

**Anna E. Thalacker-Mercer, PhD**  
**Assistant Professor**  
**Division of Nutritional Sciences**  
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## **EDUCATION**

- 2007-2010 Postdoctoral Training, University of Alabama at Birmingham, Birmingham, AL  
Primary Mentor: Marcas M Bamman, Ph.D.
- 2002-2007 Doctor of Philosophy, Interdepartmental Nutrition Program, Department of Foods and Nutrition, Purdue University, West Lafayette, IN  
Primary Mentor: Wayne W. Campbell, Ph.D.
- 1997-2000 Bachelor of Science, Biological Sciences, Franklin College of Arts and Science, University of Georgia, Athens, GA
- 1996-1997 Undergraduate, Lenoir-Rhyne College, Hickory, NC

## **ADDITIONAL TRAINING**

- 2007-2010 Postdoctoral Fellow, Center for Aging, Translational Research Program, UAB
- 2007-2010 Postdoctoral Trainee, NIH funded T32 Postdoctoral Obesity Training Program, Nutrition Obesity Research Center, UAB

## **APPOINTMENTS**

- 2012- Assistant Professor, Division of Nutritional Sciences, Cornell University
- 2010-2012 Assistant Professor (*non-tenure track*), Department of Physiology and Biophysics, UAB
- 2007-2010 Postdoctoral Trainee, Department of Physiology and Biophysics, UAB
- 2007-2010 Postdoctoral Trainee, Department of Nutrition Sciences, UAB
- 2002-2007 Graduate Research Assistant, Department of Foods and Nutrition, Purdue University

## **HONORS & AWARDS**

- 2017 College of Human Ecology Grant Development Program
- 2017 Research Award, 12th International Conference on Pathways, Networks, and Systems Medicine, Crete Greece
- 2017 Kappa Omicron Nu Honor Society, Advising Award, College of Human Ecology, Cornell University
- 2016 Schwartz Research Fund, Travel Award
- 2014 Peter J. Reeds Young Investigator Award, American Society for Nutrition
- 2011 Named New Investigator Award, Nutrition Obesity Research Center, UAB
- 2011 Geriatric Education Center's Faculty Scholars Program, UAB
- 2011 Nutrition Leadership Institute award, Dannon Institute
- 2009 UAB Office of Postdoctoral Education Research Day, 3<sup>rd</sup> Place Award for research
- 2008 Career Enhancement Award, Office of Postdoctoral Education, UAB
- 2008-2012 National Institute of Health, Loan Repayment Program Award and renewal

- 2008-2012 U.S. Dairy Export Council, Award of whey protein supplement to extend research of ongoing clinical trial, UAB
- 2008 American Society for Nutrition, Energy and Macronutrient Metabolism RIS abstract competition award recipient, Experimental Biology, San Diego, CA
- 2007-2010 Center for Aging, Translational Research Program Fellowship, UAB
- 2007-2010 National Institute of Health T32 Postdoctoral Fellowship, UAB
- 2006-2007 Purdue Research Foundation Research Assistantship, Purdue University, West Lafayette, IN
- 2000 Lois Flowers Young-Blood Award, for leadership, University of Georgia, Athens, GA
- 1997-2000 HOPE Scholarship, University of Georgia, Athens, GA

## RESEARCH PROGRAM

The overarching objective of my lab is to identify and understand nutrient and metabolic determinants of skeletal muscle (SkM) regeneration. This objective is achieved by 1) examining nutrient requirements and the metabolic signature of muscle progenitor cell (MPC) expansion; 2) characterizing novel metabolic and molecular regulators of MPC expansion, differentiation, and myotube formation; and 3) developing therapies to improve SkM health. To address these objectives my research program utilizes translational models (human to primary skeletal muscle cell cultures) coupled with state-of-the-art imaging and -omics techniques and technologies.

## PUBLICATIONS

Peer-reviewed (\*corresponding author)

1. Gheller B, Blum J, Merritt E, Cummings B, and \***Thalacker-Mercer A**. *Peptide YY (PYY) is expressed in human skeletal muscle tissue and expanding human muscle progenitor cells*. (In Review)
2. Riddle E, Bender E and \***Thalacker-Mercer A**. *Expansion capacity of human myogenic progenitor cells differs by age, sex, and metabolic fuel preference*. *Am J Physiol Cell Physiol*. 18 OCT 2018
3. Riddle E, Bender E and \***Thalacker-Mercer A**. *Transcript profile distinguishes variability in human myogenic progenitor cell expansion capacity*. *Physiol Genomics*. 2018 Oct 1;50(10):817-827
4. Roberts B, Lavin K, Many G, **Thalacker-Mercer A**, Merritt E, Bickel CS, Mayhew D, Tuggle SC, Cross J, Kosek D, Petrella J, Brow C, Hunter G, Windham S, Allman R, and Bamman M. *Human Neuromuscular Aging: Sex Differences Revealed at the Myocellular Level*. *Exp Gerontol*. 2018 Jun;106:116-124
5. Stec M, **Thalacker-Mercer A**, Mayhew D, Kelly N, Tuggle S, Merritt E, Brown C, Vaughn K, Windham S, Dell'Italia L, and Bamman M. *Randomized, Four-Arm, Dose-Response Clinical Trial to Optimize Resistance Exercise Training for Older Adults with Age-Related Muscle Atrophy*. *Exp Gerontol*. 2017 Dec 1;99:98-109.
6. Taesuwan S, Cho C, Malysheva O, Bender E, Yan J, **Thalacker-Mercer A**, Caudill M. *The metabolic fate of isotopically labeled trimethylamine-N-oxide (TMAO) in humans*. *J Nutr Biochem*. 2017 Jul;45:77-82.
7. Mentch SJ, Mehrmohamadi M, Huang L, Liu X, Gupta D, Mattocks D, Gómez Padilla P, Ables G, Bamman MM, **Thalacker-Mercer AE**, Nichenametla SN, Locasale JW. *Histone Methylation Dynamics and Gene Regulation Occur through the Sensing of One-Carbon Metabolism*. *Cell Metab*. 2015 Sep 22. pii: S1550-4131(15)00457-X.

8. **Thalacker-Mercer A**, Ingram K, Guo F, Newgard C, and Garvey W. *Amino Acids and Insulin Sensitivity in Humans: positive correlation between glycine and clamp measures of insulin sensitivity, and negative correlation with leucine/isoleucine, are differentially affected by BMI, RQ, and diabetes.* Diabetes. 2014 Feb;63(2):791-800. PMID: PMC3900549.
9. Day K, Waite L, **Thalacker-Mercer A**, West A, Bamman M, Brooks J, Myers R, and Absher D. *Differential DNA methylation with age is a result of both common and tissue-specific effects that are influenced by CpG landscape.* Genome Biol. 2013 Sep;14(9):R102. PMID: PMC4053985.
10. Merritt E, Stec M, **Thalacker-Mercer A**, Windham S, Cross J, Shelley D, Tuggle S, Kosek D, Kim J, and Bamman, M. *Heightened muscle inflammation susceptibility may impair regenerative capacity in aging humans.* J Appl Physiol (1985). 2013 Sep;115(6):937-48. PMID: PMC3764621
11. Merritt E, **Thalacker-Mercer A**, Cross J, Windham S, Thomas S, Bamman M. *Increased expression of atrogenes and TWEAK family members after severe burn injury in non-burned human skeletal muscle.* J Burn Care Res. 2013 Sep-Oct;34(5):e297-304. PMID: PMC3770758
12. **Thalacker-Mercer A**, Stec M, Cui X, Cross J, Windham S, and Bamman M. *Cluster analysis reveals differential transcript profiles associated with resistance training-induced human skeletal muscle hypertrophy.* Physiol Genomics. 2013 Jun 17;45(12):499-507. PMID: PMC3680779
13. Kwak HB, **Thalacker-Mercer AE**, Anderson EJ, Lin CT, Kane DA, Lee NS, Cortright RN, Bamman MM, and Neuffer PD. *Simvastatin impairs ADP-stimulated respiration and increases mitochondrial oxidative stress in primary human skeletal myotubes.* Free Radic Biol Med. 2011 Oct 25. PMID: PMC3313473
14. **Thalacker-Mercer AE**, Fleet JC, Craig BA, and Campbell WW. *The skeletal muscle transcript profile reflects accommodative responses to inadequate protein intake in younger and older males.* J Nutr Biochem. 2010 Nov;21(11):1076-82. PMID: PMC2891367
15. **Thalacker-Mercer AE**, Dell'Italia LJ, Cui X, Cross JM, and Bamman MM. *Differential genomic responses in old vs. young humans despite similar levels of modest muscle damage after resistance loading.* Physiological Genomics. Physiol Genomics; 2010 Feb 4;40(3):141-9. PMID:PMC2825766
16. **Thalacker-Mercer AE**, Petrella JK, Bamman MM. *Does habitual dietary intake influence myofiber hypertrophy in response to resistance training? A cluster analysis.* Appl Physiol Nutr Metab. 2009 Aug;34(4):632-9. PMID:PMC3188961
17. Stull AJ, Iglay HB, Apolzan JW, **Thalacker-Mercer AE**, and Campbell WW. *Liquid and solid meal replacement products differentially affect postprandial appetite and food intake in older humans.* J Am Diet Assoc. 2008 Jul;108(7):1226-30. PMID:PMC2556245
18. **Thalacker-Mercer AE**, Johnson CA, Yarasheski KE, Carnell NS, Campbell WW. *Nutrient ingestion, protein intake, and sex, but not age affect albumin synthesis rate in humans.* J Nutr 2007 July; 137 (7): 1734-40. PMID:PMC3885871
19. **Thalacker-Mercer AE**, Fleet JC, Craig BA, Carnell NS, Campbell WW. *Inadequate protein intake affects skeletal muscle transcript profiles in older humans.* Am J Clin Nutr 2007 May; 85(5):1344-52. PMID:PMC2447912

In Progress (\*corresponding author)

1. Riddle E, Bender E and **\*Thalacker-Mercer A**. *Inflammation induced changes in leucine uptake and metabolic gene expression and signaling in differentiated human skeletal myocytes.*

2. **\*Thalacker-Mercer A**, Ingram K, Guo F, Newgard C, and Garvey W. *Racial and ethnic differences driving the metabolome of diabetes*.
3. Gupta D, Blum J, Liu X, Gaynanova I, Roman H, Bender E, Bamman M, Locasale J, **\*Thalacker-Mercer A**. *Arginine and proline metabolism is associated with older adult skeletal muscle mass and altered by inflammation in primary human muscle cells*.
4. **Thalacker-Mercer A**, Day K, Cui X, Waite L, Absher D, and Bamman MM. *Age-related changes in the skeletal muscle DNA methylome*.

Chapters, Reviews, and Proceedings Articles (\*corresponding author)

1. **\*Thalacker-Mercer A** and Riddle R. *The role of dietary protein and amino acids in skeletal muscle health*. Advances in Food & Nutrition Research (Academic Press/Elsevier). (In progress).
2. **Thalacker-Mercer A**, Muller M, and Ellison, K. *Sex-related differences in protein metabolism that impact the post-exercise recovery in older adults*. (in progress).
3. Gheller BJ, Riddle ES, Lem MR, **\*Thalacker-Mercer A**. *Understanding age-related changes in skeletal muscle metabolism: differences between females and males*. Annu Rev Nutr. 2016 Jul 17;36:129-56.
4. Riddle E, Stipanuk M, and **\*Thalacker-Mercer A**. *Amino Acids in Healthy Aging Skeletal Muscle*. Front Biosci (Elite Ed). 2016 Jan 1;8:326-50.
5. **\*Thalacker-Mercer AE** and Drummond MJ. *Protein metabolism in inactive older adults*. New York Academy of Sciences. Ann N Y Acad Sci. 2014 Aug 12
6. Guoyao Wu, Jessica Fanzo, Dennis D. Miller, Prabhu Pingali, Mark Post, Jean L. Steiner, and **Anna E. Thalacker-Mercer**. *Production and supply of high-quality food protein for human consumption: sustainability, challenge and innovations*. NYAS Annals Meeting Reports. Ann N Y Acad Sci. 2014 Aug;1321(1):1-19
7. Krista Casazza, Lynae J. Hanks, **Anna Thalacker-Mercer**. Insulin-like growth factor system in different ethnic groups and relationship with growth and health. *The Handbook of Growth and Growth Monitoring in Health and Disease*.
8. **Thalacker-Mercer AE**, and Campbell WW. *Dietary protein intake affects albumin fractional synthesis rate equally in younger and older adults*. Nutr Rev. 2008 Feb;66(2):91-5
9. Campbell, WW, Carnell, NS, and **Thalacker, AE**. Protein Metabolism and Requirements. *Geriatric Nutrition; The Health Professional's Handbook*. 3<sup>rd</sup> Ed. 2006 p15-22

Web-based Peer-Reviewed Publications (\*corresponding author)

1. Gheller, B.J., Blum, J., Soueid-Baumgarten, S., Bender, E., Cosgrove, B.D., **\*Thalacker-Mercer, A**. Isolate, culture, characterize, and differentiate human muscle progenitor cells from the skeletal muscle biopsy procedure. *Under Review: Journal of Visualized Experiments*
2. **\*Thalacker-Mercer AE**. *Counterbalancing Functional Deficits from Acute Illness Hospitalization*. The Deep South CME Network, UAB Geriatric Education Center, UAB Division of CME. [WWW.ALABAMACME.UAB.EDU/GERIATRICS.ASPX](http://WWW.ALABAMACME.UAB.EDU/GERIATRICS.ASPX). MAY 2012.
3. Herrington HL, Lawrence JC, Ponder A, **Thalacker-Mercer AE**, Willis AS, McLinn J. *Weight Management in Older Adults*. The Deep South CME Network, UAB Geriatric Education Center, UAB Division of CME. [www.alabamacme.uab.edu/geriatrics.aspx](http://www.alabamacme.uab.edu/geriatrics.aspx). November 2012.

**EXTERNAL SUPPORT (COMPETITIVE)**

Ongoing

NIH/NIA R01 AG058630-01

B.D. Cosgrove (PI)

09/30/18-05/31/23

Title: Revealing muscle stem cell heterogeneity in mice and humans through deep single-cell analysis

The overall goal of this proposal is to combine high-throughput deep single-cell RNA sequencing across varied adult mouse and human muscle samples and stem-cell population reconstruction algorithms to identify cell- surface antigen profiles that unambiguously distinguish between health and diseased muscle stem cells in mouse and human aging.

International Council on Amino Acid Science                      A.E. Thalacker-Mercer (PI)  
07.01.2017-06.30.2019

Title: Graded-dose of histidine study

The overall goals of this project is to test the overall benefits and safety of graded doses of histidine in the human population and to determine whether carnosine increases in the skeletal muscle with increasing the dose of histidine supplementation at levels that are moderately above the average intake of healthy adults.

U.S. Highbush Blueberry Council                                      A.E. Thalacker-Mercer (PI)  
07.01.2017-01.31.2018

Title: Effect of a blueberry enriched diet on skeletal muscle progenitor cells

The overall goals of this project are to determine the efficacy of serum from donors consuming a blueberry enriched diet on proliferative capacity, glycolysis, inflammation, and oxidative stress in old-hMPCs (vs. young-hMPCs).

Withdrawn

NIH R25    S. Barnes (PI)  
09.2012-08.2017

*UAB Metabolomics Workshop: From Design to Discovery*

The overall goal of this Workshop is to prepare investigators to advance the use of metabolomics in translational research and to direct highly interdisciplinary teams or collaborations in metabolomic studies. After this proposal was successfully funded by the NIH, I withdrew as a Co-I, due to my relocation to Cornell University.

Completed

CVG Seed Grant Award    Z. Gu (PI)  
Cornell University

The overall goals of this project are to develop a novel method for high-throughput single-cell mtDNA sequencing and investigate the pattern of heteroplasmy in single muscle stem-cells and examine possible functional consequence of heteroplasmy in muscle stem cell self-renewal.

PCCW Affinito-Stewart Grant    A.E. Thalacker-Mercer (PI)  
Cornell University

*Characterizing age-related metabolic dysfunction in female skeletal muscle*

The overarching goal of this project is to characterize age-related metabolic dysfunction in female skeletal muscle.

Nutrition or Obesity-Related Pilot Feasibility Study (PI: Thalacker-Mercer) 08.2011-05.2012  
P30DK056336 (PI: D Allison) NIDDK, *Nutrition Obesity Research Center*  
*Peptide YY regulation of inflammatory signaling in primary skeletal muscle cells*

01.01.2019

Named New Investigator (Thalacker-Mercer) 08.2011-05.2012

P30DK056336 (PI: DB Allison)

NIDDK, *Nutrition Obesity Research Center*

5R01HD054960-02 (PI: B Gower)

NICHD

*Reduced carbohydrate diet intervention for PCOS*

Merit Review F7226R (PI: MM Bamman)

VA RR&D 01.01.2010-12.31.2012

*Understanding muscle regeneration impairment in aging veterans*

5R01 AG017896-08 (PI: MM Bamman)

NIA 04.01.2007-03.31.2012

*Maximizing Mechanisms of Muscle Hypertrophy to Combat Sarcopenia in Older Adults*

2T32 DK062710-06 (PI: D Allison)

NIDDK

*Obesity Training Program*

### **NON-RESEARCH SUPPORT:**

#### Ongoing

Cornell Academic Integration Initiative (\$25,000)

*Precision Nutrition Symposium*

### **INVITED SCIENTIFIC PRESENTATIONS, SEMINARS, AND WEBINARS**

- *The essentiality of serine and glycine for skeletal muscle regeneration.* Precision Nutrition and Metabolism in Public Health and Medicine. Chania, Crete, Greece, from September 21-26, 2018.
- *Metabolic and inflammatory factors underlying regenerative capacity of human skeletal muscle progenitor cells.* International Conference on Pathways, Networks and Systems Medicine. Heraklion, Crete, Greece. July 3, 2017
- *Inflammation and metabolic dysfunction--deteriorating the skeletal muscle with aging.* Expanding Nutrition Frontiers webinar series. Division of Nutritional Sciences, Cornell University. May 23, 2017
- *Building and rebuilding the human body: the role of dairy in development, recovery, and regeneration of skeletal muscle.* 2<sup>nd</sup> Annual Dairy Center of Excellence Symposium: Dairy Nutrition for Every Age and Stage. Cornell Dairy Center of Excellence, Cornell University. May 16, 2017
- *Nutrition and stem cells in healthy aging skeletal muscle.* Seminar series, University of Illinois at Chicago, April 21, 2017
- *Aging skeletal muscle...there is hope...I hope.* Grand Rounds, Cayuga Medical, Ithaca, NY, January 20, 2017
- *Nutrition and stem cells in healthy aging.* Merieux and DNS, Cornell University, Ithaca, NY, January 19, 2017

- *Nutrition for Skeletal Muscle Health in Aging*. Cornell Nutrition Conference, Syracuse, NY October 19, 2016
- *Dairy for Skeletal Muscle Health in Aging*. Northeast Dairy Convention, Pocono Manor, PA, September 19, 2016
- *Consumer opportunity (and trends) for dairy innovation: Dairy for Skeletal Muscle Health in Aging*. A Symposium of Integrated Approaches to Sustainable Dairy Production. Cornell University, Ithaca, NY, April 27, 2016
- *Innovations in course design to facilitate understanding, retention, and application of Regulation of Macronutrient Metabolism*. Innovations in Undergraduate, Graduate and Medical Nutrition Education. Experimental Biology, San Diego, CA, April 03, 2016
- *Milk for Muscle in an Aging Population*. Fluid Milk Symposium, 2016 Pennsylvania Dairy Summit, State College, PA, Feb 09, 2016
- *Milk for Skeletal Muscle Health in Aging*. Northeast Fluid Milk Forum, Syracuse NY, June 24, 2015
- *Skeletal muscle aging, from phenotype to metabolite*. Department of Foods and Nutrition seminar series, University of Georgia. Athens, GA. March 04, 2015
- *Skeletal muscle aging, from phenotype to metabolite*. Department of Biomedical Sciences seminar series, Cornell University. Ithaca, NY. November 18, 2014
- *Role of Proteins through a Macro Lens*. Frontiers in Agricultural Sustainability: Studying the Protein Supply Chain to Improve Dietary Quality. The New York Academies of Science and the Sackler Institute for Nutrition Science. New York City, NY. December 12, 2013
- *Fat utilization impacts the negative relationship between insulin sensitivity and leucine*. Experimental Biology, Boston, MA, April 2013
- *From Exercise Endpoints to Genes: It Really is Twisted in the Details*. International e-Conference on Kinesiology and Integrated Physiology, October 4-22, 2011
- *A molecular signature of resistance training-induced human skeletal muscle hypertrophy*. Gulf Coast Physiological Society Meeting, Jackson, MS, May 20-21, 2011
- *Genomic Profiling Reveals Marked Age Differences in Response to Resistance Loading*. American College of Sports Medicine Annual Meeting, Baltimore, MD, June 1-5, 2010
- *Human genomic microarrays reveal novel processes that may initiate skeletal muscle regeneration*. UAB Office of Postdoctoral Education; Postdoc Research Day 2009.
- *The skeletal muscle transcript profile reflects accommodative responses to inadequate protein intake in younger and older males*. Protein and Amino Acids Mini Symposium; Experimental Biology, San Diego, CA, April 4-9, 2008.
- *The Effects of Amino Acids on Muscle Protein Metabolism in Older Persons*. Department of Foods and Nutrition, INP seminar. Purdue University, West Lafayette, IN, November 11, 2006.
- *Dietary Protein Intake Affects Skeletal Muscle Gene Expression in Older Humans*. Department of Foods and Nutrition, Corporate Affiliates. Purdue University, West Lafayette, IN, February 2006.
- *Microarrays, a New Method for Assessing the Effects of Dietary Protein on Skeletal Muscle in Older Humans*. Department of Foods and Nutrition, INP seminar. Purdue University, West Lafayette, IN, February 24, 2006.

## **PUBLISHED ABSTRACTS AND POSTER PRESENTATIONS**

- Thalacker-Mercer, A., Blum J., Gheller, B., Field, M. (2018, September). Essentiality of Serine and Glycine for Skeletal Muscle Regeneration. First International Conference on Precision Nutrition and Metabolism in Public Health and Medicine, Crete, Greece.
- Blum, J., Gheller, B., Le, H., Yi, J., Thalacker-Mercer, A. (2018, September). Characterizing the Role of PKM2 in Muscle Progenitor Cells. First International Conference on Precision Nutrition and Metabolism in Public Health and Medicine, Crete, Greece.
- Brandon Gheller, Jamie Blum, Heather Roman, Anna Thalacker-Mercer, Characterization of Peptide YY During Expansion in Young and Old Human Muscle Progenitor Cells, International Society for Stem Cell Research, Boston, MA, June 14-17.
- Blum, J., Roman, H., Thalacker-Mercer, A. (2017, April). Fn14 Expression is Lower in Female Compared to Male Skeletal Muscle, Independent of Adult Age. Poster Presented at the EB Conference, Chicago, IL.
- Blum, J., Roman, H., Thalacker-Mercer, A. (2017, April). Short-term Inflammation Increases Proliferative Capacity of Human Skeletal Muscle Progenitor Cells from Young and Old Female Donors. Poster Presented at the EB Conference, Chicago, IL.
- Brandon Gheller, Heather Roman, Anna Thalacker-Mercer PYY regulates human skeletal muscle progenitor cell proliferation, Experimental Biology 2017, Chicago, IL, Apr 22-26 2017
- Riddle E, Roman H, Thalacker-Mercer A. Sex and Metabolic Fuel Preference Impact Proliferative Capacity of Human Progenitor Cells. Satellite Cells: External and Systematic Influences. Experimental Biology in Chicago, IL, April 22-26, 2017.
- Riddle E, Roman H, Thalacker-Mercer A. Age and Metabolic Fuel Preference Impact Proliferative Capacity of Human Myogenic Progenitor Cells. Nutrition and Musculoskeletal Health. Experimental Biology in Chicago, IL, April 22-26, 2017.
- Thalacker-Mercer A, Blum JE, Roman H, Riddle E and Gupta D. *Effects of heightened inflammation on arginine transporters and metabolic enzyme expression in primary human myotubes*. Integrative Biology of Exercise, Phoenix, AZ, November 2016.
- Riddle E, Roman H, Ahsan M, Shin H, and Thalacker-Mercer. *Leucine in the Presence of Inflammation Alters BCAA Metabolism in Human Myotubes*. Experimental Biology, San Diego, CA, April 2016.
- Gupta D, Riddle ES, Blum JE, Roman H, and Thalacker-Mercer A. *Effects of Inflammation on Arginine Transport and Metabolism in Human Primary Myotubes*. Experimental Biology, San Diego, CA, April 2016.
- Gheller B, Roman H, Blum J and Thalacker-Mercer A. *PYY, a novel factor in human myogenesis*. Experimental Biology, San Diego, CA, April 2016.
- Blum J, Gheller B, Roman H, and Thalacker-Mercer. *Effects of PYY on IL-6 Signaling in Primary Human Myotubes*. Experimental Biology, San Diego, CA, April 2016.
- Gupta D, Roman H, Touhamy II S, Lin K, and Thalacker-Mercer. *Potential Role of PYY in Skeletal Muscle Cells?* Experimental Biology, Boston, MA, March 28-April 01, 2015.
- Thalacker-Mercer A, Gupta D, Stec M, Tuggle C, Locasale J, Roman H, Bamman M. *Metabolite Profile Associated with Skeletal Muscle and Resistance Exercise Training Responses in Older Adults*. ACSM Conference on Integrative Physiology of Exercise, Miami, FL, September 17-20, 2014.
- Thalacker-Mercer AE, Ingram KH, and Garvey WT. *Fat utilization impacts the negative relationship between insulin sensitivity and leucine*. Experimental Biology, Boston, MA, April 2013.



- Ingram KH, Thalacker-Mercer AE, and Garvey WT. *Individual amino acids and insulin sensitivity: relationships determined by race and gender*. Experimental Biology, Boston, MA, April 2013.
- McLean M, Bates GW, Sweatt K, Stec M, Gower B, and Thalacker-Mercer A. *Skeletal Muscle gene expression of TNF $\alpha$  in women with PCOS*. Society for Gynecological Investigation annual scientific meeting, Orlando, FL, March 2013.
- Stec, M.J., Thalacker-Mercer, A.E., and Bamman, M.M *Exploring ribosomal regulation of human skeletal muscle hypertrophy*. APS: The Integrative Biology of Exercise VI. Westminster, CO. October 2012.
- Merritt EK, Thalacker-Mercer A, Stec MJ, Shelley DP, Bamman MM. *Aged Skeletal Muscle Inflammation Susceptibility*. American College of Sports Medicine Annual Meeting. San Francisco, CA. May 2012.
- Thalacker-Mercer A, Day K, Cui X, Waite L, Absher D, Merritt E, and Bamman M. *Age-related differences in skeletal muscle DNA methylation and gene expression*. Experimental Biology, San Diego, CA. April 2012.
- Stec, M.J., Thalacker-Mercer, A.E., Cui, X., Merritt, E.K., and Bamman, M.M. *Differential myogenic and cell cycle gene translation following unaccustomed resistance loading may contribute to disparate myofiber hypertrophy potential during resistance training*. Experimental Biology. San Diego, CA. April 2012.
- Thalacker-Mercer, A, Merritt, E, Cui, X, and Bamman, M. *A molecular signature of resistance training-induced human skeletal muscle hypertrophy*. Experimental Biology, Washington D.C., April 2011
- Zhu X, J Liu, RG Walton, A Thalacker-Mercer, L Tian, MM Bamman, and WT Garvey. *Effects of resistance exercise and aging on NR4A protein levels in skeletal muscle*. American Diabetes Association 70<sup>th</sup> annual meeting, Orlando, FL, 25-29 June 2010.
- Liu J, A Thalacker-Mercer, X Zhu, RG Walton, MM Bamman, and WT Garvey. *Muscle TRIB3 protein expression and insulin sensitivity during resistance training in young and elderly subjects*. American Diabetes Association 70<sup>th</sup> annual meeting, Orlando, FL, 25-29 June 2010.
- Thalacker-Mercer AE, Petrella JK, Bamman MM. *Effects of resistance exercise training on sarcopenic metabolic syndrome in older adults*. The Obesity Society's 2009 Annual Scientific Meeting. Washington D.C. October 2009.
- Kwak HB, A Thalacker-Mercer, EJ Anderson, KE Boyle, JA Houmard, RC Cortright, MM Bamman, and PD Neuffer. *Simvastatin impairs ADP-stimulated mitochondrial respiration and alters apoptotic signaling and morphology in human skeletal myotubes*. *Diabetes*. 58(Suppl. 1):A393, 2009.
- Thalacker-Mercer, Dell'Italia L, Xiangqin C, Bamman, M. *Human genomic microarrays reveal novel processes that may initiate skeletal muscle regeneration in older adults*. Experimental Biology, New Orleans, LA April 2009.
- Thalacker-Mercer A, Dell'Italia L, Xiangqin C, Bamman, M. *Human genomic microarrays reveal novel processes that may initiate skeletal muscle regeneration*. Adult Skeletal Muscle Symposium: Clinical Problems, Molecular Targets, Lexington, KY, October 30-31, 2008.
- Thalacker-Mercer A, Baker M, Calderon C, and Bamman M. *Simvastatin reduces human primary satellite cell proliferation in culture*. 2008 APS Intersociety Meeting; The Integrative Biology of Exercise-V, Hilton Head, SC, September 24-27, 2008.
- Calderon C, Thalacker-Mercer A, Baker M, Mayhew D, and Bamman M. *O-linked-Beta-N-acetylglucosamine modification affects C2C12 cell cycle regulation and differentiation*. 2008

- APS Intersociety Meeting; The Integrative Biology of Exercise-V, Hilton Head, SC, September 24-27, 2008.
- Thalacker-Mercer AE, Fleet JC, Craig BA, and Campbell WW. *The skeletal muscle transcript profile reflects accommodative responses to inadequate protein intake in younger and older males*. Experimental Biology, San Diego, CA, April 4-9, 2008.
  - Thalacker AE, Fleet JC, Craig BA, Carnell NS, and Campbell WW. *Dietary protein intake affects skeletal muscle gene expression in older humans*. FASEB Summer Research Conference; Nutrient Control of Gene Expression and Cell Signaling, Tucson, AZ, July 30-August 4, 2005.
  - Thalacker AE, Johnson CA, Carnell NS, Yarasheski KE, Campbell WW. *Feeding, protein intake, and gender, but not age, affect albumin synthesis rate in humans*. Experimental Biology, San Diego, CA, April 2-6, 2005.
  - Stull AJ, Iglay HB, Apolzan JW, Thalacker AE, and Campbell WW. *Rheology of meal replacements affects postprandial appetite and food intake in older humans*. Experimental Biology, San Diego, CA, April 2-6, 2005.
  - McFarlin BK, MG Flynn, WW Campbell, LK Stewart, KL Timmerman, AE Thalacker. *CK14+ cell-surface expression of Toll-like Receptor 4 is lower in exercise trained older women*. American College of Sports Medicine 51<sup>st</sup> annual meeting, Indianapolis, IN, June 2-5, 2004.
  - Thalacker AE, NS Carnell, ZK Birge, WW Campbell. *Effects of age and dietary protein intake on macronutrient utilization*. Experimental Biology, Washington, DC, April 17-21, 2004. FASEB J 18(4; Part 1):A146, 2004.

## **GRADUATE PROGRAM MEMBERSHIPS**

### Graduate Field Appointments, Cornell University

Molecular and Integrative Physiology, 2015-present

Nutrition, 2012-present

## **ACADEMIC TRAINEES (RECOGNITION)**

### Postdoctoral Fellows, Current

### Postdoctoral Fellows, Completed

Mamie McLean, M.D., UAB Reproductive Endocrinology and Infertility Fellow Program 2012-2014

### Doctoral Students, Committee Chair, Current

Jamie Blum, Field of Nutrition, Molecular Nutrition concentration, January 2017-present  
(National Science Foundation, Graduate Student Fellowship, 2017-present;

American Society for Nutrition Trainee Travel Award, (September 2018); Division of Nutritional Sciences Research Symposium, Poster Contest Winner, (May 2018)

Brandon Gheller, Ph.D. Candidate, Field of Nutrition, Human Nutrition concentration, January 2015-present

(Canadian Institute of Health Research, Doctoral Foreign Study Award, 2016-2019; Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity

Award, American Physiological Society, April 2017; Cornell Nutrition Graduate Student Organization Poster Competition Award Winner, 2016; Center for Teaching Excellence Graduate Teaching Assistant Fellow, 2015-2017; Cornell University's

nomination for the NIH NCI Predoctoral to Postdoctoral Fellow Transition Award (F99/K00))

Doctoral Students, Committee Chair, Completed

Emily Riddle, Ph.D., Assistant Professor, SUNY Oneonta

Field of Nutrition, Molecular Nutrition concentration, November 2014-2018;  
Dissertation: *Characterizing the Heterogeneity in the Regenerative Capacity of Human Muscle Progenitor Cells.*

(Center for Teaching Excellence Graduate Research and Teaching Fellow, 2017-2018; Schwartz Research Fund Graduate Student Travel Award, 2016; Emerging Leaders in Nutritional Science Poster Competition Gold Award Winner, 2016; Cornell Nutrition Graduate Student Organization Poster Competition Award Winner, 2016; Cornell University Fellowship, 2014-2015)

Doctoral Students, Minor or Field Member, Current

Kara Beckman, Nutritional Sciences, Field Member, Cornell University, 2018-present

Jenna Golan, Minor Member—Molecular Nutrition, Cornell University, 2018-present

Sanjay Guria, Fiber Science & Apparel Design, Minor Member—Human Nutrition, 2017-present

Cassandra Orndorff, Animal Sciences, Minor Member—Nutrition, Cornell University, 2017-present

Yifei Gu, Nutritional Sciences, Field Member, Cornell University, 2017-present

Amaris Williams, Nutritional Sciences, Field Member, Cornell University, 2015-present

Heidi Vanden Brink, Nutritional Sciences, Minor Member—Molecular Nutrition, Cornell University, 2014-present

Doctoral Students, Minor or Field Member, Completed

Kevin Klatt, Nutritional Sciences, Field Member, Cornell University, 2014-2018

Darline Garibay, Comparative Biomedical Sciences, Minor Member—Molecular Nutrition, Cornell University, 2015-2018

Laura Pompano, Nutritional Sciences, Field Member, Cornell University, 2013-2018

Kevin Mazor, Nutritional Sciences, Field Member, Cornell University, 2016

Shama Iyer, PhD, Mechanical and Aerospace Engineering, Minor Member—Nutrition, Cornell University 2013-2015

Master's Students, Committee Chair, Current

Lauren Varvatos, MS Candidate, Field of Nutrition, Nutrition/International, 2017

Master's Students, Committee Chair, Completed

Diwakar Gupta, MS, Field of Nutrition, Human Nutrition concentration, 2014-2017. *Arginine and proline metabolism is associated with older adult skeletal muscle mass and altered by inflammation in primary human muscle cells.*

Master's Students, Minor or Field Member, Current

Guanchen Liu, MS Candidate, Animal Nutrition, ASCN-MS, 2018

Undergraduate Research Mentees

Honors Thesis:

Maaz Ahsan, Cornell University, 2016

**Biology Research Fellows:**

Samir Touhamy II, Cornell University, 2013

**College of Human Ecology, Summer Research Fellow**

Jamie Blum, Cornell University, 2015

Daniel Suh, Cornell University, 2013

**Independent and Empirical Research**

Janet Back, 2017-present

Tyler Beale, 2017-present

Caroline Brauner, 2017-present

Aoife Casey, 2017-present

Christina Cheung, 2017-present

Kalin Ellison, 2017-present

Alex Jung, 2017-present

Matthew Muller, 2017-present

Andrez Paz, 2017-present

Lucas Rockne, 2017-present

Katie Satterthwaite, 2017-present

Michelle Perez, 2017-present

Laura Yang, 2017-present

Tatiana Ferraro, 2017-present

Philip Nicklin, 2017-present

Seok Eun (Jennie) Yi, 2017-present

Antonio Del Vecchio, 2017-present

Joseph Kidane, 2016-2017

Cari Stankaitis, 2016

Christopher Wint, 2017

Andrew Xu, 2016

Edward Jaffe, 2015-2016

Jamie Blum, 2015-2016

Melinda Lem, 2014-2016

Amber Parker 2014-2016

Harold Shin, 2014-2016

Kevin Lin, 2014-2015

Maaz Ahsan, 2014-2016

Hillary Holmes, 2014

Samir Touhamy II, 2013-2015

Rodger Craig, 2013-2014

Raquel Denis, 2013

Shiyi Jin, 2013

Anna Kortright, 2013

Allison Wood, 2013

Tyler Angulo, 2013

Conlan Kreher, 2013

Daniel Suh, 2013

**COURSES TAUGHT**

Currently teaching

	*NS 3200 Human Biochemistry	*NS 6320 Regulation of Macronutrient Metabolism		*NS 4010 Empirical Research (Independent Study)	*BIO 2990/4990 Intro/Independent Research Methods in Bio
<i>Term</i>	**				
Fall 2018	111	NO		28	0
Spring 2018	NO	21		13	4
Fall 2017	119	NO		14	5
Spring 2017	NO	16		3	0
Fall 2016	81	NO		3	0
Spring 2016	NO	12		7	1
Fall 2015	101	NO		5	2
Spring 2015	NA	22		5	2

Fall 2014	NA	NO		5	2
Spring 2014	NA	20		3	2
Fall 2013	NA	NO		4	2
Spring 2013	NA	NA		4	1
Fall 2012	NA	NA		0	0

\*Cornell University course

\*\*indicates the number of students enrolled in course

NO, not offered; NA, not applicable

### Guest Lectures

NS 4410 Nutrition and Disease, 2018, Topic: *Sarcopenia: Pathophysiology and nutrition-related aspects*

### NS7030 Graduate student presentation, Faculty Mentor

Semira Ortiz, Spring 2019

Heidi Vanden Brink, Fall 2018

Sri Lakshmi Sravani Devarakonda, Fall 2018

Erica Shu, Spring 2018

Emily Riddle, Fall 2017

Jenna Golan, Fall 2017

Yuan Si, Fall 2017

Heidi Vanden Brink, Fall 2016

Emily Riddle, Fall 2015

Sze Ting Kwan, Spring 2015

Katie Hootman, Fall 2013

Chang Cao, Fall 2013

Laura Pompano, Spring 2013

### Previously taught

NS 3410 Human Anatomy and Physiology, 2 credits (out of 4), Cornell University, Spring 2015  
(320 students enrolled)

NS 4030 Teaching Apprenticeship, Cornell University, Spring 2015 (12 students enrolled)

NS 3410 Human Anatomy and Physiology, 2 credits (out of 4), Cornell University, Spring 2014  
(260 students enrolled)

NS 4030 Teaching Apprenticeship, Cornell University, Spring 2014 (12 students enrolled)

GBS750 Nerves, Muscle, and Bone, guest lecturer, *Muscle Protein Metabolism*, UAB, 2012

GBS750 Nerves, Muscle, and Bone, guest lecturer, *Muscle Protein Metabolism*, UAB, 2011

## **ACADEMIC COMMITTEES**

### University Committees

RCR Faculty Advising Committee, 2019 Annual RCR Symposium, Cornell University, 2018

RCR Faculty Advising Committee, 2018 Annual RCR Symposium, Cornell University, 2017

OVPR Research Administration Communications study, Steering Committee Member, Cornell University, 2014-2016

Occupational/Preventative Medicine Candidate Search Committee, Member, Cornell University, 2013

College of Human Ecology Committees

Committee on Academic Status, Member, Cornell University, 2014-present

Division of Nutritional Sciences Committees

Co-Chair, Seminar Committee, 2018-present

Seminar Committee, 2016-2018

Postbaccalaureate Admissions Committee, 2016-present

Molecular Nutrition Faculty Search Committee, 2015-2017

Small Grants Committee, Member, 2014-2017

Admissions Committee, Member, 2013-2015

Teaching & Research Fellow Search Committee Meeting, Member, 2013

Nurse Practitioner Search Committee, Member, 2012-2013

**SERVICE ACTIVITIES WITHIN INSTITUTION**

RCR Symposium Discussion Leader, Cornell University, 2019

Faculty Mentor, Human Ecology Peer Partnership Program, College of Human Ecology, Cornell University, 2017

Faculty Mentor, BIO2200, Biology Scholars Program, Cornell University, 2017

Invited Faculty Speaker, DNS Graduation Ceremony, Cornell University, 2017

Faculty advisor, Nutrition Graduate Student Organization, Cornell University, 2017

Reviewer, Evaluation of OSP proposal review process, Cornell University, 2015-2017

Faculty advisor, Nutrition Graduate Student Organization, Cornell University, 2016

Faculty Representative, First Year Parent's Weekend Faculty Panel, DNS faculty representative, 2015

Interviewer, Biological and Biomedical Sciences Graduate Program Interview/Recruitment Event, Cornell University, 2015

Faculty advisor, Nutrition Graduate Student Organization, Cornell University, 2015

Faculty Representative, First Year Parent's Weekend Faculty Panel, DNS faculty representative, 2014

Faculty advisor, Nutrition Graduate Student Organization, Cornell University, 2014

Faculty liaison, ILSI North America Student Summit, Cornell University, 2013

Faculty advisor, Nutrition Graduate Student Organization, Cornell University, 2013

Coordinator, Center for Exercise Medicine Journal Club, UAB, 2011-2012

Co-coordinator, UAB/VA GRECC Muscle and Mobility Journal Club, UAB, 2008-2011

Guest speaker, *Metabolite profiles and the risk of developing diabetes* (Wang TJ et al. Nature Medicine. April 2011), Energetics and Diabetes Journal Club, UAB 2011

Co-coordinator, Center for Exercise Medicine Research Roundtable, UAB, 2011-2012

Organizer, *Tenure and Promotion Workshop*, Nutrition Obesity Research Center, UAB, 2010

Preceptor, *Muscle Case Conference I: Musculoskeletal & Skin Module*, School of Medicine, UAB, 2008, 2009, 2010, & 2011

Graduate student faculty liaison, Department of Foods and Nutrition, Purdue University, 2005-2006

Member, Consumer and Family Sciences Academic Grade Appeals Committee, Purdue University, 2003-2007

Guest speaker, *Body composition assessment*, HK 422: Clinical Experiences in Health and Fitness, Department of Health and Kinesiology, Purdue University, 2002-2007

## **ACADEMIC AFFILIATIONS**

Scientist, NIH-funded Diabetes Research and Training Center, UAB, 2011-2012  
Member, Birmingham/Atlanta VA Geriatric Research, Education, and Clinical Center, 2011-2012  
Scientist, Center for Exercise Medicine, UAB, 2011-2012  
Scientist, Center for Aging, UAB, 2011-2012  
Scholar, Center for Clinical and Translational Science, UAB, 2009-2012  
Associate Scientist, Center for Aging, UAB, 2008-2010  
Member, Ingestive Behavior Research Center, Purdue University, 2005-2007

## **SCIENTIFIC AND PROFESSIONAL SOCIETIES**

American Physiological Society, Member, 2008-present  
American Society for Nutrition, Member, 2003-present

## **SCIENTIFIC MEETINGS ORGANIZED**

APS Annual Meeting at Experimental Biology Minisymposium, "Hot Topics in Nutrition", Chair, Orlando, FL, April 2019  
Experimental Biology Minisymposium, "Protein and Health Implications", Organizing Chair, San Diego, CA, April 2016  
Experimental Biology Minisymposium "Protein and Health Implications", Organizing Co-Chair, Boston, MA, March 2015

## **ADVISORY BOARDS AND COMMITTEES**

PPG Scientific Advisory Board, "Multi-factorial paradigm to understand postpartum vaginal support defects", University of Utah, 2013-2014

## **EXTERNAL COMMITTEES/SERVICE**

Initial Judge, Siemens Competition, Siemens Foundation and Discovery Education, October 2017  
Initial Judge, Siemens Competition, Siemens Foundation and Discovery Education, October 2016  
Past Chair, Energy and Macronutrient Metabolism, Research Interest Section, American Society for Nutrition, 2015-2016  
Chair, Energy and Macronutrient Metabolism, Research Interest Section, American Society for Nutrition, 2014-2015  
Chair-elect, Energy and Macronutrient Metabolism, Research Interest Section, American Society for Nutrition, 2013-2014  
Guest speaker, "Leadership and career paths in nutrition", Dannon Nutrition Leadership Institute, Wye River Conference Center, Queenstown, MD, June 2013  
Poster Judge, Gulf Coast Physiological Society Annual Meeting, Jackson, MS, May 2011

## **EDITORIAL/REVIEW**

### Journals

Journals of Gerontology, Journal Frontiers in Exercise Physiology, Journal Frontiers in Skeletal Muscle Physiology, American Journal of Clinical Nutrition, Journal of Nutrition, Obesity, Nutrition Reviews, Journal of Clinical Endocrinology and Metabolism, Advances in Nutrition, Annals of the New York Academy of Sciences

### Granting Agencies (Study Section)

#### Granting Agencies (ad hoc or mail reviewer)

Diabetes UK, February 2016

Diabetes UK, February 2015

VA, Rehabilitation Research and Development, *SPiRE*, invited reviewer, November 2013

USDA, National Institute of Food and Agriculture, Agriculture and Food Research Initiative,  
*Function and Efficacy of Nutrients*, invited reviewer, July 2013

Clinton Foundation and the Solae Company, invited reviewer, 2009

### **COMMUNITY SERVICE ACTIVITIES**

Guest Speaker, *Skeletal muscle...moving you into healthy aging*. Lifelong. January 09, 2018

Guest Speaker, *Food, Nutrition, and Exercise*. Health and Wellness Program, Dawson Baptist Church. July 14, 2011

Guest Speaker, *Exercise and Physical Activity: Key Ingredients for Healthy Aging*. Jefferson County Office of Senior Citizen Services: "Tune Up" for the Whole Woman. May 26, 2009.

Guest Speaker, *Indirect calorimetry and body composition*, Harrison High School, 2004 & 2005

### **CONTINUING EDUCATION**

*Faculty Scholars Program*, Geriatric Education Center, Student, UAB, Birmingham, AL, 2011-2012

*Protein-DNA Interactions: Gene Specific and Epigenetic Regulation of Expression of the Mammalian Genome*, Biotechnology Training Course, Student, National Institute of Health, Bethesda, MD, 2009

*GRD 717 Principals of Scientific Integrity*, Student, UAB, 2009

*Tenth Anniversary Symposium: The Legacy of Longevity*, Center on Aging and the Life Course, Participant, Purdue University, September 2006

*Applied Management Principles Program*, Krannert School of Business, Student, Purdue University, May 2006

*Nutrient Control of Gene Expression and Cell Signaling*, Participant, FASEB Summer Research Conference, Tucson, Arizona, July 2005

*Aging and Stress: Behavioral and Biological Perspectives*, Center on Aging and the Life Course, Participant, Purdue University, September 2005

*Early Origins of Adult Health: Biological Processes Symposium*, Center on Aging and the Life Course, Participant, Purdue University, April 2004

*Ingestive Behavior Research Center Symposium: Dietary Influences on Obesity: Environment, Behavior and Biology*, Participant, Purdue University, April 2004

*Life Course Inequality: Adverse Childhood Experiences and Adult Health Symposium*, Center on Aging and the Life Course, Participant, Purdue University, September 2003

### **PROFESSIONAL DEVELOPMENT**

College of Agriculture and Life Sciences, *Cornell Faculty Leadership Program*, Participant, Cornell University, 2013

Center for Teaching Excellence courses, Participant, Cornell University  
*Flipping the Classroom*, 2013

*New Faculty Institute*, 2013

Dannon Institute, *Nutrition Leadership Institute*, Participant, Maryland, 2011



Office of Postdoctoral Education, *Laboratory Management Course*, Student, UAB, Fall 2010

Center for Clinical and Translational Science short courses, Participant, UAB

*Challenges and Opportunities in Peer Review: A Vision for Ensuring Its Strategic National Value*, 2010

*Leadership Development*, 2010

*Developing Career Plans for NIH Postdoctoral Fellowships*, 2009

*Developing Scientific Presentations*, 2009

*Developing Research Plans for Grant Applications*, 2009

*Scientific Writing Series (SWS): Developing Scientific Manuscripts*, 2008

Office of Postdoctoral Education short courses, Participant, UAB

*Grant Writing Course*, 2008

*Postdoc Self-Advocacy and Career Ownership Workshop series*, 2008

Nutrition Obesity Research Center short courses, Participant, UAB

*Negotiating, Financial, and Ethical Considerations in Career Development*, 2010

*Tenure and Promotion*, 2010

*On the Road to Meet One's Scholarship Goals: How to Be a Mentor*, 2009

*Leadership*, 2009

*Peer Review: Improving your effective manuscript review writing*, 2009

*Being a productive scholar*, 2008

*Presenting research to the mass media: How scientists do, can and should present their research in the mass media*, 2008

*Toast Masters*, Purdue University, June 2004