

Michelle L. (Asp) Law, Ph.D., R.D.

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EDUCATION

- 2006 – 2010 **Ph.D., Nutrition**
The Ohio State University, Columbus, Ohio
- 2001 – 2004 **M.S. and Dietetic Internship, Medical Dietetics**
The Ohio State University, Columbus, Ohio
- 1997 – 2001 **B.A., Majors: Chemistry and Dietetics**
Concordia College, Moorhead, Minnesota

PROFESSIONAL EXPERIENCE

- Aug 2020 – Present **Assistant Professor**
Department of Family & Consumer Sciences, Nutrition Division
Baylor University, Waco, Texas
- 2018 – 2020 **Adjunct Lecturer**
Department of Family & Consumer Sciences, Nutrition Division
Baylor University, Waco, Texas
- 2016 – 2017 **Research Scientist**
Department of Pediatrics
Baylor Scott & White Health, Temple, Texas
- 2010 – 2016 **Postdoctoral Fellow**
Department of Integrative Biology and Physiology
University of Minnesota Medical School, Minneapolis, Minnesota
- 2006 - 2010 **Graduate Research Associate**
Department of Human Nutrition
The Ohio State University, Columbus, Ohio
- 2004 – 2006 **Clinical Research Coordinator**
Department of Human Nutrition
The Ohio State University, Columbus, Ohio
- 2002 - 2004 **Graduate Research Associate**
School of Allied Medical Professions
The Ohio State University, Columbus, Ohio

TEACHING AND MENTORING

TEACHING

Baylor University

Instructor of Record

NUTR 2351: Nutrition

NUTR 5355: Macronutrients and Metabolism

University of Minnesota

Instructor

PT 6310: Physiology for Physical Rehabilitation (Nutrition and Metabolism Unit)

Tutor

PHSL 5061/PHSL 3061: Principles of Physiology

Laboratory Assistant

INMD 6814/PHSL 5101: Physiology

MENTORING

Thu Pham, Pediatric Resident, McLane Children's Medical Center, 2016-2018

Zachary Som, Undergraduate, University of Minnesota, 2016

Megan Olander, Undergraduate, University of Minnesota, 2013-2014

Jenny Seong, Undergraduate, University of Minnesota, 2010-2014

RESEARCH SUPPORT

Novel calcium buffer for the treatment of diastolic heart failure

Michelle Asp, PI

Agency: NIH

Type: NRSA 1F32HL115876

Amount: \$163,110 (TDC)

Period: 8/27/2012-8/26/2015

Role: PI

The role of insulin resistance in the pathogenesis of tumor-induced cachexia

Michelle Asp, PI

Agency: P.E.O.

Type: Scholar Award (Competitive Student Grant Program)

Amount: \$15,000

Period: 9/2009-5/2010

Role: PI

The role of insulin resistance in the pathogenesis of tumor-induced cachexia

Michelle Asp, PI

Agency: Department of Human Nutrition, Ohio State University

Type: Russell Klein Award (Competitive Student Grant Program)

Amount \$500

Period: 2009

Role: PI

The effect of rosiglitazone on PPAR γ regulation of PTEN in colon-26 adenocarcinoma cells

Michelle Asp, PI

Agency: Department of Human Nutrition, Ohio State University

Type: Vivian Research Award (Competitive Student Grant Program)

Amount \$2,000

Period: 2007

Role: PI

AWARDS AND HONORS

Presidential Fellowship, The Ohio State University, 2009-2010

Myrtle Wolcott Cram Graduate Research Fellowship, College of Education and Human Ecology, The Ohio State University, 2008-2009

Energy and Macronutrient Metabolism Research Interest Group Travel Award, American Society for Nutrition, Experimental Biology Conference, 2008

Mead Johnson/Bristol-Myers Squibb Scholarship, American Dietetic Association, 2002

Karen A. Porcelli Scholarship, Cleveland Dietetic Association, Cleveland, Ohio, 2002

Columbus Dietetic Association Scholarship, Columbus, Ohio, 2002

Mead Johnson/Bristol-Myers Squibb Scholarship, American Dietetic Association, 2000

Faculty Scholarship, Concordia College, Moorhead, Minnesota, 1997-2001

PROFESSIONAL CERTIFICATIONS AND MEMBERSHIPS

Academy of Nutrition and Dietetics, 2020-present

Practice group memberships: Research (RDPG), Oncology Nutrition (ON), Nutrition and Dietetic Educators and Preceptors (NDEP)

Commission on Dietetic Registration - Registered Dietitian (ID# 899660), 2004-present

SERVICE, LEADERSHIP, AND LOCAL AFFILIATIONS

Guest Speaker, Poverty 101 Workshop, Highland Baptist Church, Waco, Texas, 2018

High School Graduation Mentor, Achieve Minneapolis, Patrick Henry High School, Minneapolis, Minnesota, 2014-2015

Mentor for High School Students, Adventures in Leadership, Adventurous Christians Covenant Wilderness Center, Grand Marais, Minnesota, 2013, 2014

Graduate Society for Nutritional Sciences (GSNS), The Ohio State University, Columbus, Ohio, 2006-2010

Registered Dietitian Journal Club, The Ohio State University Medical Center, Columbus, Ohio, 2006-2010

Muscle Research Group, The Ohio State University & Nationwide Children's Hospital, Columbus, Ohio, 2006-2010

Volunteer Dietitian, Vineyard Free Medical Clinic, Columbus, Ohio, 2006-2010

SEMINARS AND INVITED LECTURES

Measuring the cardiac effect of psychosocial stress in mdx mice using a social defeat paradigm. Department of Integrative Biology & Physiology Incubator Chalk Talk, University of Minnesota, 2014

Acute effects of tamoxifen, raloxifene and 4-hydroxytamoxifen on cardiac myocyte function; and Developing a calcium buffering system for diastolic heart failure. Lillehei Heart Institute Trainee Seminar, University of Minnesota, May 2012

Life after Concorida: career path, research opportunities, & some really exciting science! Concordia College, Moorhead, MN, January 2012

Effect of PPAR-gamma agonist rosiglitazone on cachexia pathogenesis in tumor-bearing mice. Department of Human Nutrition, The Ohio State University, July 2010

Effects of PPAR γ agonist rosiglitazone on cachexia pathogenesis and outcomes in tumor-bearing mice. The Ohio State University & Nationwide Children's Hospital Muscle Research Group Meeting, October 2009

The role of insulin resistance in the pathogenesis of tumor-induced cachexia. Department of Endocrinology Research Group Meeting, The Ohio State University, April 2009

Diabetes and cardiovascular disease: a look at risk factor modification. Dining with Diabetes Conference, The Ohio State University Extension, February 2006

Diabetes and cardiovascular disease: a focus on women. Preventing Type 2 Diabetes and Obesity through Community Partnerships Conference, Columbus, Ohio, December 2005

BIBLIOGRAPHY

PEER-REVIEWED PUBLICATIONS

18. Razzoli M*, Lindsay A*, Law ML*, Chamberlain CM*, Southern WM, Berg M, Osborn J, Engeland WC, Metzger JM, Ervasti JM, Bartolomucci A. Social stress is lethal in the *mdx* model of Duchenne Muscular Dystrophy. *EBioMedicine* 2020;55:102700. *equal contributors

17. **Law ML**, Cohen H, Martin AA, Angulski ABB, Metzger JM. Dysregulation of calcium handling in Duchenne Muscular Dystrophy-associated dilated cardiomyopathy: mechanisms and experimental therapeutic strategies. *Journal of Clinical Medicine* 2020;9:E520.
16. **Law ML**, Prins KW, Olander ME, Metzger JM. Exacerbation of dystrophic cardiomyopathy by phospholamban deficiency-mediated chronically increased cardiac Ca²⁺ cycling in vivo. *American Journal of Physiology – Heart and Circulatory Physiology* 2018;315:H1544-H1552.
15. **Asp ML**, Sjaastad FV, Siddiqui JK, Davis JP, Metzger JM. Effects of modified parvalbumin EF-hand motifs on cardiac myocyte contractile function. *Biophysical Journal* 2016;110:2094-105.
14. Prins KW, **Asp ML**, Zhang H, Wang W, Metzger JM. Microtubule-mediated misregulation of junctophilin-2 underlies T-tubule disruptions and increased calcium sparks in *mdx* mice. *Journal of the American College of Cardiology Basic to Translational Science* 2016;1:122-30.
13. Wang W, **Asp ML**, Guerrero-Serna G, Metzger JM. Differential effects of S100 proteins A2 and A6 on cardiac Ca²⁺ cycling and contractile performance. *Journal of Molecular and Cellular Cardiology* 2014;72C:117-25.
12. **Asp ML**, Martindale JJ, Metzger JM. Direct, differential effects of tamoxifen, 4-hydroxytamoxifen, and raloxifene on cardiac myocyte contractility and calcium handling. *PLoS One* 2013;8(10):e78768.
11. Wang W, Barnabei MS, **Asp ML**, Heinis FI, Arden E, Davis J, Braunlin E, Li Q, Davis JP, Potter JD, Metzger JM. Noncanonical EF-hand motif strategically delays Ca²⁺ buffering to enhance cardiac performance. *Nature Medicine* 2013;19:305-12.
10. **Asp ML**, Martindale JJ, Heinis FI, Wang W, Metzger JM. Calcium mishandling in diastolic dysfunction: Mechanisms and potential therapies. *Biochimica et Biophysica Acta* 2013;1833:895-900.
9. **Asp ML**, Richardson JR, Collene AL, Droll KR, Belury MA. Dietary protein and beef consumption predict for markers of muscle mass and nutrition status in older adults. *Journal of Nutrition Health & Aging* 2012;16:784-90.
8. **Asp ML**, Tian M, Kliwer KL, Belury MA. Rosiglitazone delayed weight loss and anorexia while attenuating adipose depletion in mice with cancer cachexia. *Cancer Biology & Therapy* 2011;12:957-65.
7. Tian M, **Asp ML**, Nishuima Y, Belury MA. Evidence for cardiac atrophic remodeling in cancer-induced cachexia in mice. *International Journal of Oncology* 2011;39:1321-6.
6. **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. *Clinical Nutrition* 2011;4:443-9.
5. Tian M, Kliwer KL, **Asp ML**, Stout MB, Belury MA. c9t11-Conjugated linoleic acid-rich oil fails to attenuate wasting in colon-26 tumor-induced late-stage cachexia in male CD2F1 mice. *Molecular Nutrition & Food Research* 2011;55:268-77.

4. Tian M, Nishijima Y, **Asp ML**, Stout MB, Reiser PJ, Belury MA. Cardiac alterations in cancer-induced cachexia in mice. *International Journal of Oncology* 2010;37:347-53.
3. **Asp ML**, Tian M, Wendel AA, Belury MA. Evidence for the contribution of insulin resistance to the development of cachexia in tumor-bearing mice. *International Journal of Cancer* 2010;126:756-63.
2. Norris LE, Collene AL, **Asp ML**, Hsu JC, Liu LF, Richardson JR, Li D, Bell D, Osei K, Jackson RD, Belury MA. Comparison of dietary conjugated linoleic acid with safflower oil on body composition in obese postmenopausal women with type 2 diabetes mellitus. *American Journal of Clinical Nutrition* 2009;90:468-76.
1. **Asp ML**, Hertzler SR, Chow J, Wolf BW. Gamma-cyclodextrin lowers postprandial glycemia and insulinemia without carbohydrate malabsorption in healthy adults. *Journal of the American College of Nutrition* 2006;25:49-55.

BOOK CHAPTERS

3. Thompson BR, **Law ML**, Metzger JM. Molecular mechanism of sarcomeric cardiomyopathies. In: Garry DJ, Wilson RF, Vlodayer Z (eds). *Congestive Heart Failure and Cardiac Transplantation: Clinical, Pathology, Imaging, and Molecular Profiles*. New York: Springer Publishing, 2017.
2. Belury MA, **Asp ML**, Collene AL, Koster CG, Liu L-F, Purushotham A, Shrode G, Wendel A. Is There a Role for Conjugated Linoleic Acid to Aid in the Prevention of Type 2 Diabetes? In: Huang YS, Yanagita T, Knapp H (eds). *Dietary Fats and Risk of Chronic Disease*. Champaign, IL: American Oil Chemists Society, 2006:263-73.
1. Hertzler SR, Kim Y, Khan R, **Asp M**, Savaiano D. Intestinal disaccharidase depletions. In: Shils ME, Shike M, Ross AC, Caballero B, Cousins RJ (eds). *Modern Nutrition in Health and Disease*, 10th ed. Philadelphia: Lippincott Williams & Wilkins, 2006:1189-1200.

PUBLISHED ABSTRACTS

14. Pham T, Sunkara M, Mallett LH, Sugianawaty M, Barnard BJ, **Law ML**, Cantey JB. Nutritional cost of necrotizing enterocolitis among preterm infants in the neonatal intensive care unit. North American Society for Pediatric Gastroenterology, Hepatology and Nutrition Conference, Las Vegas, NV, November 2017.
13. Murphy B, Mallett L, **Law M**. Family education program improves diet, family meals and physical activity with interactive demonstrations. Society for Nutrition Education and Behavior Conference, Washington, D.C., July 2017.
12. **Law ML**, Larson K, Rennert M, Barnard BJ, Drigalla J, Beeram MR, Shanley LA. Implementation of a pediatric physician compensation model to improve number of overweight patients with completed lipid panel. Pediatric Academic Societies Meeting, San Francisco, CA, May 2017.

11. **Law ML**, Farris A, McGahey J, Gibson J, McCormick S, Shanley LA. Implementation of a physician compensation model to improve timely admission orders on a hospitalist service, Pediatric Academic Societies Annual Meeting, San Francisco, CA, May 2017.
10. **Asp ML**, Metzger JM. Contractile structure-function of parvalbumin's EF-hand metal ion binding loop in isolated adult cardiac myocytes. *Biophysical Journal* 2014;106:566a.
9. **Asp ML**, Martindale JJ, Metzger JM. Mechanism of acute tamoxifen and 4-hydroxytamoxifen-mediated contractile dysfunction in isolated adult cardiac myocytes. *Biophysical Journal* 2013;104:315a.
8. **Asp ML**, Martindale JJ, Metzger JM. Tamoxifen has acute inhibitory effects on contractility in isolated adult rat cardiac myocytes. *Biophysical Journal* 2012;102(3):354a.
7. **Asp ML**, Tian M, Stout MB, Belury MA. Effects of the insulin sensitizer rosiglitazone on cachexia outcomes in mice with colon-26 tumors. Abstracts of the 5th Cachexia Conference, Barcelona, Spain, December 5-8, 2009. *Journal of Cachexia, Sarcopenia and Muscle* 2010;1(1):43-128.
6. Tian M, **Asp ML**, Stout MB, Nishijima Y, Reiser PJ, Belury MA. Cardiac alterations in cancer-induced cachexia in mice. Abstracts of the 5th Cachexia Conference, Barcelona, Spain, December 5-8, 2009. *Journal of Cachexia, Sarcopenia and Muscle* 2010;1(1):43-128.
5. **Asp ML**, Tian M, Wendel AA, Belury MA. Evidence for the early involvement of insulin resistance in the development of cachexia in mice bearing colon-26 tumors. *FASEB Journal* 2008;22:#1089.5.
4. Tian M, **Asp ML**, Wendel AA, Belury MA. Dysregulation of lipid metabolism in cardiac muscle of mice with cachexia. *FASEB Journal* 2008;22:#147.5.
3. Norris L, Collene A, **Asp M**, Liu L, Hsu D, Li D, Bell D, Osei K, Jackson R, Belury M. Conjugated linoleic acid reduces body weight and body fat in postmenopausal women with type 2 diabetes. *FASEB Journal* 2008;22:#1090.5.
2. Norris L, Collene A, **Asp M**, Liu L, Hsu D, Li D, Bell D, Osei K, Jackson R, Belury M. Comparative effects of dietary oils on markers of insulin sensitivity in postmenopausal women with type 2 diabetes. *FASEB Journal* 2008;22:#1039.6.
1. **Asp ML**, Chow J, Hertzler SR. Effect of gamma-cyclodextrin on postprandial glycemia, insulinemia, and colonic hydrogen production in healthy humans. *FASEB Journal* 2005;19:#69.2.

MEDIA

American Journal of Physiology – Heart and Circulatory Physiology Podcast. Unregulated Ca²⁺ cycling exacerbates DMD cardiomyopathy, <https://www.podbean.com/media/share/pb-iyypq-9c924f>, 10/16/2018.