# TENURE RESUME

# CURRICULUM VITAE

**K. Leigh Greathouse, Ph.D., M.P.H., M.S., R.D.**

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**Research Objective:** Determine how the diet and microbiome converge to influence obesity- associated cancer risk, prognosis and survivorship

# Citizenship and visa status: U.S.A.

**Education:**

2011 Masters of Public Health (Epidemiology and Biostatistics), **Johns Hopkins**

**Bloomberg School of Public Health,** Baltimore, MD

2010 Ph.D. Molecular Carcinogenesis, Graduate

School of Biomedical Sciences, **University of Texas M.D. Anderson Cancer Center**, Science Park Research Division, Smithville, TX

2001 M.S., Exercise and Sports Nutrition,

**Texas Woman’s University**, Denton, TX

1997 B.S., Nutrition and Food Science

**Stephen F. Austin State University**, Nacogdoches, TX

# Professional Licensure:

2000-Present Registered Dietitian (#841205)

# Academic Employment and Professional Experience:

2015-Present Assistant Professor, Nutrition Sciences, Family and Consumer Sciences, Robbins College of Health and Human Sciences, Baylor University, Waco, TX

2014-2015 *Research Fellow*, National Cancer Institute, Bethesda, MD

2010-2014 *Postdoctoral Fellow,* Cancer Prevention Fellowship Program, NCI, Bethesda, MD

2005-2010 *Graduate Research Assistant,* Department of Carcinogenesis, The University of Texas, MD Anderson Cancer, Science Park Research

Division, Smithville, TX

2003-2005 *Private Practice Dietitian*, Dallas, TX

2002-2003 *Graduate Research Assistant*, Dr. Nathan Mills, Ph.D., Department of Biology, Texas Woman’s University, Denton, TX

2000-2001 *Dietetic Intern*, Texas Woman’s University, Denton, TX

2000-2001 S.N.A.P. (Sports Nutrition for Active People) Internship Texas Woman’s University, Denton, TX

1999-2002 *Graduate Research Assistant*, Dr. Nancy DiMarco, Ph.D., Institute for Women’s Health, Texas Woman’s University,

Denton, TX

1997-1999 *Dietetic Technician*, Parkland Hospital, Dallas, TX

# Honors and Awards:

# 2017 Invited speaker, Collegiate and Professional Sports Dietetics Association,

# *The Microbiome and Pre/Probiotics: Applications for Clinical Practice*

# 2015-Present Editorial Board Member - *Carcinogenesis*

2015 Invitation to present research findings at the *Human Immunity and the Microbiome in Health and Disease, Cell Symposia*

2013 Aspen Cancer Conference Fellow

# 2012 National Institutes of Health Merit Award

2010 Cancer Prevention Fellowship, National Cancer Institute

2009 Society of Toxicology CCT Scientific Abstract Student Travel Award, PPTOXII Meeting, Miami Beach, FL

2008 Schissler Foundation Fellowship in Human Genetics of Disease, Graduate School of Biomedical Science, University of Texas

M.D. Anderson Cancer Center, Houston, TX

2008 R.W. Butcher Award, Graduate School of

Biomedical Science, University of Texas M.D. Anderson Cancer Center, Houston, TX

2008 Merck Award, Carcinogenesis Special Section, Society of Toxicology Annual Meeting, Seattle, WA

**Scholarly Activity:**

Research Interests

Colon Cancer Prevention

Obesity prevention

Microbiome-host interactions

Diet-microbiome interactions

Physical-activity interactions

Community level dietary and physical activity patterns, behaviors and policy

**Refereed Publications:**

**K. Leigh Greathouse**, M. Faucher, M. Hastings-Tolsma. “The Gut Microbiome, Obesity, and

weight control in Women’s Reproductive Health.” *Western Journal of Nursing Research*

(in press).

Bríd M Ryan, PhD, Jin Jen, MD, Ana I Robles, PhD, Cain McClary, MD, Kara Calhouna, BS, Elise D Bowmana, M.Sc., Kirsi Vähäkangas, MD, **K. Leigh Greathouse**, PhD, Wang, Yie, MD, Susan Olivo Marston, PhD, Angela S. Wenzlaff, MPH, Bo Dengb, MD, Ping Yang, MD, Ann G. Schwartz, PhD, Curtis C Harris, MD. A DRD1 Polymorphism Predisposes to Lung Cancer among those Exposed to Secondhand smoke during Childhood. *Cancer Prevention Research.* 2014 Oct 3.

**K. Leigh Greathouse,** Jamie Chriqui, Richard P. Moser, Tanya Agurs-Collins, Frank M. Perna. The Association of Soda Sales Tax and School-Nutrition Law: A Concordance of Policies. *Public Health Nutrition.* 2013 Nov 14:1-6.

**Greathouse KL**, Bredfeldt T, Everitt JI, Lin K, Berry T, Kannan K, Mittelstadt ML, Ho SM, Walker CL. Environmental Estrogens Differentially Engage the Histone Methyltransferase EZH2 to Increase Risk of Uterine Tumorigenesis. *Mol Cancer Res*. 2012 Apr;10(4):546-57. **Appeared as a Highlight in this issue.**

Bredfeldt, T.G, **Greathouse, K.L.,** Berry, T.D., Hensley, S., Safe, S.H., Hung, M.C., Bedford, M.T., Walker, C.L. Non-Genomic estrogen receptor signaling modulates EZH2. *Molecular Endocrinology* 2010 24, 5:993-1006.

**K.L. Greathouse,** K.L., J.D. Cook, K. Lin, B.J. Davis, T. Berry, T. Bredfeldt, C.L.Walker. Identification of uterine leiomyoma genes developmentally reprogrammed by neonatal exposure to diethylstilbestrol. *Reproductive Sciences*. 2008 Oct; 15(8): 765-778.

**K.L. Greathouse,** M. Samuels, N.M. DiMarco, D.S. Criswell. Effects of increased dietary fat and exercise on skeletal muscle lipid peroxidation and antioxidant capacity in male rats. *European Journal of Nutrition*. 2005 44, 7: 429-435.

**EDITED BOOK CHAPTER**

**K.L. Greathouse** and C.L. Walker**.** Molecular Mechanisms of Endocrine Disruptors. In: *Environmental Impacts on Reproductive Health and Fertility.* (pp. 72-87)Cambridge Press. 2009.

**MANUSCRIPTS UNDER REVIEW FOR PUBLICATION**

**L. Greathouse**, J. White, V. Bliskovsky, A. Vargas, E. Polley, E. Bowman, M. Khan, A. Robles, B. Ryan1, A. Dzutsev, G. Trinchieri, M. Pineda, S. Bilke, P. Meltzer, C. Deming, S. Conlan, J. Oh, J.A. Segre, C.C. Harris. (under review at *Cancer Discovery*). “Microbiome-

TP53 Gene Interaction in Human Lung Cancer.”

N. Daquigan, A. M. Seekatz, **K. L. Greathouse**, V. B. Young, J. R. White. “High-rsolution

profiling of the gut microbiome reveals the extent of *Clostridium difficile* burden.” (Under

review at *mSystems*)

Ashley J. Vargas, **K. Leigh Greathouse**, Husen Zhang, Akriti Trehan, Jessica Saw, Elise Bowman, Giorgio Trinchieri and Curtis C. Harris. “The V3-4 variable region of the 16S rRNA gene performs better than the V4 variable region in human esophageal tissue samples.” (Under review at *Microbiome*)

**INVITED PUBLICATIONS**

**K.L. Greathouse,** C.C. Harris, S. Bultman. Dysfunctional families: Clostridium scindens and secondary bile acids inhibit the growth of Clostridium difficile. *Cell Metabolism.* 21(1): 9- 10, 2015.

**REFEREED PRESENTATIONS AT PROFESSIONAL MEETINGS**

**K. Leigh Greathouse**, J. White, V. Bliskovsky, A. Vargas, E. Polley, E. Bowman, M. Khan, A. Robles, B. Ryan, A. Dzutsev, G. Trinchieri, M. Pineda, S. Bilke, P. Meltzer, C. Deming, S. Conlan, J. Oh, J.A. Segre, C.C. Harris. Microbiome-TP53 Gene Interaction in Human Lung Cancer. *Human Immunity and the Microbiome in Health and Disease, Cell Symposia, Montreal, Canada, Sept. 27-29, 2015.* (Invited talk)

**K. Leigh Greathouse** and Curt. C. Harris. Identification of mucosa-associated microbiota in human colon and lung cancer: a multi-platform approach**.** *Aspen Cancer Conference, July 13th, Aspen, CO, 2013.* (Invite talk)

**K. Leigh Greathouse,** E. Polley, A. Dzutsev, C.C. Harris, Identification of mucosa-associated bacteria in colon cancer: a multiplatform approach. *Aspen Lung Conference, June 4-7th, 2013, Aspen, CO.* (poster)

**K. Leigh Greathouse,** E. Polley, A. Dzutsev, C.C. Harris, Identification of bacteria associated with colon cancer: a multiplatform approach. *Cell Symposia: Microbiome and Host Health, May 12-14th, Lisbon, Portugal.* (poster)

**K. Leigh Greathouse**, J. Chriqui, T. Agers-Collins, F. Perna. State Sales Tax on Snacks and Soda is Positively Associated with Nutrition Policy in U.S. Schools. *International Society for Behavior Nutrition and Physical Activity Conference, May 23rd-26th, Austin, TX, 2012.* (poster)

**Greathouse, K.L.** and Platz, E. “Association of maternal education levels with maternal weight gain and high birth weight babies”. *SKCCC Fellow Research Day, Tuesday, May 17, 2011 at Johns Hopkins Cancer Research Building, Baltimore, MD.* (poster)

**Greathouse KL,** Bredfeldt T, Everitt JI, Lin K, Berry T, Kannan K, Mittelstadt ML, Ho SM, Walker CL Xenoestrogen-specific modulation of non-genomic signaling through histone methyltransferase, EZH2, correlates with developmental reprogramming of gene expression and tumorigenesis**.** *American Institute for Cancer Research Annual Conference, Nov 4h, 2011.* (poster)

**K.L. Greathouse**, J.D. Cook, K. Lin, B.J. Davis, T. Berry, T. Bredfeldt, C.L.Walker. Identification of genes developmentally reprogrammed in the uterus by neonatal exposure to xenoestrogens. *PPTOXII Meeting, Miami Beach, FL, 2009*. (Invited talk)

**K.L. Greathouse**, J.D. Cook, K. Lin1, B.J. Davis, T. Berry, T. Bredfeldt, C.L.Walker. Identification of estrogen responsive genes developmentally reprogrammed by xenoestrogen exposure. *Gulf Coast Society of Toxicology: 2007 Annual Meeting.* (poster)

T.G. Bredfeldt, **Greathouse, K.L**., Bedford, M.T., Safe, S.H., Hung, M.C., Walker, C.L. Regulation of Histone Methylation via Non-Genomic Estrogen Receptor Signaling to Histone Methyltransferases. *Gulf Coast Society of Toxicology: 2007 Annual Meeting.*

(poster)

**Greathouse, K.L**., Davis, B.J., Goewey, J.A., Cook, J.D., Walker, C.L. (2005) “Identification of a Critical Period for Xenoestrogen-Induced Developmental Re-Programming of the Reproductive Tract.” *Gulf Coast Society of Toxicology: 2005 Annual Meeting, Austin, TX.* (poster)

DiMarco, N.M., **Greathouse, K.**L.. Essery, E. V. Kallio, A. K., Nichols, D. L., & Sanborn, C F. (2003). Impact of physical activity on bone parameters and BMI of K - 5th graders. *Medicine and Science in Sports and Exercise. 35(5) Supplement 1:S76.*

Essery, E.V. Nichols, D.L. Sanborn, C. F., DiMarco, N.M., **Greathouse, K. L**. & Kallio, A. K. (2003).Relationship of body composition, anthropometrics, age and gender to bone mineral density in children. *Medicine and Science in Sports and Exercise. 35(5) Supplement 1:S78.*

Horea, M. **Greathouse, K**, Dart, L. Sanborn, C. F., & DiMarco, N.M. (2003). Restricted feeding and bone mass in an animal model of the female athlete triad. *Medicine and Science in Sports and Exercise. 35(5) Supplement 1:S76.*

Horea, M., DiMarco, N.M., **Greathouse, K.**L., Dart, L., & Sanborn, C. (2002).Voluntary running, bone mineral content, body weight, and dietary intake in growing female rats. *Medicine and Science in Sports and Exercise, 34:S110*

Horea, M., DiMarco, N., **Greathouse, K. L**., & Dart, L. (2004). Bone mass changes in a rodent model of the female athlete triad. *Medicine and Science in Sports and Exercise, 36(5) Supplement 1: S106.*

**GRANTS AND CONTRACTS**

2017-present

*Baylor University (URC – mid-range)*

Project title: “Mediation of Host-Pathogen Interaction by Bacterial Outer Membrane

Vesicle Small RNAs in Colon Cancer”

Investigators: K. Leigh Greathouse (PI), Joseph Taube (Co-PI)

Source of Funding: Baylor Univesity (2017-2018; $7523)

2016-present

*Collaborative Faculty Research Program*

Project title: “Identification of a Multi-omic Predictive Signature for Preterm Birth in Obese African American Women”

Investigators: Mary Ann Faucher, K. Leigh Greathouse (PI)

Source of Funding: Baylor University (2016-2017; $75,000)

*Summer Research Sabbatical*

Project title: COLON-MD (Pilot): Colon cancer LONgitudinal study of the Microbial and Dietary factors that influence response to treatment, recurrence and survival

Source of Funding: Baylor University (summer salary 2017)

*Summer Research Sabbatical*

Project title: “Microbiome Alterations in Colorectal Carcinoma Between Obese and Non-Obese Individuals.”

Source of Funding: Baylor University (summer salary 2016)

*Baylor University (URC – mid-range)*

Project title: “Validation of 2FA as a Tool for Studying Oxytocin Receptors in Human Brain”

Investigators: Maria Boccia (PI), K. Leigh Greathouse (Co-PI)

Funding: Baylor University (2017-2018; $5735)

2015-present

*Center for Cancer Research FLEX Synergy Award*

Project title: “The Microbiome-inflammation relationship in the etiology of lung cancer”

Investigators: Curtis Harris (PI), Giorgio Trinchieri, Julie Segre, David Schrump, Corey Carter, Frank Gonzales, K. Leigh Greathouse

Source of Funding: National Cancer Institute – Intramural

Funding:$1.2 million for 3 years

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**TEACHING**

# *NUTR 2351 Nutrition (3 credits)*

# *NUTR 5354 Public Health Nutrition (3 credits)*

**MENTORSHIP AND ADVISING**

**Graduate**

2016-Pres Henry Lujan (Secondary Mentor/Thesis Committee Member)

2016-Pres Ahmed Ismaeel (Mentor/Advisor)

2016-Pres Meredith Morgan (Mentor/Advisor)

2015-2016 Hailin Chi (Mentor)

2015-2016 Akriti Trehan (Co-Advisor – National Cancer Institute)

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**MEMBERSHIP**

2013-present American Association for Cancer Research, Active Member 2005-2010 American Association for the Advancement of Science, Student

Member

2001-present American Dietetic Association, Associate Member

2008-2010 American Chemical Society, Student Member 2007-2010 Society of Toxicology, Student Member