap, F Morena da Silva, JW Deaver, MP Wiggs, TA Washington, NP Greene. Presented at Society on Sarcopenia, Cachexia, and Wasting Disorders, Dec 2020
6. Combined Effects of Lunar Gravity and Heavy Ion Exposure on Rates of Skeletal Muscle Protein Synthesis in Soleus and Plantaris Muscles. Colleen OReilly, Michael Wiggs, Harry Hogan, Susan Bloomfield, James Fluckey. Presented at Integrative Physiology of Exercise 2020
7. Influence of GATOR1 Sub Complex NPRL2 on Anabolic Signaling During Insulin Resistance in Rats. Colleen O’Reilly, Mats I Nilsson, Nicholas P Greene, Justin P Dobson, Michael P Wiggs, Heath G Gasier, James D. Fluckey. Experimental Biology 2019
8. Sex differences in anabolic regulators during development of atrophic pathology in hindlimb unloading-induced disuse. Lisa T. Jansen, Megan E. Rosa-Caldwell, Wesley S. Haynie, Seongkyun Lim, Kirsten R. Dunlap, Jacob L. Brown, David E. Lee, Richard A. Perry Michael P. Wiggs, Tyrone A. Washington, Nicholas P. Greene. ACSM 2019
9. Megan E. Rosa-Caldwell, Kirsten R. Dunlap, Wesley S. Hayni2, Seongkyun Lim, Lisa T. Jansen, Jacob L. Brown, David E. Lee, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene. Mitochondrial aberrations during the progression of disuse atrophy differentially affect male and female mice. Advances in Skeletal Muscle Biology in Health and Disease at University of Florida 2019
10. Wesley S. Haynie1, Megan E. Rosa-Caldwell1, Seongkyun Lim1, Katarina A. Bejarano1, Lisa T. Jansen1,Kirsten R. Dunlap1, Jarrod A. Call2, Michael P. Wiggs3, Nicholas P. Greene1, Tyrone A. Washington1 Force production during the development of cancer cachexia in female mice. Advances in Skeletal Muscle Biology in Health and Disease at University of Florida 2019
11. Seongkyun Lim, Megan E. Rosa-Caldwell, Wesley S. Haynie, Lisa T. Jansen, Kirsten R. Dunlap, Katarina Bejarano, Jacob L. Brown, David E. Lee, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene. Atrophy-related genes are differentially expressed during progression of disuse-induced atrophy in male and female mice. Advances in Skeletal Muscle Biology in Health and Disease at University of Florida. 2019
12. Early mitochondrial degeneration in the development of disuse-induced muscle atrophy. Nicholas P. Greene, Jacob L. Brown, Megan E. Rosa-Caldwell, David E. Lee, Wesley A. Haynie, Tyrone A. Washington, Michael P. Wiggs – Experimental Biology 2018
13. Protein Synthesis throughout the Progression of Cancer Cachexia in Tumor-Bearing Mice

Jacob L. Brown, David E. Lee, Megan E. Rosa-Caldwell Richard A. Perry, Wesley A. Haynie, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene Experimental Biology 2018

1. Alterations in Hepatic Protein Synthetic Signaling During the Progression of Cancer Cachexia.

Megan E. Rosa-Caldwell, Jacob L. Brown, David E. Lee, Richard A. Perry, Wesley A. Haynie, Aaron R. Caldwell, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene Experimental Biology 2018

1. Changes in liver fibrosis during the progression of cancer cachexia in mice. Kyle W. Turner , Megan E. Rosa-Caldwell , Jacob L. Brown , David E. Lee , Richard A. Perry , Wesley A. Haynie, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene. Central State ACSM Conference
2. Cancer cachexia: metabolic changes in carbohydrate metabolism of the liver. Sarah M. Ramey, Megan E. Rosa-Caldwell, Jacob L. Brown, David E. Lee, Richard A. Perry, Wesley A. Haynie, Aaron R. Caldwell, Tyrone A. Washington, Michael P. Wiggs, Nicholas P. Greene
3. Timecourse of alterations in myofiber CSA and oxidative phenotype in progression of cancer-cachexia. Nicholas P. Greene1, Jacob L. Brown1, Megan E. Rosa1, David E. Lee1, Thomas A. Blackwell1, Haley N. McCarver1, Richard A. Perry1 Jr., Lemuel A. Brown1, Wesley S. Haynie1, Michael P. Wiggs2, Tyrone A. Washington1. – ACMS 2017
4. Partial or complete unloading of skeletal muscle leads to specific alterations of anabolic signal transduction. Collen L O’Reilly, Michael Wiggs, J William Deaver, Susan Bloomfield and James D Fluckey - 2017
5. Myogenic And Atrophic Signaling In The Progression Of Cancer-cachexia. Thomas A. Blackwell1, Jacob L. Brown1, David E. Lee1, Megan E. Rosa-Caldwell1, Richard A. Perry Jr1, Lemuel A. Brown1, Wesley S. Haynie1, Michael P. Wiggs2, Tyrone A. Washington1, Nicholas P. Greene1 – ACSM 2017
6. Cancer-cachexia Upregulates Autophagy Machinery. Jacob L. Brown, Megan E. Rosa-Caldwell1, David E. Lee1, Thomas A. Blackwell1, Richard A. Perry1, Lemuel A. Brown1, Wesley S. Haynie1, Michael P. Wiggs2, Tyrone A. Washington1, Nicholas P. Greene1 – ACSM 2017
7. Oral Administration of BGP-15 Significantly Increases HSP72 Expression and Attenuates Ventilator Induced Diaphragm Dysfunction. A.B. Morton, A.J. Smuder, S.E. Hall, M.P. Wiggs, S.K. Powers. Experimental Biology 2017
8. microRNA Expression Profile of Cancer Cachexia-Induced Muscle Atrophy David E. Lee, Jacob L. Brown, Megan E. Rosa-Caldwell, Thomas A. Blackwell, Richard A. Perry, Jr., Lemuel A. Brown, Bhuwan Khatri, Dongwon Seo, Walter G. Bottje, Tyrone A. Washington, Michael P. Wiggs, Byung-Whi Kong & Nicholas P. Greene – Muscle Biology Conference 2017
9. Mitochondrial Degeneration Precedes Muscle Atrophy in Cancer-Cachexia. Jacob L. Brown, Megan E. Rosa, David E. Lee, Thomas A. Blackwell, Richard A. Perry Jr., Lemuel A. Brown2, Wesley S. Haynie, Michael P. Wiggs, Tyrone A. Washington, Nicholas P. Greene – Muscle Biology Conference 2017
10. Progression of Cancer-Cachexia – A Transcriptomics View. Nicholas P. Greene, Thomas A. Blackwell, Bhuwan Khatri, Jacob L. Brown, David E. Lee, Megan E. Rosa, Richard A. Perry, Jr., Lemuel A. Brown, Michael P. Wiggs, Tyrone A. Washington, Byung-Whi Kong – Muscle Biology Conference 2017
11. Mitochondrial dysfunction promotes cancer-induced cardiac and respiratory muscle weakness. Michael P. Wiggs, Brandon M. Roberts, Oh-Sung Kwon, Jeung-Ki Yoo, Demetra D. Christou, Andrew R. Judge, David D. Fuller, Hazel H. Szeto and Ashley J. Smuder - Poster Presentation at 10th international SCWD conference on cachexia, sarcopenia and muscle wasting
12. Cancer cachexia induced muscle atrophy: evidence for alterationsin microRNAs important for muscle size. David E. Lee, Jacob L. Brown, Megan E. Rosa-Caldwell, Richard A. Perry, Jr., Lemuel A. Brown, Bhuwan Khatri, Dongwon Seo, Tyrone A. Washington, Michael P. Wiggs, Byung-Whi Kong & Nicholas P. Greene. – Central States ACSM 2016
13. Mitochondrial Dysfunction in Diaphragm Muscle Precedes the Cachectic Phenotype in LLC Tumor-Bearing Mice. Conner A Benson, David E Lee, Jacob L Brown, Megan E Rosa-Caldwell, Tyrone A Washington, Nicholas P Green, Michael P Wiggs. - Texas ACSM 2017
14. Loss in oxidative phenotype in lewis lung carcinoma-induced cancer cachexia. Haley N. McCarver, Jacob L. Brown, Megan E. Rosa, David E. Lee, Richard A. Perry Jr., Lemuel A. Brown, Michael P. Wiggs, Tyrone A. Washington, Nicholas P. Greene. – Central States ACSM 2016.
15. Mitochondrial dysfunction is evident in Lewis Lung Carcinoma-induced muscle wasting

Benson, C, Lee DE, Brown JL, Rose ME, Washington TA, Greene NP, Wiggs MP. Submitted for presentation. Texas American College of Sport Medicine Annual Meeting, 2016.

1. Exercise-induced protection against ventilator-induced diaphragm atrophy is dependent upon increased diaphragmatic levels of manganese superoxide dismutase. Morton AB, Smuder AJ, Wiggs MP, Hall SE, Wawrzyniak NR, Powers SK. Experimental Biology 2016
2. HSP72 is required for exercise-induced protection against ventilator-induced diaphragm dysfunction. Smuder AJ, Morton AB, Hall SE, Ahn BS, Wiggs MP, Wawrzyniak NR, Powers SK. Experimental Biology 2016
3. Angiotensin II Type 1 Receptor Contributes to Ventilator-Induced Diaphragm Dysfunction Hall, Stephanie E; Smuder, Ashley J; Wiggs, Michael P; Morton, Aaron B; Sollanek, Kurt J; Powers, Scott K. Advances in Skeletal Muscle Biology in Health and Disease at University of Florida. 2016
4. Increased HSP72 Expression is Required for Exercise-Induced Protection Against Ventilator-Induced Mitochondrial Dysfunction in the Diaphragm Smuder, Ashley J; Morton, Aaron B; Hall, Stephanie E; Ahn, Bumsoo; Wiggs, Michael P; Wawrzyniak, Nicholas R; Powers, Scott K; Advances in Skeletal Muscle Biology in Health and Disease at University of Florida. 2016

*Non-refereed Publications*

1. Powers SK, Sollanek KJ, Wiggs MP. Endurance Exercise and Antioxidant Supplementation: Sense or Non-Sense? Part 2. Gatorade Sports Science Exchange (2014) Vol. 27, No. 138, 1-4

*Professional Presentations* (International, National, Regional, State)

*Conferences*

1. Wiggs MP, Sollanek KJ, Hall SE, Koch LG, Britton SL, Powers SK. Intrinsic high aerobic capacity is not associated with a skeletal muscle mitochondrial phenotype that resists apoptotic stimuli. International. Submitted for presentation at Integrative Physiology of Exercise, 2014.
2. Wiggs MP, Smuder AJ, Sollanek KJ, Shinkus KL, Fluckey JD, Powers SK. Inhibition of FoxO signaling prevents mechanical ventilation-induced reduction in protein synthesis. International. Submitted for presentation at ACSM Annual Meeting, 2014.
3. Wiggs, MP, Hudson MB, Smuder AJ, Nelson WB, Shimkus KL, Fluckey JD, Powers SK. Impact of prolonged mechanical ventilation on diaphragmatic protein synthesis. International. FASEB J April 9, 2013 27:lb784
4. Wiggs MP, Swift JM, Lima F, Greene ES, Bloomfield SA, and Fluckey JD. The effect of simulated 1/6th and 1/3rd gravity on gastrocnemius muscle mass and fractional protein synthesis rates in mice. International.The FASEB Journal 24: 616.616, 2010.
5. Wiggs MP, Nilsson MI, Latham GS, Walters S, Flores K, Allender K, and Fluckey JD. Expression of atrogin-1 is not increased in soleus or plantaris after 5 days of hindlimb unloading in rats. Appl. Physiol. Nutr. Metab. 34(6): 1117–1168 (2009).
6. Wiggs MP, Gasier HG, Previs SF and Fluckey JD. Assessment of cumulative FSR over a 24h period with hindlimb unloading and intermittent reloading in rats. International. The Physiologist 51:6 program number 35.5, 2008
7. Wiggs MP, Jones KP, William Rayburn, Thomas Davis, Dohm GL, and Fluckey, JD. Insulin signaling in sedentary human skeletal muscle via PI3K is necessary for protein synthesis. International. FASEB J 2007.

*Invited Oral Presentations*

1. Texas A&M University – Health and Kinesiology Graduate Seminar – October 2022- MYOpic view of cancer
2. Robbins College Conversation Starter; Presenter and Panelist on the topic of improving outcomes for cancer patients. October 2021
3. Baylor University – Health, Human Performance and Recreation Department Seminar. September 2021
4. University of Texas at Arlington – Kinesiology Seminar – October 2019

Title: The role of mitochondrial dysfunction in cancer-induced muscle wasting.

1. UT Tyler Department of Biology – September 2018

Title: Mitochondrial function in skeletal muscle in a model of cancer-induced muscle wasting

1. UT Tyler The Center for Excellence in Teaching & Learning - November 2017

Title: Ditching the discussion board for Flipgrid.

1. UT Health North East Department Seminar. – September 2017

Title: A myopic view of cancer

1. Texas ACSM Annual Meeting - Invited Lecture - February 2017

Title: A role for mitochondria in the progression and treatment of muscle wasting associated with cancer

1. University of Arkansas – December 2016

Title: Role of mitochondria in the regulation of skeletal muscle mass

1. UT Tyler CNHS Lunch and Learn –– September 2016

Title: Mitochondria in Health and Disease

1. University of Florida Dept. of Applied Physiology and Kinesiology Seminar. April 2013

Title: The importance of protein synthesis in disuse muscle atrophy

1. Muscle Biology/Physiology Seminar - University of Florida Dept. of Physical Therapy, September 2011

Title: Muscle Protein Synthesis? A loaded Question

*Grants and Contracts* (P.I., Director, Assoc., Co-Investigator, Consultant, Trainer, other)

*External Support*

*Received (Funded)*

1. Development of Targeted Approaches in Prevention of Cancer-Cachexia.

NIH RO1 (NP Greene, PI)

Role: PI of Subaward to Baylor University

Funding period – July 01, 2020 – June 30, 2025 – Total costs $337,895 per yr

Costs: Total costs $337,895, Total costs to Baylor University - $155,897

Project Number: 1R01AR075794-01A1

Status: In progress

1. Undergraduate ACSM Student Research Development Award

Texas ACSM
Role: Mentoring PI (Student James Gray)
Funding period – March 1, 2022, December 31st, 2022

Costs: $1000

Status: In progress

1. Mitochondrial Degeneration – The Root of Skeletal Muscle Atrophy

NIH R15

Role: Co-I (NP Greene, PI)

Submitted June 25, 2015

Funded July 1, 2017 – June 30, 2021

Costs: Total costs $412,668

Project Number: 1R15AR069913-01A1

Status: Complete

1. Mechanisms of muscle wasting during spaceflight

NASA Life Sciences Data Archive (LSDA); Self-Forming Biospecimen Sharing Program (BSP) Tissue Request

Role – Co-PI

 Costs: No direct costs

 Awarded skeletal muscle and bone tissue from mice flow on space shuttle flight STS-108

 Status: In progress

*In Review*

1. Examining the contribution of REDD1 to chemotherapy-induced cachexia and anabolic resistance

Role: Co-PI (25%) with Cory Dungan

Agency – NIH R15

Amount: Total Costs $404,450

Submitted October 2022.

1. Using senolytics to augment exercise-induced muscle hypertrophy during cachexia

Role: Co-PI (50%) with Cory Dungan

Agency – NIH R15

Amount: Total Costs $377,959

Submitted October 2022.

*Submitted*

1. Senolytics to augment the hypertrophic response to rehabilitative exercise following chemotherapy treatment.

Alliance for Regenerative Rehabilitation Research and Training Pilot Grant – 2 years $75,000.
Role: Co-PI
Submitted June 2022
Status: Letter of Intent accepted, Not Funded

1. Evaluating the effects of obesity on cancer cachexia
HESI-Pardee THRIVE Grant Program. – 2 years - $50,000 direct costs
Role: PI
Submitted: Feb 2021
Status: Letter of Intent not accepted
2. Administration of BGP-15 to prevent cancer-induced cardiac atrophy
HESI-Pardee THRIVE Grant Program. – 2 years - $50,000 direct costs
Role: PI
Submitted: December 2020
Status: Letter of Intent accepted, Not Funded
3. Administration of BGP-15 to prevent cancer-induced cardiac atrophy
HESI-Pardee THRIVE Grant Program. – 2 years - $50,000 direct costs
Role: PI
Submitted: December 2020
Status: Letter of Intent accepted, Not Funded
4. Fluorescent technology in the development of treatments for cancer cachexia
Ocean Insight Grant Program – Equipment Grant – 1 year $20,000 direct costs
Role: PI
Submitted December 2020
Status: Selected as Finalist, Not Funded
5. Development of muscle targeting virus-like particle for treatment of cancer cachexia
HESI-Pardee THRIVE Grant Program. – 2 years - $50,000 direct costs
Role: PI
Submitted July 2019
Status: Not Funded
6. Skeletal Muscle Mitochondrial Degeneration – the Onset of Cancer Cachexia
NIH-R15
Role: Co-I (NP Greene PI)
Submitted 10/26/2016
Status: Not Funded
7. Skeletal Muscle Mitochondrial Degeneration – the Onset of Cancer Cachexia
NIH-R03
Role: Co-I (NP Greene PI)
Submitted 10/26/2015
Status: Not Funded
8. Skeletal muscle miRNAs are necessary and sufficient in the development of Type 2 Diabetes Mellitus
NIH R15
Role: Co-I (NP Greene PI)
Submitted June 25, 2015
Status: Not Funded
9. Role mitochondrial degeneration in development of cancer cachexia
American Institute for Cancer Research
Role: Co-I (NP Greene PI)
Submitted May 11, 2015
Status: Not Funded

*Internal Support*

*Received (Funded)*

1. Baylor Postdoctoral hiring Program

Role:PI
Status –Submitted September 2021; Funded October 2021. Position funded for Fall 2022-2025

1. The effect of BGP-15 on mitochondrial dynamics in cardiac cachexia.
Baylor University Summer Sabbatical Program
Role: PI

Funded – Summer 2021

Submitted – 9/21/2020

Status – To be completed Summer 2021

1. Modification of virus-like particles to target skeletal muscle.

UT Tyler Presidential Interdisciplinary Grants Program

Submitted March 18th, 2018

Funded September 1,2019 -July 31, 2020.

Direct Costs: $20,000.

Role: PI

Status: Completed

1. The Role of muscle protein synthesis in cancer-induced cardiac atrophy

University of Texas at Tyler Office of Sponsored Research Faculty Research Grant

Role: PI

Submitted April 1, 2016

Funded June1, 2016

Direct Costs- $8,820

Status - Completed

1. Mitochondrial protein synthesis in cardiac atrophy

Integrative Institute of Healthcare - UT Tyler

Role: PI

August 10/2016

Direct Costs - $4,763

Status: Completed

*Submitted*

1. Role of mitochondrial degeneration in metabolic flexibility of skeletal muscle.
College of Nursing and Health Sciences Intramural Grant
Role: PI
Submitted November 18, 2015
Status: Not Funded

**Service**

*Professional*

*Affiliations*

American College of Sports Medicine, 2007-present

American Physiological Society, 2007 - present

Texas Regional Chapter of the American College of Sports Medicine, 2007-2011; 2015-present

Southeast Regional Chapter of the American College of Sports Medicine, 2012

Cancer Cachexia Society – 2020-present

*Service*

*Texas ACSM Student Bowl Referee – 2016, 2017, 2018, 2019*

*UT Tyler Honors Program Lyceum – Judge 2017*

*Texas ACSM - Student Research Development Grant Reviewer 2018*

*Texas ACSM – Poster Judge 2019, 2022*

*Integrative Physiology of Exercise Conference Quiz Bowl – Contributor of Questions for the competition – Dec 2020*

 *Central Texas Science and Engineering Fair Judge - 2022*

*Journal Referee*

The Journal of Cachexia, Sarcopenia and Muscle

Medicine & Science in Sports & Exercise

American Journal of Physiology - Regulatory, Integrative and Comparative Physiology

Journal of Gerontology

Journal of Physiology

Antioxidants

Nutrients

Sports

*University (University, School, Department)*

*Classroom Technology Task Force Member (UT Tyler – University)) 2015*

*Health Expo Organizing Committee Member (UT Tyler – School) 2016; Chair 2017, Member 2018, 2019*

*Dept. Curriculum Committee (UT Tyler - Department) Member 2017, Chair 2018*

*Hiring Committee (UT Tyler – School) – Student Advisor I – Member 2016*

*Hiring Committee (UT Tyler – School) – Student Advisor II – Member 2016*

*Hiring Committee (UT Tyler – School)) – Student Advisor I – Chair 2019*

*CNHS Teaching Award committee (UT Tyler – School) – Member 2018, 20119, Chair 2020.*

*Community*

*East Texas Research Conference – Planning Committee 2019-2020*

*FitSteps for Life – Research Board Member – 2019-2021*

*Religious Congregation*

Renew Waco

**Academic and Professional Honors and Awards**

1. NASA/Texas Space Grant Consortium Fellowship - 2008 – 2010
2. American Physiological Society - Environmental & Exercise Physiology (EEP) Space Biomedical Research Institute's Pre-Doctoral Gravitational Physiology Award. 2010.
3. University of Florida Post Doc Symposia Oral Presentation – 2nd place. 2013
Title: Impact of mode mechanical ventilation mode on diaphragm protein synthesis.
4. UT Tyler Research Fellows Program – 2019-2020 –Year long training on building and writing a successful research grant
5. NASA Spaceflight Technology, Applications, and Research (STAR); 1 of 25 members selected to receive training that will help facilitate their entry to space biology and preparation for conducting spaceflight experiments using NASA and commercial platforms.
6. Baylor University – Pure Gold Research Award – Fall 2022.