

**KATE J. LARSON, Ph.D.**

**CURRICULUM VITAE**

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**US Citizenship Status:** U.S. Citizen

**Education:**

1999 Ph.D. Nutrition, University of Tennessee, Knoxville, TN.  
1993 M.S. Biology, East Tennessee State University, Johnson City, TN.  
1991 B.S. Biology, East Tennessee State University, Johnson City, TN.

**Detailed work experience**

Title: **Research Leader, USDA ARS, Grand Forks HNRC**  
Dates of employment: April 2020 - present  
Work schedule: 9 am -5:30 pm  
Hours worked per week: 40 hrs  
Grade, series: GS 15, 0630  
Major duties: Plan and conduct animal and human independent and team research projects to determine how parental diet and exercise conditions and dietary behavior that influence the risk of offspring obesity by epigenetic alterations using molecular, physiological, and epigenetic experimental methods. Supervise Healthy Body Weight unit scientists, technical staff, postdocs, students, and core lab staff. Manage resources and facilities to accomplish research goals. Publish research results in peer-reviewed scientific journals and present results at local, national, and international scientific meetings. Lead and supervise research program progress, evaluate personnel quarterly and yearly, manage equipment and fiscal resources.

Title: **Acting Research Leader, USDA ARS, Grand Forks HNRC**  
Dates of employment: December 2016 – March 2020  
Work schedule: 9 am -5:30 pm  
Hours worked per week: 40 hrs

Grade, series: GS 14, 0630  
Major duties: Plan and conduct animal and human independent and team research projects to determine how parental diet and exercise conditions and dietary behavior that influence the risk of offspring obesity by epigenetic alterations using molecular, physiological, and epigenetic experimental methods. Supervise Healthy Body Weight unit scientists, technical staff, postdocs, students, and core lab staff. Manage resources and facilities to accomplish research goals. Publish research results in peer-reviewed scientific journals and present results at local, national, and international scientific meetings. Lead and supervise research program progress, evaluate personnel quarterly and yearly, manage equipment and fiscal resources.

Title: **Lead scientist, USDA ARS, GFHNRC**  
Dates of employment: 2012 - present  
Work schedule: 9 am -5:30 pm  
Hours worked per week: 40 hrs  
Grade and series: GS 13-14, 0630  
Major duties: Plan and conduct animal and human independent and team research projects to determine how parental diet and exercise conditions and that influence the risk of offspring obesity by epigenetic mechanism using molecular, physiological, and epigenetic experimental methods. Supervise team scientists, technical staff, postdocs, and students and manage resources and facilities to accomplish research goals. Publish research results in peer-reviewed scientific journals and present results at local, national, and international scientific meetings. Lead and supervise research program progress, evaluate personnel quarterly and yearly, manage equipment and fiscal resources.

Title: **Scientist, USDA ARS, GFHNRC**  
Dates of employment: 2010 - present  
Work schedule: 9 am -5:30 pm  
Hours worked per week: 40 hrs  
Grade and series: GS 13, 0630  
Major duties: Plan and conduct animal and human independent and team research projects to determine how parental diet and exercise conditions and that influence the risk of offspring obesity by epigenetic mechanism using molecular, physiological, and epigenetic experimental methods. Supervise technical staff, postdocs, and students and manage resources and facilities to accomplish research goals. Publish research results in peer-reviewed scientific journals and present results at local, national, and international scientific meetings. Lead and supervise research program progress, evaluate personnel quarterly and yearly, manage equipment and fiscal resources.

Title: **Adjunct Associate Professor**, University of North Dakota School of Medicine, Department of Biomedical Sciences, Epigenetic Program  
Dates of employment: 2012 - present  
Work schedule: As needed  
Hours worked per week: As needed  
Grade and series: Associate Professor of Human Medicine  
Major duties: Attend focus group meetings, participate in seminar presentations, collaborate to conduct research projects, write collaborative research project agreements, serves as a graduate student committee member, and publish results from collaborative projects, apply extramural grants from collaborative research projects.

Title: **Assistant Professor**, Michigan State University  
Department of Nutrition and Food Science  
Dates of employment: 2001 - 2010  
Work schedule: 8 am -5:30 pm  
Hours worked per week: 40 hrs  
Grade and series: Assistant Professor of Nutritional Science  
Major duties: Teach Nutritional Science classes, mentor students and postdocs, Conduct individual and collaborative research projects, serve on university committees, attend internal and external meetings, participate in seminar presentations, collaborate to conduct research projects, write research project agreements, serves as a graduate student committee major advisor and as member, and publish results from collaborative projects, apply extramural grants from collaborative research projects.

Title: **Scientist III (Research Assistant Professor, Postdoc)**, Jean Mayer USDA Human Nutrition Research Center at Tufts University, Nutritional Immunology Laboratory  
Dates of employment: January 1999 – October 30, 2001  
Work schedule: 8 am-5:30 pm  
Hours worked per week: > 40 hrs  
Grade and series: Research Assistant Professor of Nutritional Immunology  
Major duties: Conduct individual and independent research projects, attend group meetings, participate in seminar presentations, collaborate to conduct research projects, write collaborative research project agreements, mentor graduate students, publish results from collaborative projects

Title: **Graduate Research Assistant**, Nutrition Department, University of Tennessee at Knoxville  
Dates of employment: August 1995 - December 1998  
Work schedule: 8 am-5:30 pm  
Hours worked per week: > 40 hrs  
Grade and series: Doctoral Research and Teaching Assistant of Nutritional Biochemistry

Major duties: Conduct individual research projects, attend group meetings, participate in seminar presentations, attend national meetings to present research results, publish results in scientific journals.

**Honors, Awards, and Service:**

- 2021 USDA ARS Palins Area Award, Group Award for service as member of the PACE (Plans Area Council of Engagement)
- 2021 USDA ARS Merit Award for Annual Performance
- 2021 USDA ARS Key Executive Leadership Training
- 2020 USDA ARS Merit Award for Annual Performance
- 2019 USDA ARS PA Emerging Leaders Program Award
- 2018 Organizer & Chair, Am. Soc. for Nutr. Symposium on Immunometabolism and Obesity, Boston, MA.
- 2018 Session Chair, 5<sup>th</sup> Annual University of North Dakota Epigenetics and Epigenomics Symposium
- 2018 USDA ARS, Merit Award
- 2017 Organizer and Chair, Am. Soc. for Nutr. Symposium on Diet and Exercise on Adipocyte Epigenetics.
- 2017 USDA ARS, Merit Award
- 2016 The Korean Nutrition Society Award
- 2016 Organizer and Chair, American Physiology Society Featured Topic Symposium, EB 2016
- 2016 USDA ARS, Merit Award
- 2016 Organizer and Chair, American Physiology Society Featured Topic Symposium, EB 2016
- 2015 Co-Chair, USDA ARS GFHNRC-UND Med School, Nutritional Epigenetics, Grand Forks, ND
- 2015 Norman Kretchmer Memorial Award in Nutrition and Development, American Society of Nutrition
- 2015 USDA ARS Annual Scientist Research Performance Award
- 2015 Co-Chair and Organizer, USDA ARS GFHNRC-UND Med School, Nutritional Epigenetics Symposium, Grand Forks, ND
- 2013 Chair, Basic Science Section, The Obesity Society
- 2013 Session Co-Chair, 2013 Experimental Biology ASN Minsymposium “Obesity, Inflammation, and Nutrigenomics”, Boston, M.A.
- 2012 Session co-chair and organizer, The American Society for Nutrition Symposium, Adipose Dysfunction Interaction of ROS and Inflammation, EB 2012, San Diego C.A., April 24.
- 2011 Chair, Nutrient and Gene Interaction Research Interest Section, American Society of Nutrition
- 2011 Chair, North Central Regional Multistate Research Project NC-1039 Group, n-3 Polyunsaturated Fatty acid and Human Health
- 2010 Chair, Molecular Mechanisms of Obesity Track, The Obesity Society Program Committee
- 2010 Session Chair, Symposium “ Inflammatory and Molecular Links Between Obesity and Chronic Diseases ”Symposium “Inflammation and Immune Dysfunction”, 2010 Annual Obesity Society Meeting, San Diego, CA.
- 2009 Session Chair, Symposium “Inflammation and Immune Dysfunction”, 2009 Annual Obesity Society Meeting, Washington D.C.
- 2009 Co-chair, “Cytokines and other Secreted Factors” session, 2009 Annual Obesity Society

- Meeting, Washington D.C.
- 2008 Chair, Symposium “Human adipose tissue as endocrine organ”, 2008 Annual Obesity Society Meeting, New Orleans, LA
  - 2007 Session Co-Chair and Organizer, 2007 Experimental Biology Symposium “Obesity-associated Inflammation, Immune Dysfunction, and Effects of Nutrient and Lifestyle Modification”, Washington D.C.
  - 2007 Expert Panel Member for the Life Science Research Office Special Meeting on Obesity, Inflammation and Nutrigenomics, FASEB office, Bethesda, MD.
  - 2006 Session Co-chair of mini-symposiums, Nutrient Regulation of Immune function Session I and session II, 2006 Experimental Biology Meetings.
  - 2005 Session Chair, Obesity Session for the “Creating Cardiovascular Innovations through Collaboration: Pfizer and MSU”
  - 2005-2006, Chair, North Central regional Multistate Research Project, N-3 polyunsaturated fatty acid and Human Health
  - 2004-2005, Secretary, North Central regional Multistate Research Project, N-3 polyunsaturated fatty acid and Human Health
  - 2002 Chair of The 5<sup>th</sup> International Congress on Essential Fatty Acids and Eicosanoids, PUFAs/Eicosanoids, Inflammation and Immune Function Session
  - 2000 The American Aging Association Paul E. Glenn Award for Postdoctoral Research
  - 1998 North American Association of Obesity, Travel Award for the International Congress of Obesity
  - 1998 FASEB Summer Conference Travel Award to graduate student, Snowmass, Colorado
  - 1998 Chancellor’s Outstanding Graduate Student Teaching Award, University of Tennessee
  - 1998 Proctor & Gamble Student Research Award, American Society for Nutritional Science
  - 1997 Predoctoral Fellowship, American Society for Nutritional Science
  - 1997 Proctor & Gamble Student Research Award, American Society for Nutritional Science
  - 1997 The Physician’s Medical Education and Research Foundation Award
  - 1996 Founder’s Award, 31<sup>st</sup> Annual Southeastern Regional Lipid Conference, November, Cashier, North Carolina
  - 1995 Scholarly Activity Research Incentive Fund, University of Tennessee
  - 1992 American Heart Association Graduate Student Summer Research Award
  - 1992 Sigma-Xi, Grant-in Aid in Research

**Invited Presentations:**

- 2022 University of Hawaii at Manoa, Depart of Nutrition, “Nutritional epigenetics and Obesity”
- 2021 University of North Dakota, Department of Nutrition, “Nutritional Epigenetics and Energy Metabolism”
- 2019 University of Connecticut, Department of Nutrition, “Epigenetic mechanisms underlying offspring obesity: Role of parental obesity and exercise”, Storrs, CT.
- 2019 Epigenetic Focus Group Seminar Series, “Epigenetics of Obesity: Effects of Maternal and Paternal Diet and Obesity”, UND School of Medicine, Grand Forks, ND
- 2019 Obesity Cluster 5<sup>th</sup> Annual Meeting, “Epigenetics of Obesity”, Texas Tech University, Lubbock, TX
- 2018 Nutrition 2018 American Nutrition Society Annual meeting, “Offspring exercise differentially regulates subcutaneous adipose tissue beige adipocyte numbers and

- G9a protein expression in C57Bl6/J mice fed a maternal high fat diet” in White, Beige and Brown Fat Adipose Metabolism and Obesity Session, Boston MA
- 2017 The National Maternal and Infant Nutrition Conference” Inflammation, Infection, and Pregnancy: An Epigenetic Perspective”, University of Minnesota, Minneapolis, MN
  - 2017 EB 2017, ASN Symposium on diet, Exercise on adipose tissue Epigenetic regulations, Chicago, IL
  - 2017 EB 2017, Paternal exercise and healthy diet are required to protect offspring from high fat diet-induced obesity and type 2 diabetes risk in mice, Chicago, IL.
  - 2016 FASEB Summer Research Conference, “Nutrition, Genetic and Epigenetic Programming and Immunometabolism”/Immunological Aspects of Obesity meeting, Big Sky, MT.
  - 2016 University of North Dakota School of Medicine Annual Epigenetic symposium, “Effects of Maternal Diet on Beige Adipocyte and FGF21/G9a regulation”.
  - 2016 American Physiology Society Featured Topic Symposium, “Introduction to Environmental Epigenetic Regulators of Obesity and Inflammation”
  - 2015 University of North Dakota School of Medicine Seminar, “Effects of maternal Nutrients and Exercise on Energy Metabolism and Epigenetics”
  - 2015 Korean Nutritional Society Annual Conference on “Nutrition and Omics: Challenges and Breakthrough”, Seoul, South Korea, November 6th, 2015.
  - 2015 The 10th Annual Texas Conference on Health Disparities, “The Epigenetics of Obesity: Individual, Social, and Environmental Influences”, UNT Health Science Center, Fort Worth, TX, June 2015.
  - 2014 FASEB Summer Research Conference, “Epigenetics and Nutrient Sensing in Adipose Tissue”, Nutrient Sensing and Metabolic Signaling, August 10-15, 2014, Big Sky, MT
  - 2014 North Dakota State University, Department of Animal Science Spring Seminar Series, “Maternal diet-induced obesity and adipose tissue epigenetics”, April 11
  - 2014 EB 2014 Minisymposium on Nutrient-Gene Interactions: Nutritional Regulation of Epigenetics. “Maternal low protein diet induces muscle mitochondrial respiration impairment, catch-up growth and PGC-1 $\alpha$  expression”, San Diego, CA, April 28
  - 2013 Tufts University Spring Seminar Series, “Obesity and Adipose Tissue Epigenetics”, Boston, MA, November 11.
  - 2013 EB 2013 Symposium, “Nutritional Epigenomics: A Portal to Disease Prevention, Boston, MA, April 23.
  - 2013 School of Medicine and Health Sciences, University of North Dakota, “Obesity and Adipose Tissue Epigenetics”, 33rd Annual Frank Low Research Day, April 18.
  - 2012 NIH workshop, “Overview of genetics and epigenetics of inflammation: role of nutrition”, “Inflammation and Nutritional Science for Programs/Policies and Interpretation of Research Evidence (INSPIRE), Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, November 28-30.
  - 2012 “Maternal Low protein-induced obesity and adipose tissue growth”, Department of Biology, University of North Dakota.
  - 2012 EB 2012, The American Society for Pharmacology and Experimental Therapeutics Symposium: Perivascular (p) fat: Pharmacology, physiology and

(P) function, 'Emerging fields of study on the adipose tissue', San Diego, CA, April 23.

- 2012 EB 2012, The American Society for Nutrition Minisymposium, Maternal low protein diet and postnatal high fat diet increases adipose imprinted gene expression, San Diego, CA, April 22.
- 2011 FASEB Summer Research Conference, "Nutrient Control of Metabolism and Cell Signaling", Steamboat Springs, CO, August 7-12.
- 2011 FASEB Summer Research Conference, "Nutritional Immunology: Role in Health & Disease", Carefree, AZ, July 5-12.
- 2011 Nutrition and Wellness Research Center Symposium: origin of Obesity: Maternal, Epigenetics, and Life Style", Iowa State University, May 9-11.
- 2009 The Third Military Medical University, "Obesity- associated inflammation and immune dysfunction: Role of adipose tissue".
- 2009 Chongqing Medical University, "Obesity- associated inflammation and immune dysfunction: Role of adipose tissue".
- 2009 University of California at Davis, "Obesity-Associated Metabolic Dysregulation and Inflammation: Role of Adipose Tissue".
- 2008 University of Illinois, "Obesity-associated Inflammation: Role of Adipose Tissue and Anti-inflammatory Nutrients".
- 2007 FASEB Summer Conference, Nutritional Immunology: Its Role in Health and Disease, Tucson, AZ, August 2007.
- 2006 Invited speaker, 2nd Annual Nutrigenomics Conference at MSU, Department of Food Science and Human Nutrition and Department Radiology of MSU
- 2005 Invited speaker, Lillian Fountain Smith Conference, Colorado State University, Fort Collins, CO
- 2005 Invited speaker for seminar program, College of Veterinary Medicine at Michigan State University, Department of Pathobiology and Diagnostic Investigation
- 2004 Invited chair and speaker, "Obesity Session" for the "Creating Cardiovascular Innovations through Collaboration: Pfizer and MSU"
- 2004 FASEB Summer Conference on "Integrative Approaches to Understanding Obesity and its Metabolic and Clinical Consequences", Pine Mountains Georgia
- 2003 FASEB Summer Conference on Impact of Nutritional Status on Immune Function and Health, Inflammation session, Obesity-induced systemic inflammation: role of Interleukin-6 (IL-6), C-reactive protein (CRP) and Complement System, Saxton Rivers, VT
- 2002 Invited Chair and speaker, The 5<sup>th</sup> International Congress on Essential Fatty Acids and Eicosanoids, PUFAs/Eicosanoids, Inflammation and Immune Function Session, Eicosanoids and Immune Function in the Aged: Dietary Modification, Taipei, Taiwan

### **Professional Committee Service and Memberships:**

#### **Scientific Society Office and Committee Assignments**

- 2016-present Editorial board, Journal of Nutrition
- 2012-present Editorial board, Journal of Nutritional Biochemistry
- 2015-present Editorial board, Frontiers in Immunology and  
Editorial board, Frontiers in Nutrition
- 2016 Editorial board, Scientific Reports

- 2012-2015 Editorial board, International Scholarly Research Network (ISRN) Nutrition Journal
  - 2012-2015 Editorial board, Physiological Genomics
  - 2013-2016 Member, American Nutrition Society, Program Committee
  - 2012-2021 USDA ARS GF HNRC Animal Care and Use Committee member
  - 2012 Working Group member, Inflammation and Nutritional Science for Programs/Policies and Interpretation of Research Evidence (INSPIRE), Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH
  - 2012-present USDA ARS GF HNRC The Biology of Obesity Prevention CRIS Research Project Unit group member
  - 2012 Institute of Medicine (IOM) Basic Science Agenda Subcommittee
  - 2012-2016 Member, American Heart Association Lipid II Peer Review Committee
  - 2011 Search Committee Member, Research Leader Position at USDA ARS GF HNRC
  - 2010-present University of North Dakota, Epigenetics Focus Group
  - 2011 Member, NIH NCCAM P19 Study Section, 2011.
  - 2008-2010 The Obesity Society Program Committee Member
  - 2007-2009 AHA Region IV Cardiorenal peer review committee)
  - 2003-2004 American Society of Nutritional Science, Nutritional Immunology Research Interest Section, Steering Committee.
- Served on NIH study Section, PAR16-366, Research in Biomedicine and Agriculture Using Agriculturally Important Domestic Animal Species, April 2019
  - Served on USDA NIFA National Needs Graduate Fellowship Program Peer Review Panel, May 2018
  - Served on NIH Special Emphasis Panel, NCCAM, 2010
  - Invited to review USDA NIFA grant proposals, August 2011.
  - Invited to review Obesity Center grant proposals, NIH, 2006.
  - Invited to review USDA NRI grants, 2005.

#### **Memberships in Professional and Honor Society**

- American Society for Nutrition
- The Obesity Society
- American Physiological Society
- Sigma Xi Scientific Research Society

#### **Agency, Center, University and Departmental Committee Services**

- Member, USDA ARS Plains Area Council for Engagement (PACE) Action Team (2016-2021)
- Review panel member, USDA ARS GFHNRC Research Leader Search (2019)
- Interview Panel Committee Member, Center Director Search at USDA ARS GF HNRC (2016)
- Search Committee Chair, Research Scientist Position at USDA, ARS GF HNRC member and team leader (2014)
- Search Committee Member, Research Leader Position at USDA ARS GF HNRC (2011)
- Search Committee member, Research Scientist Position at USDA ARS GF HNRC (2011)



- Michigan State University, Women’s Advisory Committee to the Provost (2002-2005)
- Michigan State University, Appeals Board, (2002-2003)
- Michigan State University, Department of Food Science and Human Nutrition, Nutritional Sciences Undergraduate Committee, (2002-2010).
- Michigan State University, Department of Food Science and Human Nutrition, Spring Seminar Committee
- Michigan State University, Nutritional Immunology Program co-founder and organizer of visiting scholar and journal clubs (2003-2006).
- Michigan State University, Department of Food Science and Human Nutrition, Graduate Advisory Committee and chair, (2005-2006).
- Michigan State University, Department of Food Science and Human Nutrition, GM Trout Visiting Scholar Seminar Program

#### **Ad hoc reviewer**

- Journal of Nutrition
- Journal of Nutritional Biochemistry
- Frontiers in Immunology
- Frontiers in Immunology
- British Journal of Nutrition
- Diabetes
- Scientific Report
- PLOS One
- American Journal of Physiology
- Journal of Experimental Biology and Medicine
- Medicinal Food
- International Journal of Obesity
- Obesity Journal
- Clinical and Experimental Pharmacology and Physiology

#### **Peer Reviewed Manuscript Publications:**

- 1 Bukowski, M., Singh, B.B., Roemmich J., and **Claycombe-Larson, K.J.**, Lipidomic analysis of TRPC1 Ca<sup>2+</sup> permeable channel-knock out mouse demonstrates a vital role in placental tissue sphingolipid and triacylglycerol homeostasis under maternal high-fat diet, *Frontiers in Endocrinology*, Accepted, Feb. 2022.
- 2 Crouse, M.S., Caton, J., **Claycombe-Larson, K.J.**, Diniz, W.J.S., Amanda K Lindholm-Perry, A.K., Reynolds, L.P., Dahlen, C.R., Borowicz, P.P., Ward, A., Epigenetic Modifier supplementation improves mitochondrial respiration, growth rates, and alters DNA methylation of bovine embryonic fibroblast cells cultured in divergent energy supply, *Frontiers in Genetics*, Accepted, Jan. 2022.
- 3 **Claycombe-Larson** KJ, Bundy A, Lance EB, Darland DC, Casperson SL, Roemmich JN., Postnatal exercise protects offspring from high-fat diet-induced reductions in subcutaneous adipocyte beiging in C57Bl6/J mice, *J Nutr Biochem*. 2022 Jan;99:108853. doi: 10.1016/j.jnutbio.2021.108853, 2021.
- 4 **Claycombe-Larson**,K.J., Bundy, A., and Roemmich, J., Paternal high-fat diet and exercise regulate sperm miRNA and histone methylation to modify placental inflammation, nutrient transporter mRNA expression and fetal weight in a sex-dependent manner. *J Nutr Biochem*, 81:108373. doi: 10.1016/j.jnutbio.2020.108373, 2020.

- 5 Strahm, A., Bagne, A., Rued, H., **Claycombe-Larson, K.J.**, Roemmich, J.N., Hilmert, C. 2020. Prenatal traumatic stress and offspring hair cortisol concentration: A nine year follow up to the Red River Flood Pregnancy Study. *Psychoneuroendocrinology*. <https://doi.org/10.1016/j.psyneuen.2019.104579>, 2020.
- 6 **Claycombe-Larson, K.J.**, Alvine, T., Wu, D., Kalupahana, N.S., Moustaid-Mouss, N., and Roemmich, J.N., Nutrients and Immunometabolism: Role of Macrophages, Nutrients and immunometabolism: Role of macrophages. *Journal of Nutrition*. <https://doi.org/10.1093/jn/nxaa085>, 2020.
- 7 Schaar, A., Sun, Y., Sukumaran, P., Rosenberger, T., Krout, D., Roemmich, J., Brinbaumer, L., **Claycombe-Larson, K.**, and Brij Singh, B., Calcium entry via TRPC1 is essential for cellular differentiation and modulates secretion via the SNARE complex, *J Cell Science*, In press, 132(13), doi.org/10.1242/jcs.231878, 2019.
- 8 Marwarha G, **Claycombe-Larson K**, Lund J, Schommer J, Ghribi O. A Diet Enriched in Palmitate and Deficient in Linoleate Exacerbates Oxidative Stress and Amyloid-beta Burden in the Hippocampus of 3xTg-AD Mouse Model of Alzheimer's Disease. *J Alzheimers Dis*. 68 (1): 219-237, 2019.
- 9 Marwarha G, **Claycombe-Larson K**, Lund J, Ghribi O. Palmitate-Induced SREBP1 Expression and Activation Underlies the Increased BACE 1 Activity and Amyloid Beta Genesis. *Mol Neurobiol*. 56(7): 5256-5269, 2018.
- 10 Jahns, L., Conrad, Z., Johnson, L. K., Whigham, L. D., Wu, D., and **Claycombe-Larson, K. J.**, A diet high in carotenoid-rich vegetables and fruits favorably impacts inflammation status by increasing plasma concentrations of IFN-alpha2 and decreasing MIP-1beta and TNF-alpha in healthy individuals during a controlled feeding trial, *Nutrition research*, 52:98-104, 2018.
- 11 Jayarathne S, Stull AJ, Miranda A, Scoggin S, **Claycombe-Larson K**, Kim JH, et al. Tart Cherry Reduces Inflammation in Adipose Tissue of Zucker Fatty Rats and Cultured 3T3-L1 Adipocytes. *Nutrients*. 10(11), 2018.
- 12 Danielle Krout, James N. Roemmich, Rolando A. Garcia, Amy Bundy, Lin Yan, and Kate J. **Claycombe-Larson**, Paternal exercise is required to protect mouse offspring from high-fat diet-induced type 2 diabetes risk, In revision, *J Nutr Biochem*, October 35-44, 2018.
- 13 Marwarha G, **Claycombe-Larson K**, Schommer J, Ghribi O: Maternal low-protein diet decreases brain-derived neurotrophic factor expression in the brains of the neonatal rat offspring. *The Journal of Nutritional Biochemistry*, 45:54-66, 2017.
- 14 Danielle Krout, Anne Schaar, Yuyang Sun, Pramod Sukumaran, James N. Roemmich, Brij B. Singh, and Kate J. **Claycombe-Larson**, Loss of TRPC1 is required for exercise-induced protection against high-fat diet-induced obesity and type II diabetes, In revision, *J Biol Chem*, 292 (50): 20799-20807, 2017.
- 15 Xie, L., Zhang, K., Rasmussen, D., Wang, J., Wu, D., Roemmich, J. N., Bundy, A., Johnson, W. T., and Claycombe, K. Effects of prenatal low protein and postnatal high fat diets on visceral adipose tissue macrophage phenotypes and IL-6 expression in Sprague Dawley rat offspring. *PLoS One* 12, e0169581, doi:10.1371/journal.pone.0169581, 2017.
- 16 Dhasarathy, A., Roemmich, J. N. & **Claycombe, K. J.** Influence of maternal obesity, diet and exercise on epigenetic regulation of adipocytes. *Mol Aspects Med* 54, 37-49, doi:10.1016/j.mam.2016.10.003, 2017.
- 17 Vomhof-DeKrey, E., Darland, D., Ghribi, O., Bundy, A., Roemmich, J., and **Claycombe, K.**, Maternal low protein diet leads to placental angiogenic compensation via

- dysregulated M1/M2 macrophages and TNF $\alpha$  expression in Sprague-Dawley rats. *J Reprod Immunol* 118, 9-17, doi:10.1016/j.jri.2016.08.009, 2016.
- 18 Marwarha, G., **Claycombe**, K., Schommer, J., Collins, D. & Ghribi, O. Palmitate-induced Endoplasmic Reticulum stress and subsequent C/EBP $\alpha$  Homologous Protein activation attenuates leptin and Insulin-like growth factor 1 expression in the brain. *Cell Signal* 28, 1789-1805, doi:10.1016/j.cellsig.2016.08.012, 2016.
  - 19 **Claycombe**, K. J. et al. Decreased beige adipocyte number and mitochondrial respiration coincide with increased histone methyl transferase (G9a) and reduced FGF21 gene expression in Sprague-Dawley rats fed prenatal low protein and postnatal high-fat diets. *J Nutr Biochem* 31, 113-121, doi:10.1016/j.jnutbio.2016.01.008, 2016.
  - 20 Garcia, R. A., Roemmich, J. N. & **Claycombe**, K. J. Evaluation of markers of beige adipocytes in white adipose tissue of the mouse. *Nutr Metab (Lond)* 13, 24, doi:10.1186/s12986-016-0081-2, 2016.
  - 21 Zeng, H., **Claycombe**, K. J. & Reindl, K. M. Butyrate and deoxycholic acid play common and distinct roles in HCT116 human colon cell proliferation. *J Nutr Biochem* 26, 1022-1028, doi:10.1016/j.jnutbio.2015.04.007, 2015.
  - 22 **Claycombe**, K. J., Vomhof-DeKrey, E. E., Roemmich, J. N., Rhen, T. & Ghribi, O. Maternal low-protein diet causes body weight loss in male, neonate Sprague-Dawley rats involving UCP-1-mediated thermogenesis. *J Nutr Biochem* 26, 729-735, doi:10.1016/j.jnutbio.2015.01.008, 2015.
  - 23 **Claycombe**, K. J., Brissette, C. A. & Ghribi, O. Epigenetics of inflammation, maternal infection, and nutrition. *J Nutr* 145, 1109S-1115S, doi:10.3945/jn.114.194639, 2015.
  - 24 **Claycombe**, K. J., Roemmich, J. N., Johnson, L., Vomhof-DeKrey, E. E. & Johnson, W. T. Skeletal muscle Sirt3 expression and mitochondrial respiration are regulated by a prenatal low-protein diet. *J Nutr Biochem* 26, 184-189, doi:10.1016/j.jnutbio.2014.10.003, 2015.
  - 25 Martinez, J. A., Milagro, F. I., **Claycombe**, K. J. & Schalinske, K. L. Epigenetics in adipose tissue, obesity, weight loss, and diabetes. *Adv Nutr* 5, 71-81, doi:10.3945/an.113.004705, 2014.
  - 26 Choi, S. W., **Claycombe**, K. J., Martinez, J. A., Friso, S. & Schalinske, K. L. Nutritional epigenomics: a portal to disease prevention. *Adv Nutr* 4, 530-532, doi:10.3945/an.113.004168, 2013.
  - 27 Yan, L., Graef, G. L., **Claycombe**, K. J. & Johnson, L. K. Effects of voluntary running and soy supplementation on diet-induced metabolic disturbance and inflammation in mice. *J Agric Food Chem* 61, 9373-9379, doi:10.1021/jf401588h, 2013.
  - 28 **Claycombe**, K. J., Uthus, E. O., Roemmich, J. N., Johnson, L. K. & Johnson, W. T. Prenatal low-protein and postnatal high-fat diets induce rapid adipose tissue growth by inducing Igf2 expression in Sprague Dawley rat offspring. *J Nutr* 143, 1533-1539, doi:10.3945/jn.113.178038, 2013.
  - 29 Zhou, Z., Neupane, M., Zhou, H. R., Wu, D., Chang, C. C., Moustaid-Moussa, N., and **Claycombe**, K. J., Leptin differentially regulate STAT3 activation in ob/ob mouse adipose mesenchymal stem cells. *Nutr Metab (Lond)* 9, 109, doi:10.1186/1743-7075-9-109, 2012.
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### **Additional Publications**

#### **Book chapters**

Kate J. Claycombe, Hauwei Zeng, Gerald F Combs, *Nutrition and Epigenetics*, 2015 (Chapter 12), Dietary Effects on Adipocyte metabolism and Epigenetic, CRC Press, Boca Raton, FL.

Meydani SN, Claycombe KJ, Sacristan C. Vitamin E and gene expression. 2001 (Chapter 16) 393-424. Nutrition-Gene Interactions in Health & Disease. (1<sup>st</sup> Edition, Modern Nutrition Series), CRC Press, Boca Raton, FL.

#### **Bulletins**

1. Claycombe, K.J., 2004 “C-reactive protein, Obesity and Immune System”, MAES/MSU
2. Claycombe, K.J., 2005“Montmorency tart cherries: The healing fruit”, Cherry Marketing Institute
3. Claycombe, K.J., 2008“Researchers make discoveries on what does and does not affect immune system”, MSU News Bulletin

#### **Newspaper article**

Chicago Tribune article. "Salmon Dilemma, With higher PCB levels showing up in farmed variety, are the health benefits worth the risk?", Interviewed and quoted in the article, January 28, 2004.

#### **Press Release**

“Effects of Cherry Flavonoids on Cardiovascular Disease Biomarkers”, Quoted in the press conference during the National Cherry Festival by Cherry Marketing Institute, Traverse City, Michigan, April 2004.

### **Research Support**

#### **Ongoing Research Support**

- NIH COBRE, Historical trauma and resilience as a biological state and its association with the effects of the traditional Indigenous food chokeberry, UND, 2021-2026, Co-Investigator
- NIH COBRE, Stress and Health in American Indian Pregnancies, UND, 2021-2026, Co-Investigator
- USDA Agricultural Research Service Project #3062-51000-054-00D, 2019-2024, PI
- USDA NIFA, Maternal Nutrition, Epigenetic Modifiers, And Programming Of Fetal Organ Development In Beef Cattle, 2019-2014, Collaborator
- NIH COBRE Epigenomics of Development and Disease, UND, 2019-2024, Collaborator
- USDA NIFA, Synergistic effects of omega 3 polyunsaturated fatty acids and anthocyanins in inflammation-associated obesity and insulin resistance, 2018-2023, Consultant

#### **Funded and completed**

- USDA Agricultural Research Service Project #3062-51000-052-00D, 2014-2019, PI

- 2016-2018, USDA ARS Research Associate Program Class of 2016, Maternal obesity, The placental microbiome and in utero short chain fatty acid-mediated offspring obesity, PI.
- USDA ARS Professional Activity Grant, For support of American Society of Nutrition Symposium at EB 2017, April-July 2017, PI.
- NIH COBRE Epigenomics of Development and Disease, UND, PI, Pilot Grant, 2014-15.
- 2015 USDA ARS professional activity Fund, The obesity Society, Basic Science Section Annual Meeting a nd graduate student and postdoc poster competition, PI
- 2014 USDA ARS professional activity Fund, American Society for Nutrition, Nutrient and Gene Interaction Research Interest Section Symposium, PI
- 2012, USDA ARS professional activity Fund
- 2007, Tekeda Pharmaceutical Company, Educational Grant Award for FASEB Summer Conference, Nutritional Immunology: Its Role in Health and Disease.
- Office of Vice President of Research and Graduate Studies at the Michigan State University, Intramural Research Grants Program for New Investigator, “Obesity-Associated Inflammation and Adipose Tissue”, 2005-2007, Role: PI.
- Office of Vice President of Research and Graduate Studies at the Michigan State University, Biomedical and Health Research Initiative, Cardiovascular Group, 2005-2007, Role: Co-investigator. 2006-2009, in postdoc salary support.
- 2007, Tekeda Pharmaceutical Company, Educational Grant Award for Experimental Biology Symposium.
- Project Green, Michigan State University Agricultural Experimental Station, Project Continuation Award “Preventive Effects of Tart Cherries on Cardiovascular Diseases Risk Biomarkers: C- Reactive Protein and Interleukin-6”, 2005-2006, Role: PI.
- Michigan Agricultural Experimental Station, Multistate Research Project Fund, #MICL02036, “N-3 Polyunsaturated Fatty Acid and Human Health and Disease”, 2002-2007, Role: PI.
- Cherry Marketing Institute, Research Grant, Preventive Effects of Tart Cherries on Cardiovascular Diseases Risk Biomarkers: C- Reactive Protein and Interleukin-6, 2004-2005, Role: PI.
- ROIP research seed grant, Michigan State University, College of Human Ecology, 2002-2003, “obesity-induced Cardiovascular Diseases: Inhibitory Effects of N-3 Fatty acid and vitamin E on Plasma C-reactive Protein (CRP) and interleukin-6 (IL-6) concentrations”, Role: PI.